

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Use of a primary care online consultation system, by whom, when and why: evaluation of a pilot observational study in 36 general practices in South West England
AUTHORS	Edwards, Hannah; Marques, Elsa; Hollingworth, William; Horwood, Jeremy; Farr, Michelle; Bernard, Elly; Salisbury, Chris; Northstone, Kate

VERSION 1 - REVIEW

REVIEWER	A/Prof. Lisa Hanna Deakin University, Australia
REVIEW RETURNED	07-Apr-2017

GENERAL COMMENTS	<p>p.4, lines 25- and p.9. lines 22-25- : might be useful in introduction and/or discussion to consider previous mixed-methods research in UK on health professionals' and practice managers' perspectives on ICT-mediated consultations- Hanna, L, May, C and Fairhurst, K 2012, The place of information and communication technology-mediated consultations in primary care : GPs' perspectives, Family practice, vol. 29, no. 3, pp. 361-366, doi: 10.1093/fampra/cmz087; Hanna, L, May, C and Fairhurst, K 2011, Non-face to face consultations and communications in primary care : the role and perspective of general practice managers in Scotland, Informatics in primary care, vol. 19, no. 1, pp. 17-24. And in Australia: Hanna, L and Fairhurst, K 2013, Using information and communication technologies to consult with patients in Victorian primary care : the views of general practitioners, Australian journal of primary health, vol. 19, no. 2, pp. 166-170.</p> <p>p.4, lines 52- , and discussion: to what extent did participating practices actively promote e-consultations to their patient lists? The low rates of use can only be considered alongside patient awareness of e-consultations as an option. Would like to see more information and reflection on this.</p> <p>p.5, lines 7 - : Would like to see more information on process of patient consent to abstract histories from records and link between website analytics and electronic health records. Who extracted this information from practice records?</p> <p>p.5, lines 22-23: Were the 8 practices from which patient records were drawn selected randomly, or just the patients undertaking an e-consultation within these 8 practices? Why were 8 practices selected, and why were 485 patients included, and how many were from each of the 8 practices? How representative of all practices in</p>
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	<p>the area were the 8 practices selected?</p> <p>Typographical errors: p.4, line 7: suggest comma after 'declining workforce'</p> <p>p.5, line 28: missing 'consultation' at end of sentence</p> <p>p.6, line 6: missing full stop.</p>
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REVIEWER	<p>Catherine B Matheson-Monnet Senior Research Fellow Centre for Implementation Science Faculty of Health Sciences University of Southampton England</p>
REVIEW RETURNED	14-Apr-2017

GENERAL COMMENTS	<p>This paper is an evaluation of a pilot study of an online consultation system in primary care which describes the number of e-consults, when they were submitted, the reason for the e-consults and the NHS costs associated with its use in 36 GP practices (covering 396,828 patients).</p> <p>Abstract In the abstract, the authors underline that the study is about 36 GP practices re website usage (unique visits, number of e-consults [n=7,472] and time and day of the week they were logged). Information about gender, age and reason for e-consults is given immediately after as if this information was in relation to the whole sample when in fact as indicated in table 3 these figures only pertain to the sub-sample of 482 or 485 e-consults (from 8 GP practices). However, anyone reading the abstract is led to believe that such figures refer to the overall sample of 7,472 e-consults.</p> <p>Background Setting the study in the context of previous studies at the beginning needs to be re-worked to be more informative and meaningful and help the reader follow what they are saying. Apart from a short policy background and noting that evidence about use and effectiveness of online consultations is limited, we learn nothing about previous studies about online consultations, yet the authors refer to some 20 or so studies about online/email consultations. A brief outline of what is known from these studies needs to be provided.</p> <p>The abstract states that the study is about who used the system, when, why, and the NHS costs associated with its use. The background indicates that a mixed-methods observational evaluation of a trial of an online consultation system was performed, including quantitative, qualitative, and health economic analyses and that the authors report only on the quantitative and health economic findings.</p> <p>The aims and objectives and outcome measures need to be described in the introductory section. They need to be more clearly articulated and should be in relation to e-consults which are the focus of the study. The word 'system' is misleading, unnecessary and introduces confusion and ambiguity when presenting and</p>
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discussing results. The study is about e-consults rather than activity associated with the e-consults website. They authors can provide a summary of information about the e-consults website use (landings, unique visitors, NHS 111 signposting, pharmacy locator, self-help, total number of e-consults logged and time and day of the week in which they were logged) at the beginning of the results section. This way, it would be clear that all other findings are related to the 8 GP practices and 485 e-consults.

