PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	How do doctors experience the interactions among professional fulfillment, organizational factors and quality of patient care? A qualitative study in a Norwegian hospital
AUTHORS	Bååthe, Fredrik; Rosta, Judith; Bringedal, Berit; Rø, Karin

VERSION 1 - REVIEW

REVIEWER	Iona Heath Royal College of General Practitioners UK
REVIEW RETURNED	28-Oct-2018

GENERAL COMMENTS	This study is described as an example of interactive research (p4, line 6). The approach seems to be similar to that of action research and this reader would find it useful to understand the differences, if any between these two approaches. Throughout the paper, the term professional satisfaction/fulfilment is used. I find this awkward and tedious to have to read repeatedly. It would be helpful if the authors could choose either satisfaction or fulfilment rather than attempting always to use both. I would favour fulfilment because it is a broader concept and is not yet as clichéd as satisafaction. There is quite a lot of repetition and I think that the whole paper would benefit from being shorter and tighter. As the authors themselves note, the sample size is extremely small with only eight interviewees. We learn this in the Abstract but only on page 9 do we finally learn that all the 'physicians' are in fact surgeons. This reads oddly in a UK context and I think that there may be some translation issues here. We learn that the hospital studied provides medical, surgical and psychiatric care, and although the authors claim a measure of diversity in terms of the gender and length of experience of the interviewees, there seems to have been no attempt to recruit from a wider range of clinical disciplines. The reasons for only interviewing eight doctors, all of whom were surgeons, should be more clearly explained. In the context of the small sample size, it would be helpful to know the total number of doctors working in the hospital and the number of surgeons from whom the interviewees were selected. At no point in the paper is there any mention of whether data saturation was either sought or achieved. This needs to be explained. In line 10 on page 12, we are told that the average length of the interviews was 74 minutes. I think we also need to know the range. Presumably, the interviews were not only transcribed but also translated from Norwegian to English for inclusion in the paper.

	This is not mentioned and should be. One of the problems with the translation is that the same linguistic voice is experienced in the text of the paper and in the quotations, which is unusual. For example, both use 'impact' as a verb where I would much prefer at least some use of 'affect'. On page 14, line 15, in a quotation, the doctor refers to epicrisis times. I am afraid that I have no idea what this means and I think this may be another translation problem. Similar difficulties arise on page 24, line 3 with 'emphasis on production focus' (meaning what precisely?) and on page 14, line 39, 'a developed mindset' (ditto). I have a particular problem on page 19, in the paragraph beginning on line 47. We have been told that feedback is a crucial stage of interactive research, and yet the only mention of it comes in this 6-line paragraph. Surely this should be reported in more detail. Then on page 8, lines 22-27, I completely lose the plot. I read: 'This behavior of limited physician engagement in organizational development work … primarily relates to physicians having been trained as biomedical experts, based on the biomedical science of certainty.' Suddenly, I find myself wondering whether the authors have ever done any clinical work. What is this 'biomedical science of certainty'? Uncertainty is the stuff of clinical work and the idea that doctors are unfamiliar with paradox and surprising outcomes is frankly laughable.

REVIEWER	Ashim Roy Maastricht University, the Netherlands Nationality: Bangladesh
REVIEW RETURNED	17-Nov-2018

GENERAL COMMENTS	The report needs substantial improvement for the need of the journal's reputation and international readership. 'How do hospital physicians experience the interactions between professional fulfillment, organization and quality of care? A qualitative study' The authors have aimed to address the influence of organizational factors on professional fulfillment/satisfaction and quality of health care based on experience of physicians and used a qualitative interdepended model. The issue contains adequate relevance to be investigated taking into account the growing complexity in the health systems and healthcare systems globally. However, there are substantial rooms to improve the report. Brief general comments The manuscript needs a proofreading by a native English speaker. Physician is different from Surgeon, but all of them are Doctor; since the authors have sampled doctors from a surgical department, most probably the term 'physician' is not appropriate but surgeon. However, since the sample trainee doctors may not be identified as Surgeons, 'Doctor' could be the right term to use in this report. Introductory theory can be improved with addition of a brief description on the Norwegian healthcare system, particularly regulatory and management structure. A clarification on the concept of 'professional fulfillment' is needed, since often it is not the same as 'job satisfaction'. The report mainly and indirectly

	indicates the issue of job satisfaction rather than professional fulfillment. An example, to become a doctor according to one's childhood dream is a professional fulfillment which is quite different from job satisfaction. Also, the working concept of 'quality of care' and the specific organizational factors are the essential theories can be added in the introduction for an in-depth understanding. Methods section has to be reorganized and coherently presented. The theory of interactive research can be more clearly written. Moreover, the authors' ultimate goal (i.e., secondary objective that remains unaddressed) can be linked to the outcome of the interactive research. Results section can be improved presenting the data as a qualitative analytical format rather than using mostly quotations of the study participants. Discussion can be articulated based on results rather than bringing the results nearly as it is. The authors can answer the 'why, how and so' issues of the findings based on the local organizational, social, and political contexts. The authors can also bring examples of health systems of the similar countries. Specific comments Title Currently the place of study is not understandable; '…A qualitative study at (city name), Norway' will fill this gap. Abstract Abstract can be adapted according to the improvement in the manuscript. Keywords The word 'Patient-quality' is not understandable. Introduction The theoretical concept is not complete and described clearly. The authors can interlink between physicians' job satisfaction, organizational factors and healthcare quality through a literature review in the field of work design / occupational psychology which will frame out their concept model. There are raft of research articles in this field which contradicts the authors' one of the reference claims in this section (page 4; line 29-36). The theories on 'high quality care' organizational factors and professional fulfillment are needed to understand the contents of the report. Brief background information on organization of the local health care system is needed to understand the local contexts. The theory on simple, complicated, and complex domains are not clear. Moreover, after reading the report, it was not identified any purpose of these theories. Moreover, these issues are not coherently fitting in the introduction. The rationale (social and scientific) of the study in Norway is not addressed. Also the aim of the study is missing the study settings. It is good to see the ultimate goal (i.e., secondary objective) of the study here. Methods Method section needs to be substantially reorganized for better coherence and readability. The sequence of sub-headings can be as follows: study design, settings and study population; sample size (i.e., what strategy was used to determine sample size) and sampling method; data collection tool and techniques (i.e., by

	whom and how the tool was developed); ethical considerations and data analysis. The concept model: the conceptual model needs the source reference. By 'patient outcome', do the authors mean health outcome and what does it mean 'scheduling'? Also all variables are not logically linked to bi-directional relationship; please re-check. Settings: Only inclusion of surgical department may not ensure heterogeneity in the study sample; it was logical to include doctors from different departments as well. Participants: The authors are suggested to use internationally established terminologies; for example, 'purposive sampling' instead of 'purposeful heterogeneity sampling'; 'maximum variation sampling can be used in-stead of heterogeneity sampling. Secondly, what strategy was used for sample size (e.g., information saturation technique...)? Analysis: The authors are requested to clarify the following issues: language of interviewing; if interview was conducted in the local language, then was it translated into English; how was transcribed data cross-checked; was the data coded; if yes, was it manifest coding or abstract coding? Was the data analysed using a software or by manually? Other issues here: what does it mean "senior PhD-level researcher"? "…principles of qualitative analysis was used"- please mention the exact principle / method which was used for data analysis (for example, was it 'directed / narrative / summative qualitative content analysis'?) Ethics: This section can be written more clearly and concisely; settings section also include some ethical issues which can be replaced here. Results Overall issues: □ Subheadings of the result section follow the concept model; however, not all variables are addressed. □ There are too many quotations; many of them are not adequately understandable. The concept model-based thematic coding and a categorized presentation of findings can be better understandable. The current use of many quotations contradicts to an accepted standard of analysing qualitative data. □ The theory of Simple, Complicated, and Complex categorization of findings are not found in the result section. □ The issue of physicians' 'time constraint' appears repeatedly which could be organized coherently and thematically. □ An addition of a brief description of the healthcare system structure and the role of organizational / facility managers as background information can also improve better understanding of the findings. Other issues: The authors are repeatedly using "interviewed physicians" throughout the report which can be replaced by 'participants'. Page 11, line 20 – "physicians expressed": does it mean that all participants expressed the same opinion? The authors can provide a table here for the background information/characteristics of the participants with a code number for each participant and that code can be used at the end of each statement indicating the exact participant indirectly. Some words / phrases can be changed with

	typologically correct or contextually better meaningful ones such as: patient error, impacted me fundamentally, patient care quality etc. Strengths and weaknesses This section can be replaced at the end of discussion section. This study employed a qualitative study and sampled physicians (doctors) from a surgical department of an emergency hospital; thus, generalizability cannot be claimed. To understand the opinion/ experience of managers are also quite important to make any organizational change, which is a weakness of this study. It is not understandable why a 74 minutes interview (with 20 pages notes) rather than planned 60 minutes is a strength of the study. Discussion Discussion needs to be enriched with in-depth analysis based on the results and correlating with the social, organizational, policy and political contexts. Currently the discussion is mostly repetitions of the results. Several issues: high quality care can be a vital issue of doctors' satisfaction but not necessarily the "single most important dimension"; an issue cannot be interesting and at the same time, discouraging (page21; line 38). "The 2017 revision of the Declaration of Geneva…" - (page 22; lines 38 – 45): reference is needed. Page 23; lines 25 – 41: it is not clear why physicians feel stressed because of managers' mind-set of maximizing production. Some health financing, allocation and regulatory issues including method of physicians' payment can be discussed, if it is applicable and relating to the context. What about reward and reinforcement system? Page 23; line 46, 48: 'prioritization' of what and what is nearness practice? Page 24; lines 20 – 36: what does it mean "enlightened physicians"? What extra roles are expected from them to solve the manager-physician tension? Secondly, what type of care to the provider can solve this problem? Is it financial or any other type of incentive or participatory management system ...has to be explained clearly. Page 25; lines 30 -53: the key messages are not clear enough. About the last subheading – physicians' strategies to handle the dynamic interactions relating to fulfillment/satisfaction, organization and quality of care: this section mostly shows repetitions of the results; there is lack of clarity about the strategies given by the study participants rather most strategies are hired from other studies. Moreover, the concept model is an interdependent (bi-directional) model rather than a linear mediation model meaning the low quality of care also should influence managers negatively; however, the authors indicate that the managers are interested for product quantity rather than quality. This is a counterproductive finding to the model. Page 27; lines 22 – 36: it is not clear what has been argued here; the authors need to distinguish the roles of the physicians and managers in Norway. It is confused now whether the physicians become the managers. Page 28; lines 24 - 43: this is a good point of discussion, but the implication of the message is missing. Page 30; line 8: what organizational factors to be changed that have to be clearly and specifically addressed. Page 30; line 46: it is unclear why physicians compromise to stretch themselves; is it due to lack of job market, any time-bound agreement with the organization or what? In a country like Norway, why physicians cannot voice over management or how a

	hierarchical system of management sustains - is a question to be answered from the values of socio-political and ethical dimensions. Also, it seems that quality of care is challenged by week managerial system. However, the social and technical skills of the physicians need to be addressed in this respect. This is an important weakness of the study and a rationale of investigating the views of managers to generate a concrete conclusion. Page 31; line 11: what does it mean "collaborative study"; it appears first time. Contributorship The contributions / authorship can be individualistic rather than group-based. References The authors have used extensive and relevant sources, however, articles of the field of occupational psychology, quality of care and providers' satisfaction can be good sources to improve the report. The authors are thanked for addressing an important issue of the healthcare system; however, a substantial improvement is needed for international readership.

VERSION 1 – AUTHOR RESPONSE

Reviewer's comment

'How do hospital physicians experience the interactions between professional fulfillment, organization and quality of care? A qualitative study'

The authors have aimed to address the influence of organizational factors on professional fulfillment/satisfaction and quality of health care based on experience of physicians and used a qualitative interdepended model.

The issue contains adequate relevance to be investigated taking into account the growing complexity in the health systems and healthcare systems globally.

However, there are substantial rooms to improve the report.

Reviewer 1 states: There is quite a lot of repetition and I think that the whole paper would benefit from being shorter and tighter.

Response: We have reworked the text and the structure to provide a shorter and tighter manuscript.

Brief general comments

□□The manuscript needs a proofreading by a native English speaker.

Response: It has been proofread by a native English speaking firm (from Australia) so that was a surprising comment. We will inform the firm about this input. We kindly ask the Editor to advice whether the manuscript should be proofread a second time (by another firm).

□□Physician is different from Surgeon, but all of them are Doctor; since the authors have sampled doctors from a surgical department, most probably the term 'physician' is not appropriate but surgeon. However, since the sample trainee doctors may not be identified as Surgeons, 'Doctor' could be the right term to use in this report.