Methods - data and data sources

The authors need to make clear how the data was collected re purpose, gender, age, time of day and week that e-consults were submitted and outcome of e-consults (see table 3). The authors need to specify who filled in the free-text field in the e-consultation into 11 broad categories and sub-categories [GPs, administrative assistants, medical assistants or members of the research team?] and when it was entered [at the time of processing the e-consult or retrospectively?] and how it was entered [Excel data base created for the purpose of the study or directly into patient records?]

How was the average duration of face to face and telephone appointments in response to e-consultations and within the next 30 days established? Did someone (administrative or medical assistant or researcher) observe and take notes of times? If so, specific details are required? Were GPs/nurses asked to make a note of the actual time they took? Were GPs and nurses asked to estimate the average time and/or the longest and shortest time taken by way of a survey? If so, how many responded?

References to patient level data and subset of electronic patient records need to be explained as does the triage time of five minutes per e-consultation which we are told was assumed based on responses in the companion qualitative study. However, no information is provided about the assumptions that led a decision to determine that the triage time was five minutes per e-consultation. No information is provided about what triage of e-consults involves by way of steps that need to be taken and who is involved in this triage.

Methods - Data analysis

To examine the generalisability and potential selection bias in results, the authors compared practices participating in the pilot to those in the rest of England. Yet they only compared the sample of 36 GP practices (7,472 e-consults but unknown outcomes) for which the software developer provided website activity data, but not the sample of 8 GP practices (485 e-consults and known outcomes), yet the latter is the main focus of the study.

The section on data analysis should make clear that odds ratios (ORs) with 95% confidence intervals (CIs) pertain only to the sample of 8 GP practices and 485 e-consults. The means, standard deviation and p value about demographic characteristics of users, reasons for consulting, actions taken in response to e-consultations, response times, and durations of subsequent consultations pertain only to the sub-sample of 8 GP practices (485 or 482 e-consults).

The sample of 8 GP practices and 485 or 482 e-consults should be described and compared with the overall sample, and with the average GP practice in England since 25 variables for the latter have already been established. The 36 GP practices had an

average of 207.5 e-consults. The 8 GP practices had an average of 60.5 e-consults each, but the other 28 GP practices counted an average of 249.5 e-consults, more than four times the number. This is neither considered nor discussed. The authors should indicate how the 485 e-consults were distributed between the 8 GP practices.

In the methods section the authors need to clearly indicate how the objectives chosen to achieve the aims/research questions were investigated. The methods section would benefit from having headings such as study scope and design, data collection, sample/participants, data analysis.

How consent to access data from patient electronic records was obtained needs to be described. How consent to observe what went on in the 8 GP practices when e-consults were processed, if such observation took place, [it is unclear how the length of telephone consultations or face to face GP consultations was established] also needs to be described.

Results

In addition to the abstract, it is often difficult to unravel whether the authors are describing data re the overall sample of 7,472 e-consults or the randomly selected sample of 485 or 482 e-consults. The reader should not have to constantly go fishing for clues to make sense of what exactly the authors are referring to. This is compounded by an abstract that give the impression that the findings are about 36 GP practices and by the authors' claim that this is the largest UK study to date examining use of a primary care online consultation system.

The paragraph about extent of use of e-consultations mentions website analytics and refers to all 36 GP practices. This paragraph is immediately followed by a paragraph about times of use which refers in the text to both website analytics and patient level data, yet only quotes data from website analytics as none of the data in table 3 about the 485 e-consults are quoted, hence it is assumed by the reader, after having checked the required tables, that the data must therefore pertain to the overall sample of 36 GP practices and 7,472 e-consults. However, this paragraph is immediately followed by a paragraph about users' characteristics which appears at first glance to discuss the whole sample of 7,472 e-consults, but according table 3 only refers to the 485 e-consults in 8 GP practices.

The focus of the study is the sub-sample of 485 e-consults rather than the larger sample of 7,472 e-consults although the reader is led to believe that the larger sample is the main focus. In fact only activity data from the website and number of e-consults and time and day of the week in which they were logged is provided for the larger sample. Hence, despite the claim by the authors that theirs is the largest UK study of an online consultation system, the study is smaller than that of Madan (2014) who provided data about number of e-consults, purpose, gender and age as well as actions taken in response to e-consults for 20 GP practices, totalling 133,000 patients aged 18 and over and 1,600 e-consults over 6 months vs similar information for only 8 GP practices, an unknown number of patients aged 18 and over and 485 or 482 e-consults over 14 months.