Also mentioned by reviewer 1

Response: The concept is changed.

□□Introductory theory can be improved with addition of a brief description on the Norwegian healthcare system, particularly regulatory and management structure.

Response: We agree and have adjusted accordingly in the introduction.

□□A clarification on the concept of 'professional fulfillment' is needed, since often it is not the same as 'job satisfaction'. The report mainly and indirectly indicates the issue of job satisfaction rather than professional fulfillment. An example, to become a doctor according to one's childhood dream is a professional fulfillment which is quite different from job satisfaction.

Reviewer 1 stated: "I would favor fulfilment because it is a broader concept and is not yet as clichéd as satisfaction".

Response: There are different views if satisfaction or fulfillment is the right term. We note that also the two reviewers provide divergent opinions. Reviewer 1 suggesting "satisfaction" and reviewer 2 suggesting "fulfillment" as the appropriate term. We are aligning with the work from Stanford Medicine Well MD center and their usage of Professional Fulfillment. We have adjusted the text accordingly.

□□The working concept of 'quality of care' and the specific organizational factors are the essential theories can be added in the introduction for an in-depth understanding.

Response: We agree, have revised the text under introduction to provide additional clarity.

□□Methods section has to be reorganized and coherently presented.

Response: We agree, have checked the structure according to BMJ Open author guidelines. And have revised the text for increases readability and coherence.

□□The theory of interactive research can be more clearly written.

Reviewer 1 wants to understand the difference to Action research, if any

Response: We agree, have rewritten and revised the text to provide additional clarity.

□□Moreover, the authors' ultimate goal (i.e., secondary objective that remains unaddressed) can be linked to the outcome of the interactive research.

Response: We agree. Have reviewed the text to provide additional linkage and clarity.

□□Results section can be improved presenting the data as a qualitative analytical format rather than using mostly quotations of the study participants.

Reviewer 1 wants numbering of the quotes.

Response: We don't agree. Qualitative research has a long tradition of using quotes that are representative of the findings to provide the reader with the "original voice". We will keep quotes. We have provided a coded number for each doctor to present "the source for the quote" without exposing the participants.

□□Discussion can be articulated based on results rather than bringing the results nearly as it is.

Response: We agree, have reworked the text substantially to present a more focused discussion.

□□The authors can answer the ‘why, how and so’ issues of the findings based on the local organizational, social, and political contexts.

Response: We are not sure what the reviewer is looking for. We have added a local Norwegian context in the introduction and we are returning to that in the discussion.

□□The authors can also bring examples of health systems of the similar countries.

Response: We are not sure what the reviewer is looking for. We agree that contextuality is important. We have added a local Norwegian context in the introduction and we are returning to that in the discussion.

Specific comments reviewer 2:

Title

Currently the place of study is not understandable; ‘…A qualitative study at (city name), Norway’ will fill this gap.

Response: We agree, have added Norway as country to clarify place of study. To also include city will not provide any further clarity but risk unintended ethical recognition consequences.

Abstract

Abstract can be adapted according to the improvement in the manuscript.

Response: We agree and have adjusted accordingly.

Keywords

The word ‘Patient-quality’ is not understandable.

Response: Adjusted to “Patient-care quality”.

Introduction

The theoretical concept is not complete and described clearly. The authors can interlink between physicians' job satisfaction, organizational factors and healthcare quality through a literature review in the field of work design / occupational psychology which will frame out their concept model.

Response: We added text and further references in the Introduction to increase completeness.

There are raft of research articles in this field which contradicts the authors’ one of the reference claims in this section (page 4; line 29-36).

Response: We need example of what references the reviewer is considering to respond succinctly. We adjusted the text in the introduction to create additional clarity.

The theories on ‘high quality care’ organizational factors and professional fulfillment are needed to understand the contents of the report.

Response: We added text and references to clarify this in the introduction.

Brief background information on organization of the local health care system is needed to understand the local contexts.

Response: We added text about the Norwegian context in the introduction.

The theory on simple, complicated, and complex domains are not clear. Moreover, after reading the report, it was not identified any purpose of these theories. Moreover, these issues are not coherently fitting in the introduction.

Response: We removed this.

The rationale (social and scientific) of the study in Norway is not addressed.

Response: We added this to the introduction

Also the aim of the study is missing the study settings.

Response: We think the study setting is better placed in Methods.

It is good to see the ultimate goal (i.e., secondary objective) of the study here.

Response: We have alternated between introduction and Methods to find the best fit for this text. Following the input from the reviewer we have considered moving it to the introduction We have concluded that we find it best fitting in Methods.

Methods

Method section needs to be substantially reorganized for better coherence and readability. The sequence of sub-headings can be as follows: study design, settings and study population; sample size (i.e., what strategy was used to determine sample size) and sampling method; data collection tool and techniques (i.e., by whom and how the tool was developed); ethical considerations and data analysis.

Response: We revised the text for readability and coherence with BMJ Open author guidelines.

The concept model: the conceptual model needs the source reference. By 'patient outcome', do the authors mean health outcome and what does it mean 'scheduling'? Also all variables are not logically linked to bi-directional relationship; please re-check.

Response: The conceptual model does not build upon a published publication, but was created as a “conversational tool” in order to facilitate the interviews by a graphic model of the study focus. This has been clarified in Methods.

Settings: Only inclusion of surgical department may not ensure heterogeneity in the study sample; it was logical to include doctors from different departments as well.

Also mentioned by reviewer 1 : The reasons for only interviewing eight doctors, all of whom were surgeons, should be more clearly explained. In the context of the small sample size, it would be helpful to know the total number of doctors working in the hospital and the number of surgeons from whom the interviewees were selected.

Response: We now describe that one department chose to participate in the study in the Methods section. Further, the hospital management was clear on the need to minimize the number of interviews, to avoid burdening the doctors. We have substantiated how we worked to ensure good quality research given the limited number. Heterogeneity is about the selection of interviewees within the specific department, which is clarified in the revised text in Methods. We also provide numbers as requested by Reviewer 1.

Participants: The authors are suggested to use internationally established terminologies; for example, ‘purposive sampling’ instead of ‘purposeful heterogeneity sampling’; 'maximum variation sampling can be used in-stead of heterogeneity sampling.

Response: We adjusted the use of concepts accordingly.

Secondly, what strategy was used for sample size (e.g., information saturation technique...)? Also mentioned from reviewer 1. “At no point in the paper is there any mention of whether data saturation was either sought or achieved. This needs to be explained.”