Cost of e-consultations

The authors refer to the most recent data on consultation rates in

England indicates that on average there were 5.16 standard consultations per patient per annum. However, Hobbs et al (2016) did not differentiate between nurses and GP consultations, so their figure include both nurses and GP consultations, which needs to be made clear.

Discussion

The content of the first paragraph under principal findings provide summary information about time and day of the week e-consults were undertaken. It could therefore refer to either or both to the 36 GP practices and 7,472 e-consults and the 8 GP practices or 485 e-consults. However, the more important findings discussed in the next two paragraphs pertain only to the 485 e-consults and 8 GP practice, but this is not acknowledged.

The authors indicate that in about two-thirds of cases, in addition to a primary action, a secondary (less resource-intensive) action was also taken consequent to an e-consult, most commonly issuing a prescription or providing advice. Yet in table 3 both primary and secondary response actions include data about prescription, fit note and advice as well as test/treatment, f2f and telephone consultations. The difference between a primary and secondary action needs to be explained and justified.

Although, according to the authors, e-consultations could be more useful for those with pre-existing conditions (had consulted in previous 6 months), they were far less likely to undertake an e-consultations in the first place and less likely to need both a face to face GP consultation and a further face to face GP consultation within 30 days. The authors need to elaborate on their discussion of the implications for practice of these findings.

Comparing the findings with previous studies

The authors need to be careful when comparing the findings with previous studies. Studies of outcomes of online consultations (e.g. Adamson and Bachman, 2010; Madan, 2014) may not be directly comparable with studies of frequency of email communications between patients and medical practitioners (i.e. Newhouse et al, 2015). Sexual and mental health issues as two of the most common reasons for e-consultations may not be directly comparable with studies that found that patients and clinicians felt that online/email communication was less appropriate for sexual and mental health issues than for other issues.

General comments

This is an important topic. However, the paper needs major revisions. The authors need to be clearly define aims and objectives, improve their literature review, explain their methodology and the steps they took in carrying out the study, present their findings less ambiguously and make warrantable claims based on clearly presented findings. Comparison with other studies needs to be revised. The authors also need to revise the strengths and limitations of the study and acknowledge the shortcomings of the study, including shortcomings in data collection if applicable.

The study needs serious proof reading for grammar and punctuation. Some examples of poor grammar and punctuation are: p 5 lines 25-26 mixing singular and plurals; many missing commas i.e. line 28; p5 lines 3-4 should be 'which commits' and not 'who commits'; p5 line 28 stops dead; p5 line 54 extraneous comma (after

	<p>30 days); p6 lines 34-37 very awkwardly phrased.</p> <p>As this is an international journal with an international audience, the authors need to explain what the meaning of 'NHS 111' and 'fit note'.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Many thanks for the opportunity to review an important, interesting and well-written paper. I am happy to recommend for publication with some very minor observations/ queries:

Thank you – we attend to your comments as follows:

p.4, lines 25- and p.9. lines 22-25- : might be useful in introduction and/or discussion to consider previous mixed-methods research in UK on health professionals' and practice managers' perspectives on ICT-mediated consultations- Hanna, L, May, C and Fairhurst, K 2012, The place of information and communication technology-mediated consultations in primary care : GPs' perspectives, Family practice, vol. 29, no. 3, pp. 361-366, doi: 10.1093/fampra/cmr087; Hanna, L, May, C and Fairhurst, K 2011, Non-face to face consultations and communications in primary care : the role and perspective of general practice managers in Scotland, Informatics in primary care, vol. 19, no. 1, pp. 17-24. And in Australia: Hanna, L and Fairhurst, K 2013, Using information and communication technologies to consult with patients in Victorian primary care : the views of general practitioners, Australian journal of primary health, vol. 19, no. 2, pp. 166-170.

We thank the reviewer for this suggestion. This paper is focussed on the quantitative aspect of our mixed methods study. Two qualitative papers are currently being written from this study which consider the views of practice staff and we will ensure these references are included there.

p.4, lines 52- , and discussion: to what extent did participating practices actively promote e-consultations to their patient lists? The low rates of use can only be considered alongside patient awareness of e-consultations as an option. Would like to see more information and reflection on this.