Response: We understand the term saturation. In this study had to take a specific strategy relating to it and have outlined this in Methods. The number of interviewed doctors was related to the request from the department to minimize the absence of doctors from the clinic. Based on experience from the research field and from interviewing doctors in other hospital settings we agreed on a minimum number of seven interviews. This is about a third of all doctors at the department. By using a maximum variation strategy when sampling we wanted to get a rich empirical material. During the analytical process we paid extra attention if we found data that did not fit with the other data, indicating there was some empirical nuances we were missing with our small sample. This did not happen. Regardless of gender or seniority there was a high degree of commonality between the different doctor voices relating to the aim. During the analysis it became clear that the seven information rich cases enabled a comprehensive understanding. It confirms, what Malterud 1 suggests, that a limited number of information rich interviews can contribute with new meaningful knowledge. We have outlined this in Methods

Analysis: The authors are requested to clarify the following issues: language of interviewing; if interview was conducted in the local language, then was it translated into English;

This is also mentioned by reviewer 1: Presumably, the interviews were not only transcribed but also translated from Norwegian to English for inclusion in the paper. This is not mentioned and should be. One of the problems with the translation is that the same linguistic voice is experienced in the text of the paper and in the quotations, which is unusual. For example, both use ‘impact’ as a verb where I would much prefer at least some use of ‘affect’.

Response: We now describe this in Methods

How was transcribed data cross-checked; was the data coded; if yes, was it manifest coding or abstract coding? Was the data analysed using a software or by manually?

Response: We have added a detailed analytical text in Methods. No analytic software was used.

Other issues here: what does it mean “senior PhD-level researcher”? “

Response: We provide further description in Methods.

“Principles of qualitative analysis was used”- please mention the exact principle / method which was used for data analysis (for example, was it 'directed / narrative / summative qualitative content analysis'?)

Response: We present our analysis in Methods, guided by Miles and Huberman (1994).

Ethics: This section can be written more clearly and concisely; settings section also include some ethical issues which can be replaced here.

Response: We have consolidated and adjusted under Ethics .

Results

Overall issues:

□□Subheadings of the result section follow the concept model; however, not all variables are addressed.

Response: The Result section has been reworked in order to shorten the text and reduce repetition. This has also taken care of this comment.

□□There are too many quotations; many of them are not adequately understandable. The concept model-based thematic coding and a categorized presentation of findings can be better understandable. The current use of many quotations contradicts to an accepted standard of analysing qualitative data.

Response: We have reduced the number of quotes. Qualitative research has a long tradition of using quotes to enable the reader to hear the "original voices" illustrating specific aspect in the Results.

□□The theory of Simple, Complicated, and Complex categorization of findings are not found in the result section.

Response: This part is removed, to shorten the text and improve readability

□□The issue of physicians' 'time constraint' appears repeatedly which could be organized coherently and thematically.

Response: We have removed redundancies throughout the text.

□□An addition of a brief description of the healthcare system structure and the role of organizational / facility managers as background information can also improve better understanding of the findings.

Response: We agree and have added a Norwegian context in the introduction.

Other issues:

The authors are repeatedly using "interviewed physicians" throughout the report which can be replaced by 'participants'.

Response: We have changed by using participant as well

Page 11, line 20 – "physicians expressed": does it mean that all participants expressed the same opinion? The authors can provide a table here for the background information/characteristics of the participants with a code number for each participant and that code can be used at the end of each statement indicating the exact participant indirectly.

Response: This comment is not in line with the standards in qualitative research, hence, we are reluctant to presenting such numbers. Further, we do not think that this information adds anything to the interpretation of the findings. We did, however, add a code for every doctor quote.

Some words / phrases can be changed with typologically correct or contextually better meaningful ones such as: patient error, impacted me fundamentally, patient care quality etc.

Response: It has been proofread by a native English speaking firm (from Australia) so that was a surprising comment. We will inform the firm about this input. We kindly ask the Editor to advice whether the manuscript should be proofread a second time (by another firm).

Strengths and weaknesses

This section can be replaced at the end of discussion section.

Response: Done.

This study employed a qualitative study and sampled physicians (doctors) from a specific department of an emergency hospital; thus, generalizability cannot be claimed.

Response: Generalization, where a sample represents the whole population and the result of the sample is said to be statistically valid to the overall population, is the aim in quantitative research. In qualitative research transferability is considered the key contribution. We have reworked the text to provide a more clear reasoning about transferability.

To understand the opinion/ experience of managers are also quite important to make any organizational change, which is a weakness of this study.

Response: We agree and describe how this study is part of a broader study which includes managers. It is also added to the Future Research section.

It is not understandable why a 74 minutes interview (with 20 pages notes) rather than planned 60 minutes is a strength of the study.

Response: Some doctors need more time before they connected to their own deeper perspectives. By being flexible with time we could also include their richness. So this is about richness…not the number of pages, but sometimes both dimensions come in tandem. Or as Malterud1 says "information –power". We have taken it out from the strength paragraph and have it in Methods.

Discussion

Discussion needs to be enriched with in-depth analysis based on the results and correlating with the social, organizational, policy and political contexts. Currently the discussion is mostly repetitions of the results.

Response: The original discussion has been reworked in order to remove redundancies.

Several issues:

high quality care can be a vital issue of doctors' satisfaction but not necessarily the "single most important dimension";

Response: We have reworked the text to reduce volume and increase clarity. This has also taken care of this not very balanced formulation. The actual finding is well described in previous studies, and as such only shortly discussed in our study.

An issue cannot be interesting and at the same time, discouraging (page21; line 38).

Response: We have adjusted the way we expressed this. (Some modern complexity theories (Stacey 2011 2, Stacey and Mowles 20163), consider paradoxes to be part of everyday organizational life.)

"The 2017 revision of the Declaration of Geneva…" - (page 22; lines 38 – 45): reference is needed.

Response: Now included.

Page 23; lines 25 – 41: "Previous researchers have argued that physicians' professional engagement and fulfillment derives from doing tasks…"

it is not clear why physicians feel stressed because of managers' mind-set of maximizing production. Some health financing, allocation and regulatory issues including method of physicians' payment can be discussed, if it is applicable and relating to the context. What about reward and reinforcement system?

Response: We have reworked this text for additional clarity. (The research we are referencing is providing an in depth analysis for reader who like to understand more about previous research). Reward is one central dimension, but not primarily the extrinsic payment related rewards. What our study is finding is that the experience of being fulfilled from work…is being at risk for the interviewed doctors. There is a term called intrinsic rewards, which is considered more important than extrinsic rewards (once you have "enough" pay to live an ok life). Consider looking into classic motivational studies (Herzberg 19684 or 19875) and related to Intrinsic and Extrinsic rewards Deci and Ryan6 7

Page 23; line 46, 48: "A study comparing views about priority setting between physicians/nurses and managers found clear differences in how they talked about and understood prioritization"

'prioritization' of what and what is nearness practice?

Response We have reworked this text for additional clarity

Page 24; lines 20 – 36: "There is a definite need for more enlightened health care leaders…"

what does it mean "enlightened physicians"?

Response We have reworked this text and this should no longer be an issue.

What extra roles are expected from them to solve the manager-physician tension? Secondly, what type of care to the provider can solve this problem? Is it financial or any other type of incentive or participatory management system ...has to be explained clearly.

Response We have reworked this text and this should no longer be an issue.

Page 25; lines 30 -53 "While there was an awareness among the study participants of increased workplace stress, stretching oneself was considered…"

key messages are not clear enough

Response We have reworked this text and this should no longer be an issue.

About the last subheading – physicians' strategies to handle the dynamic interactions relating to fulfillment/satisfaction, organization and quality of care: this section mostly shows repetitions of the results; there is lack of clarity about the strategies given by the study participants rather most strategies are hired from other studies.

Response We have reworked this text and this should no longer be an issue.

Moreover, the concept model is an interdependent (bi-directional) model rather than a linear mediation model meaning the low quality of care also should influence managers negatively; however, the authors indicate that the managers are interested for product quantity rather than quality. This is a counter-productive finding to the model.

Response: We have reworked the text for clarity. As previously noted the concept model is simply created to help focus the interview. This has been clarified in Methods.

Page 27; lines 22 – 36: “This behavior of limited physician engagement…” it is not clear what has been argued here; the authors need to distinguish the roles of the physicians and managers in Norway. It is confused now whether the physicians become the managers.

Response We have reworked this text and this should no longer be an issue.

Page 28; lines 24 -43: “A longitudinal intervention study…”this is a good point of discussion, but the implication of the message is missing.

Response We have reworked this text and this should no longer be an issue.

Page 30; line 8:” To secure both quality care and professional fulfillment/satisfaction for physicians,” what organizational factors to be changed that have to be clearly and specifically addressed.

Response We have reworked this text and this should no longer be an issue.

Page 30; line 46: “We thus suggest that the traditional strategy by physicians of individually stretching themselves and focusing on the individual patient is no longer a viable single solution”

it is unclear why physicians compromise to stretch themselves; is it due to lack of job market, any time-bound agreement with the organization or what? In a country like Norway, why physicians cannot voice over management or how a hierarchical system of management sustains - is a question to be answered from the values of socio-political and ethical dimensions.

Response: This is a very interesting paradoxical point. To address this we need also the voices from the managers. We include that as Future research.

Also, it seems that quality of care is challenged by week managerial system. However, the social and technical skills of the physicians need to be addressed in this respect.

Response We are happy for this comment. It relate to the paradox above. How can it be that we in a modern Norwegian society actually have the situation that we are finding? From our larger interactive study, where we also interview doctors and managers working in a hospital in the US, we notice the same patterns, and this is also the observable pattern in Swedish hospitals where we also have done much work recently. So, this is too large question to address here. Shortly, we don’t find that one can place the “blame” in one corner of the system…only the managers…or only the politician…or only the doctors. What we have today is created in the interaction between all of the constituents. If we like to change what we have, it involves all of the constituents changing…themselves and also how they interact with the others. We will come back in another article addressing this, when we have analyzed the voices from managers.

This is an important weakness of the study and a rationale of investigating the views of managers to generate a concrete conclusion.

Response: We agree. We have included this as a suggestion about future research. (From our own learnings in the research process it is clear that we need to be interviewing managers to capture their perspective about this complex. As mentioned above, interviews with managers are actually going on right now.)

Page 31; line 11: what does it mean “collaborative study”; it appears first time.

Response: This is another word for “interactive research”, this is changed. .

Contributorship

The contributions / authorship can be individualistic rather than group-based.

Response: Adjusted in line with author guidelines of BMJ Open .

References

The authors have used extensive and relevant sources, however, articles of the field of occupational psychology, quality of care and providers' satisfaction can be good sources to improve the report.

Response: We also the introduction complemented with some additional references to cover this.

The authors are thanked for addressing an important issue of the healthcare system; however, a substantial improvement is needed for international readership.

Response: The research group is appreciative for the thoughtful and detailed review. This has helped us to improve the manuscript in many ways. Many thanks!

Mentioned references

1. Malterud K, Siersma VD, Guassora AD. Sample Size in Qualitative Interview Studies Guided by Information Power. Qual Health Res 2015:1049732315617444.

2. Stacey RD. Strategic management and organisational dynamics: the challenge of complexity to ways of thinking about organisations. Harlow, England: Financial Times Prentice Hall, 2011.

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5. Herzberg F. Workers' needs: the same around the world. Industry week 1987;21(9):29-30.

6. Ryan RM, Deci EL. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. Am Psychol 2000;55(1):68-78.

7. Deci EL, Ryan RM. Self-Determination Theory: A Macrotheory of Human Motivation, Development, and Health. Canadian Psychology/Psychologie canadienne 2008;49(3):182-85.

VERSION 2 – REVIEW

REVIEWER	Iona Heath Royal College of General Practitioners UK
REVIEW RETURNED	27-Jan-2019

GENERAL COMMENTS	This paper has undergone a major revision and is much improved. I note that on page 1 of both the original and the revised version, the word count is given as 5743 – this seems highly unlikely especially as the authors claim that the paper has been significantly shortened. I still find the description of the research setting in the abstract to be misleading. The setting is not a 'Mid-sized emergency hospital in Norway' but the surgical department of such a hospital'. This is important because, although I agree with the authors that many of

	the findings are generalisable to doctors working in other healthcare stings, surgeons, both established and in training, work under very particular additional pressures. I welcome the description of the Norwegian health system provided on page 4, I find the description of primary care to be profoundly misleading. In lines 37-39, by describing primary care as operating as private businesses, the authors imply that patients pay the primary care doctors the full cost of the services they receive and I know that this is not true. It would be better to describe the fastlege system as one of independent contractors to the health care system because patients only incur a nominal co-payment when receiving primary care services, and the bulk of the funding comes from the state. Some of the drafting remains grammatically awkward and will need some careful editing. To give just three of the most obvious examples: • On page 5, lines 51-52, we read 'this article focus the first set of doctor interviews in this iterative process'. • On page 15, lines 12-14, we read 'A consequence was that patient error negatively impacted the individual doctor.'. Here 'patient error' implies and mistake made by a patient but the context implies that it refers to a mistake made by a doctor that has affected a patient. This needs clarifying. • In my original review, I queried the use of 'epicrisis', now in lines 43-44 on page 15. This is clearly a translation of the Norwegian but this term is not familiar to clinicians in the UK and I am sure that a more accessible term could be found.