This is a good question and the simple answer is, to a somewhat mixed extent. Again, this is discussed in much more detail in our accompanying qualitative papers. However, we have added some discussion to this.

p.5, lines 7 - : Would like to see more information on process of patient consent to abstract histories from records and link between website analytics and electronic health records. Who extracted this information from practice records?

A member of staff at one of the participating practices abstracted the anonymised data from electronic patient records. We have added this information on page 5. It should be noted that no links were made with any other data and therefore explicit patient consent was not required.

p.5, lines 22-23: Were the 8 practices from which patient records were drawn selected randomly, or just the patients undertaking an e-consultation within these 8 practices? Why were 8 practices

selected, and why were 485 patients included, and how many were from each of the 8 practices?
How representative of all practices in the area were the 8 practices selected?

Thank you for highlighting this. A purposeful sample of practices was drawn in relation to location (rural/suburban/urban), area deprivation using the English Index of Multiple Deprivation (IMD) and level of e-consultation use. Data was abstracted for around 60 patients per practice. We have provided brief details in the paper as we realise it is important for our readers to have this information (see page 5).

Typographical errors:

p.4, line 7: suggest comma after 'declining workforce'

Added as suggested.

p.5, line 28: missing 'consultation' at end of sentence

Thankyou for spotting this – now added.

p.6, line 6: missing full stop.

Added as suggested.

Reviewer: 2

Abstract

In the abstract, the authors underline that the study is about 36 GP practices re website usage (unique visits, number of e-consults [n=7,472] and time and day of the week they were logged). Information about gender, age and reason for e-consults is given immediately after as if this information was in relation to the whole sample when in fact as indicated in table 3 these figures only pertain to the sub-sample of 482 or 485 e-consults (from 8 GP practices). However, anyone reading the abstract is led to believe that such figures refer to the overall sample of 7,472 e-consults.

Thank you for highlighting this. We have now added brief detail to explain where this information came from. We have also had to remove some text to meet the word limit.

Background

Setting the study in the context of previous studies at the beginning needs to be re-worked to be more informative and meaningful and help the reader follow what they are saying.

Apart from a short policy background and noting that evidence about use and effectiveness of online consultations is limited, we learn nothing about previous studies about online consultations, yet the authors refer to some 20 or so studies about online/email consultations. A brief outline of what is known from these studies needs to be provided.

The majority of other studies have been carried out in other countries where of course the health system is rather different. We take the reviewer's point and have added this and provided some brief detail to meet the word limit.

The abstract states that the study is about who used the system, when, why, and the NHS costs associated with its use. The background indicates that a mixed-methods observational

evaluation of a trial of an online consultation system was performed, including quantitative, qualitative, and health economic analyses and that the authors report only on the quantitative and health economic findings.

The qualitative results are being reported elsewhere

The aims and objectives and outcome measures need to be described in the introductory section. They need to be more clearly articulated and should be in relation to e-consults which are the focus of the study. The word 'system' is misleading, unnecessary and introduces confusion and ambiguity when presenting and discussing results. The study is about e-consults rather than activity associated with the e-consults website. The authors can provide a summary of information about the e-consults website use (landings, unique visitors, NHS 111 signposting, pharmacy locator, self-help, total number of e-consults logged and time and day of the week in which they were logged) at the beginning of the results section. This way, it would be clear that all other findings are related to the 8 GP practices and 485 e-consults.

We have had many discussions internally about how best to describe 'the system' and how the e-consultations themselves fit into that. In order to keep in line with the accompanying qualitative studies we wish to keep reference to the system since it is the system itself that has been piloted, with e-consultations being a part of that. However, we have provided further information in the background section that will help to clarify this for the reader.

Methods - data and data sources

The authors need to make clear how the data was collected re purpose, gender, age, time of day and week that e-consults were submitted and outcome of e-consults (see table 3).

This has been clarified under the data sources section for purpose, gender, age and outcome.

The authors need to specify who filled in the free-text field in the e-consultation into 11 broad categories and sub-categories [GPs, administrative assistants, medical assistants or members of the research team?] and when it was entered [at the time of processing the e-consult or retrospectively?] and how it was entered [Excel data base created for the purpose of the study or directly into patient records?]

A member of the research team did this at the time the data was analysed. We have added additional detail to clarify this.

How was the average duration of face to face and telephone appointments in response to e-consultations and within the next 30 days established? Did someone (administrative or medical assistant or researcher) observe and take notes of times? If so, specific details are required? Were GPs/nurses asked to make a note of the actual time they took? Were GPs and nurses asked to estimate the average time and/or the longest and shortest time taken by way of a survey? If so, how many responded?