REVIEWER	Dr. Ashim Roy Maastricht University The Netherlands
REVIEW RETURNED	02-Feb-2019

GENERAL COMMENTS	The authors have addressed many of the previous comments and there are improvements. However, still some important areas need improvement; e.g., informal sentences, use of inappropriate words. There are unclear areas and gaps in methods, results, discussion and conclusion sections which have to be addressed for the reason of the journals' quality and international readership. 'How do hospital physicians experience the interactions between professional fulfillment, organization and quality of care? A qualitative study' There are improvements; however, still there are some issues to be addressed and improved. Abstract □ Objectives: the authors are requested to check the differing concepts in the second sentence and the very last sentence of the abstract; is it the relationship of professional fulfilment to organizational factors and quality of health care or that of organizational factors to doctors' professional fulfilment and quality of health care. It needs to be logically adapted and consistent throughout the manuscript. □ Design and Participants: there are incomplete sentences which have to be formalised and consistently adapted elsewhere in the

	manuscript. Most probably the authors mean – 'an exploratory qualitative study design' rather than 'an explorative and qualitative design'; this is also an issue in the Methods section. In participants section, the sampling method can be replaced after study population. Results: some words can be adapted/explained for better clarification, which also applicable elsewhere in the manuscript: (i) 'doctors' stretching' – does it mean burnout / stress or what, (ii) good quality patient 'work' or care, and (iii) local development work – it is a broad term as its' meaning differs based on contexts and settings; doctors' participation in 'organisational policymaking' (i.e., planning, implementation, monitoring and evaluation) can be an alternative. Conclusion: rather than implicit arguments, the concluding information can be empirically based. Since the results are based on only one stakeholder (i.e., doctor), the authors can be more neutral rather than concrete in framing their arguments; in other words, the opinions of respondents can be presented. Strength and limitations Two phrases seem redundant are – 'it is a strength having' and 'another strength is that'. The authors can clearly focus on how they grounded the voice of non-participant doctors. The last sentence is not clear enough; the authors can simply say –'transferability of this study with small sample of doctors from a hospital may not be claimed; however, being consistent with previous researches, our study findings can be useful to the healthcare delivery systems of countries with similar contexts'. Introduction This section is well-improved. Methods This section still needs improvement: There are informal sentences. Participants – for better readability, it is good to define the study participants followed by how they were selected and remarks / explanations about sample size. Data collection – the very first sentence adds nothing new. How the interview guide was constructed is still missing; please mention who were involved in and the process of developing the tool. "Each doctor also received a written and oral summary of the study before interview" – it is not understandable how study summary was supplied at such an early stage of research; it needs clarification. In the data collection and analysis section, the authors occupied a considerable width of space with their degrees and background. Describing skills, competences and experiences of Research Assistants (who are other than authors) is usual. In this case, the authors' elaborate background in the main text is not usual; the authors can simply use their respective initials in the related-texts as those appear in the title page. Ethics: in this study the reference of the Norwegian law is enough without mentioning the Helsinki Declaration. Also, it is clear that no participants other than doctors was included; thus, Patient and Public Involvement section has no added importance. Results This section is now more concised than the previous version. Some issues:

	□ Indeed, as the authors have mentioned, there is no added value of using participants' coding (e.g., Doctor A). Moreover, readers have minimum information about the participants. As mentioned before, the author can solve those problems by including a table on Participants' background' on the following points – code, degree, position, gender, year of professional experience. □ There is issue of frequent using the word – 'impact'; please check other contextually suitable words; the other esteemed reviewer correctly identified it. □ Again, the issue of 'stretching'; what actually it means. It is a central point of tension between production quantity versus quality; it needs to be clearly presented. □ One of the statements (i.e., "I have to be there until the operation is finished. I am really concerned weather I will be…kindergarten…") may not be passed without the authors' criticism (in the discussion section). Because, operation cannot strictly be time-bounded and doctors cannot leave operation before it is completed. It is a counterproductive statement from a doctor who claims stretching themselves for the reason of good quality care. This is also a reason why another research involving managers is essential. Discussion This section needs further improvement. The very first para in the previous version was better than this one. In general, there appear many references of other researches which are not adequately coherent to this study findings and can be reduced (e.g., Ref. 51; 52). Some texts appear without any link, e.g., "the strive towards meaning has been expressed… … … sense of meaningless", and the very last para – "taking doctors… … … working together". Few words can be taken into account or adapted with appropriate words: □ Health enterprise – healthcare system are better words because not the total health system of a country is privatised or market-based. □ Rates of physician (doctor) burnout – rates can be removed. □ Respondents/participants can be a better alternative to frequent use of "interviewed doctors". □ "Good patient care quality" or good quality of patient care. Strengths and weakness This section is better than before; however, the authors can simply describe the key strengths without references. The references used here can be adjusted in the method section. Conclusion As mentioned in abstract, this section needs to be based on empirical findings rather than implicit notions. The key issue of tension between product quantity (market/economic interest) and product quality (health system goal) is missing. Practice implication and future research The contents of these two sections do not match the headings. The last part of the future research section contains some points of study implications. The clause – "which is currently being done" does not mean a future research.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Iona Heath

Institution and Country: Royal College of General Practitioners, UK

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below This paper has undergone a major revision and is much improved.

I note that on page 1 of both the original and the revised version, the word count is given as 5743 – this seems highly unlikely especially as the authors claim that the paper has been significantly shortened.

Response: Thank you for catching this. The word count was not updated. The revised version was about 1500 words shorter than the original.

I still find the description of the research setting in the abstract to be misleading. The setting is not a 'Mid-sized emergency hospital in Norway' but the surgical department of such a hospital'. This is important because, although I agree with the authors that many of the findings are generalisable to doctors working in other healthcare stings, surgeons, both established and in training, work under very particular additional pressures.

Response: We appreciate this input and have adjusted the text in Settings accordingly.