This was abstracted from the electronic patient record by the practice member of staff as already described on page 6 – we have made changes to the text to clarify this.

References to patient level data and subset of electronic patient records need to be explained as does the triage time of five minutes per e-consultation which we are told was

assumed based on responses in the companion qualitative study. However, no information is provided about the assumptions that led a decision to determine that the triage time was five minutes per e-consultation. No information is provided about what triage of e-consults involves by way of steps that need to be taken and who is involved in this triage.

The triage time was obtained from the qualitative study where researchers interviewed practice staff and asked them to explain the process of handling consultations within their practice. These papers are not yet published so we cannot provide reference, but have clarified in the text.

Methods - Data analysis

To examine the generalisability and potential selection bias in results, the authors compared practices participating in the pilot to those in the rest of England. Yet they only compared the sample of 36 GP practices (7,472 e-consults but unknown outcomes) for which the software developer provided website activity data, but not the sample of 8 GP practices (485 e-consults and known outcomes), yet the latter is the main focus of the study.

The results are very similar and we are restricted by the number of tables we can present in the paper. We chose to go with the larger sample size from which the eight practices were drawn. We feel the descriptive data from the 36 practices is just as important as the more detailed patient data.

The section on data analysis should make clear that odds ratios (ORs) with 95% confidence intervals (CIs) pertain only to the sample of 8 GP practices and 485 e-consults. The means, standard deviation and p value about demographic characteristics of users, reasons for consulting, actions taken in response to e-consultations, response times, and durations of subsequent consultations pertain only to the sub-sample of 8 GP practices (485 or 482 e-consults).

Thank you for pointing this out. We have now changed the data analysis section to make clear the two separate sources of data and the analyses undertaken with each.

The sample of 8 GP practices and 485 or 482 e-consults should be described and compared with the overall sample, and with the average GP practice in England since 25 variables for the latter have already been established. The 36 GP practices had an average of 207.5 e-consults. The 8 GP practices had an average of 60.5 e-consults each, but the other 28 GP practices counted an average of 249.5 e-consults, more than four times the number. This is neither considered nor discussed. The authors should indicate how the 485 e-consults were distributed between the 8 GP practices.

We did not have the resource to abstract the data for all the e-consultations completed in each of the 8 practices which is why we chose a random sample as stated under the data sources section. The 485 consultations were equally distributed across the eight practices – we have added this information to the data sources section.

In the methods section the authors need to clearly indicate how the objectives chosen to achieve the aims/research questions were investigated. The methods section would benefit from having headings such as study scope and design, data collection, sample/participants, data analysis.

We feel our headings are appropriate and given the changes we have made to this section believe that the section is now much clearer.

How consent to access data from patient electronic records was obtained needs to be described. How consent to observe what went on in the 8 GP practices when e-consults were processed, if such observation took place, [it is unclear how the length of telephone consultations or face to face GP consultations was established] also needs to be described. Individual patient consent was not required to abstract anonymised data from patient records (however, we have HRA approval to do so within the school). Consultation time was recorded from patient records. Qualitative observations did take place within the practices and are reported separately.

Results

In addition to the abstract, it is often difficult to unravel whether the authors are describing data re the overall sample of 7,472 e-consults or the randomly selected sample of 485 or 482 e-consults. The reader should not have to constantly go fishing for clues to make sense of what exactly the authors are referring to. This is compounded by an abstract that give the impression that the findings are about 36 GP practices and by the authors' claim that this is the largest UK study to date examining use of a primary care online consultation system. Given the changes made this should now be clearer.

The paragraph about extent of use of e-consultations mentions website analytics and refers to all 36 GP practices. This paragraph is immediately followed by a paragraph about times of use which refers in the text to both website analytics and patient level data, yet only quotes data from website analytics as none of the data in table 3 about the 485 e-consults are quoted, hence it is assumed by the reader, after having checked the required tables, that the data must therefore pertain to the overall sample of 36 GP practices and 7,472 e-consults. However, this paragraph is immediately followed by a paragraph about users' characteristics which appears at first glance to discuss the whole sample of 7,472 e-consults, but according to table 3 only refers to the 485 e-consults in 8 GP practices.

We apologise for the confusion here. The reviewer is correct, we only use data from the 36 practices to describe times of use. We have added additional info to each subheading to clarify the sources of data and added additional info in the text where appropriate and to the headings of tables/figures or as footnotes.