I welcome the description of the Norwegian health system provided on page 4, I find the description of primary care to be profoundly misleading. In lines 37-39, by describing primary care as operating as private businesses, the authors imply that patients pay the primary care doctors the full cost of the services they receive and I know that this is not true. It would be better to describe the fastlege system as one of independent contractors to the health care system because patients only incur a nominal co-payment when receiving primary care services, and the bulk of the funding comes from the state.

Response: We agree and have adjusted the text in line with your suggestion for further clarity.

Some of the drafting remains grammatically awkward and will need some careful editing. To give just three of the most obvious examples:

- On page 5, lines 51-52, we read 'this article focus the first set of doctor interviews in this iterative process'.

Response: We agree and have edited this paragraph carefully for ease of reading and clarity.

- On page 15, lines 12-14, we read 'A consequence was that patient error negatively impacted the individual doctor.'. Here 'patient error' implies and mistake made by a patient but the context implies that it refers to a mistake made by a doctor that has affected a patient. This needs clarifying.

Response: We agree and have edited this sentence for additional clarity. We have also looked into finding synonyms to "impacted" to better express the sentiments in the quote. We have amended "impact" throughout, using other contextually suitable words like; influence, affect and imping on.

- In my original review, I queried the use of 'epicrisis', now in lines 43-44 on page 15. This is clearly a translation of the Norwegian but this term is not familiar to clinicians in the UK and I am sure that a more accessible term could be found.

Response: Apologize for not addressing this in the first response. We were puzzled with this input, relating to one of the original quotes. Epicrisis is an everyday medical term, “taken for granted” in the Nordic countries. We have now also sampled American and Canadian doctor-friends and have slowly realized that this term does not seem to exist in the Anglosaxian medical tradition (Nordic countries have a Germanistic medical tradition). We have adjusted the quote and now use the more descriptive term “discharge summary”.

A side note…according to the Oxford dictionaries epicrisis has Hellenistic Greek background. The meaning in Medicine is defined as: “A critical review, summary, or discussion of a case, condition, or body of research.” https://en.oxforddictionaries.com/definition/epicrisis

According to Merriam Webster’s dictionary epicrisis is a medical term relating to “A critical or analytical study, evaluation, or summing up, especially of a medical case history”. https://www.merriam-webster.com/medical/epicrisis

Reviewer: 2

Reviewer Name: Dr. Ashim Roy

Institution and Country: Maastricht University, The Netherlands

Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below The authors have addressed many of the previous comments and there are improvements. However, still some important areas need improvement; e.g., informal sentences, use of inappropriate words. There are unclear areas and gaps in methods, results, discussion and conclusion sections which have to be addressed for the reason of the journals' quality and international readership.

Abstract

 Objectives: the authors are requested to check the differing concepts in the second

sentence and the very last sentence of the abstract; is it the relationship of professional

fulfilment to organizational factors and quality of health care or that of organizational

factors to doctors’ professional fulfilment and quality of health care. It needs to be

logically adapted and consistent throughout the manuscript.

Response: We appreciate this input and have adjusted the text for consistency. The very last sentence is revised also as a consequence of clarifying the conclusions. One key reason to choose an exploratory interview study was to take seriously “the dynamic interaction among” the three concepts, professional fulfillment, organizational factors and quality of patient care. We have made this more explicit in the third paragraph in the introduction.

 Design and Participants: there are incomplete sentences which have to be formalised

and consistently adapted elsewhere in the manuscript. Most probably the authors mean

– ‘an exploratory qualitative study design’ rather than ‘an explorative and qualitative

design’; this is also an issue in the Methods section. In participants section, the sampling

method can be replaced after study population.

Response: We appreciate this and have revised for complete sentences, corrected Methods and revised Participants section for increased readability, in line with your suggestions.

 Results: some words can be adapted/explained for better clarification, which also

applicable elsewhere in the manuscript:

(i) ‘doctors’ stretching’ – does it mean burnout / stress or what,

Response: We appreciate this input. This is a descriptive term arising from the empirical analysis. It includes handling the tension between quantity and quality, but also handling sudden resource shortages (due to illness you now also need to handle the ward in between operations), and balance the potential tension between work and home. We have added additional clarifications in the text.

(ii) good quality patient ‘work’ or care

Response: We appreciate this input. We have looked into the text and adjusted towards “care” when appropriate

, (iii) local development work – it is a broad term as its’ meaning differs based on contexts and settings; doctors’participation in ‘organisational policymaking’ (i.e., planning, implementation, monitoring and evaluation) can be an alternative.

Response: We appreciate this suggestion and now call it the development of organizational policies, processes and systems.

 Conclusion: rather than implicit arguments, the concluding information can be

empirically based. Since the results are based on only one stakeholder (i.e., doctor), the

authors can be more neutral rather than concrete in framing their arguments; in other

words, the opinions of respondents can be presented.

Response: We appreciate this input and have adjusted towards more empirically based arguments.

Strength and limitations

 Two phrases seem redundant are – ‘it is a strength having’ and ‘another strength is that’.

The authors can clearly focus on how they grounded the voice of non-participant

doctors.

Response: We appreciate this suggestion and have revised the text accordingly.

 The last sentence is not clear enough; the authors can simply say –‘transferability of this study with small sample of doctors from a hospital may not be claimed; however, being consistent with previous researches, our study findings can be useful to the healthcare delivery systems of countries with similar contexts’.

Response: We appreciate this suggestion and have adjusted the last sentence, based upon the suggestion from the reviewer.

Introduction

This section is well-improved.

Response: We appreciate this input and acknowledge the contribution from the previous review.

Methods

This section still needs improvement:

 There are informal sentences.

Response: We appreciate this input and have adjusted some of the sentences to address this.

 Participants – for better readability, it is good to define the study participants followed by how they were selected and remarks / explanations about sample size.

Response: We appreciate this suggestion and have adjusted accordingly to increase readability.

 Data collection – the very first sentence adds nothing new. How the interview guide was constructed is still missing; please mention who were involved in and the process of developing the tool. “Each doctor also received a written and oral summary of the study before interview” – it is not understandable how study summary was supplied at such an early stage of research; it needs clarification.

Response: We appreciate the input and suggestion. We have taken out the first sentence and added how the interview guide was developed. We have also adjusted the text to clarify what information was provided to the doctors before the interview.

 In the data collection and analysis section, the authors occupied a considerable width of space with their degrees and background. Describing skills, competences and experiences of Research Assistants (who are other than authors) is usual. In this case, the authors’ elaborate background in the main text is not usual; the authors can simply use their respective initials in the related-texts as those appear in the title page.

Response: We appreciate this input and notice we seem to come from different backgrounds relating to what is “usual or not” in qualitative studies. In order to reduce text we have adjusted in line with the suggestion (using initials instead of descriptive text).

As a clarifying comment: We consider, (in line with for example Patton 2002 and Malterud 2001, 2014) that reflexivity, or being aware of own voice and perspective is a central theme in qualitative inquiry. Individual background, professional and educational experiences all contribute to create an individual way of seeing the world and the way we ourselves understand the world is strongly influencing what we observe, hear and respond to during fieldwork. Within qualitative inquiry self-awareness is considered important, when interviewing, but also during analysis and the writing process. We thus consider some knowledge about the authors’, valuable information for the reader.

 Ethics: in this study the reference of the Norwegian law is enough without mentioning

the Helsinki Declaration. Also, it is clear that no participants other than doctors was

included; thus, Patient and Public Involvement section has no added importance.

Response: We appreciate this input, however the journal Editor has asked us to keep the text. We have adjusted the text under Patient and Public Involvement in line with the Editorial suggestion and it now read “Patients and the public were not involved in the design or planning of the study.”

Results

This section is now more concised than the previous version. Some issues:

 Indeed, as the authors have mentioned, there is no added value of using participants’

coding (e.g., Doctor A).

Response: We agree that one could question the importance of codes. However we added the codes in order to meet the suggestion by another reviewer who found value in them. By including a unique doctor-code per quote the reader is provided with “indicative evidence” that there are many participant voices being represented. It is also a way to make explicit that a few well-spoken participants are not overpowering the voices from the other participant.

Moreover, readers have minimum information about the participants. As mentioned before, the author can solve those problems by including a table on Participants’ background’ on the following points – code, degree, position, gender, year of professional experience.

Response: We appreciate this input and agree that the reader has limited information about the individual doctors. That is a construction in order to not enable people working in clinical proximity to identity different individuals. While we would like to follow the suggestion from the reviewer, we find that the benefit for a reader to have this added information, does not warrant the additional exposure for the participants.

 There is issue of frequent using the word – ‘impact’; please check other contextually

suitable words; the other esteemed reviewer correctly identified it.

Response: We appreciate this suggestion and have amended the text using other contextually suitable words like; influence, affect and imping on.

 Again, the issue of ‘stretching’; what actually it means. It is a central point of tension

between production quantity versus quality; it needs to be clearly presented.

Response: We appreciate this input. This is a descriptive term arising from the empirical analysis. It includes handling the tension between quantity and quality, but also handling sudden resource shortages (due to illness you now also need to handle the ward in between operations), and balance the potential tension between work and home. We have added additional clarifications in the text.

 One of the statements (i.e., “I have to be there until the operation is finished. I am really

concerned weather I will be…kindergarten…”) may not be passed without the authors’

criticism (in the discussion section). Because, operation cannot strictly be time-bounded

and doctors cannot leave operation before it is completed. It is a counterproductive

statement from a doctor who claims stretching themselves for the reason of good quality

care. This is also a reason why another research involving managers is essential.

Response: We appreciate the input. We have adjusted the text to further reflect this tension between doctor expectations and expectations from society and the organization. We also have been explicit to point out that exploring the managerial perspective is a future research need.

Discussion

This section needs further improvement. The very first para in the previous version was better

than this one.

Response: We appreciate this input and have re-introduce the first paragraph. We also have looked into the overall text for further improvements.

In general, there appear many references of other researches which are not

adequately coherent to this study findings and can be reduced (e.g., Ref. 51; 52).

Response: We appreciate this input and have looked into the text for increased coherence with study findings and reduction of references.

Some texts appear without any link, e.g., “the strive towards meaning has been expressed… … … sense of meaningless”, and the very last para – “taking doctors… … … working together”.

Response: We appreciate this input and have created additional linkages for increased readability.

Few words can be taken into account or adapted with appropriate words:

 Health enterprise – healthcare system are better words because not the total health

system of a country is privatised or market-based.

Response: We appreciate this suggestion and have looked into the word and changed accordingly.

 Rates of physician (doctor) burnout – rates can be removed.

Response: We appreciate this suggestion and have changed accordingly.

 Respondents/participants can be a better alternative to frequent use of “interviewed

doctors”.

Response: We appreciate this suggestion and have amended so we alternate between the terms.

 “Good patient care quality” or good quality of patient care.

Response: We appreciate this suggestion and have adapted towards good quality of patient care.

Strengths and weakness

This section is better than before; however, the authors can simply describe the key strengths

without references. The references used here can be adjusted in the method section.

Response: We appreciate this input and have looked into the text to further improve it. We agree that the earlier segment “Strength and limitations” works well without references. Here under “Strengths

and Weaknesses” we consider it valuable to provide the reader with references and also to include weaknesses, in line with the Author instructions from BMJ Open.

Conclusion

As mentioned in abstract, this section needs to be based on empirical findings rather than

implicit notions. The key issue of tension between product quantity (market/economic interest) and product quality (health system goal) is missing.

Response: We appreciate this suggestion and have rephrased the text. It now is more based on empirical findings, in line with the suggestion. Previous text about the “tension” is reworked to make this central issue more explicit in the conclusions.

Practice implication and future research

The contents of these two sections do not match the headings. The last part of the future

research section contains some points of study implications. The clause – “which is currently

being done” does not mean a future research.

Response: We appreciate this input. The content has been reduced and restructured to better match the headings.

VERSION 3 - REVIEW

REVIEWER	Dr. Ashim Roy (PhD, MBBS, MPH, MSc) Maastricht University; the Netherlands
REVIEW RETURNED	02-Apr-2019

GENERAL COMMENTS	The authors have addressed all comments and made substantial improvements in all sections of the manuscript. A minor issue: the keyword "patient-quality" remains unaddressed; it can meaningfully be changed to 'healthcare quality'. Also, a careful final editing can improve some minor language issues. The authors are thanked for such huge works.

VERSION 3 – AUTHOR RESPONSE

- We have adjusted on page 6, lines 44-47, and corrected the sentence by inclusion on the word “on”

- We have revised the keyword "patient-quality" and instead written “quality of patient care”. We appreciate the suggestion from the reviewer (“healthcare quality”) but have decided in favor of this patient related term, to emphasize that in the end, it is always a physical person receiving care.

- We have done a careful final editing to improve some minor language issues.