The focus of the study is the sub-sample of 485 e-consults rather than the larger sample of 7,472 e-consults although the reader is led to believe that the larger sample is the main focus. In fact only activity data from the website and number of e-consults and time and day of the week in which they were logged is provided for the larger sample.

We believe this data is of equal importance in describing how the system is used.

Hence, despite the claim by the authors that theirs is the largest UK study of an online consultation system, the study is smaller than that of Madan (2014) who provided data about number of e-consults, purpose, gender and age as well as actions taken in response to e-consults for 20 GP practices, totalling 133,000 patients aged 18 and over and 1,600 e-consults over 6 months vs similar information for only 8 GP practices, an unknown number of patients aged 18 and over and 485 or 482 e-consults over 14 months.

The study of Madan et al is not independent (being carried out and published by the software developers), nor has it been peer reviewed. We therefore amended the statement to note that we are the largest independent study to date – text amended to add ‘independent’.

Cost of e-consultations

The authors refer to the most recent data on consultation rates in England indicates that on average there were 5.16 standard consultations per patient per annum. However, Hobbs et al (2016) did not differentiate between nurses and GP consultations, so their figure include both nurses and GP consultations, which needs to be made clear.

Thank you for pointing this out. We have added a sentence to the discussion pointing this out.

Discussion

The content of the first paragraph under principal findings provide summary information about time and day of the week e-consults were undertaken. It could therefore refer to either or both to the 36 GP practices and 7,472 e-consults and the 8 GP practices or 485 e-consults. However, the more important findings discussed in the next two paragraphs pertain only to the 485 e-consults and 8 GP practice, but this is not acknowledged.

We have added text to clarify this.

The authors indicate that in about two-thirds of cases, in addition to a primary action, a secondary (less resource-intensive) action was also taken consequent to an e-consult, most commonly issuing a prescription or providing advice. Yet in table 3 both primary and secondary response actions include data about prescription, fit note and advice as well as test/treatment, f2f and telephone consultations. The difference between a primary and secondary action needs to be explained and justified.

Apologies that this is not clear. We have now clarified in the methods.

Although, according to the authors, e-consultations could be more useful for those with pre-existing conditions (had consulted in previous 6 months), they were far less likely to undertake an e-consultations in the first place and less likely to need both a face to face GP consultation and a further face to face GP consultation within 30 days. The authors need to elaborate on their discussion of the implications for practice of these findings.

We don't have the data to be able to prove that those with pre-existing conditions were less likely to e-consult compared to those with a new condition and without further evidence we prefer not to speculate on this point.

Comparing the findings with previous studies

The authors need to be careful when comparing the findings with previous studies. Studies of outcomes of online consultations (e.g. Adamson and Bachman, 2010; Madan, 2014) may not be directly comparable with studies of frequency of email communications between patients and medical practitioners (i.e. Newhouse et al, 2015). Sexual and mental health issues as two of the most common reasons for e-consultations may not be directly comparable with studies that found that patients and clinicians felt that online/email communication was less appropriate for sexual and mental health issues than for other issues.

We have expanded this section building on the caveats we had already stated.

General comments

This is an important topic. However, the paper needs major revisions. The authors need to be clearly define aims and objectives, improve their literature review, explain their methodology and the steps they took in carrying out the study, present their findings less ambiguously and make warrantable claims based on clearly presented findings. Comparison with other studies needs to be revised. The authors also need to revise the strengths and limitations of the study and acknowledge the shortcomings of the study, including shortcomings in data collection if applicable.

Thank you for your supportive comments. We believe our revised manuscript is much improved.

The study needs serious proof reading for grammar and punctuation. Some examples of poor grammar and punctuation are: p 5 lines 25-26 mixing singular and plurals; many missing commas i.e. line 28: p5 lines 3-4 should be 'which commits' and not 'who commits'; p5 line 28 stops dead; p5 line 54 extraneous comma (after 30 days); p6 lines 34-37 very awkwardly phrased.

We have made changes where appropriate

As this is an international journal with an international audience, the authors need to explain what the meaning of 'NHS 111' and 'fit note'.

Thank you for pointing this out – explained as suggested.

VERSION 2 – REVIEW

REVIEWER	Associate Professor Lisa Hanna Deakin University, Australia
REVIEW RETURNED	28-Jul-2017

GENERAL COMMENTS	Modifications in response to reviewers' comments have addressed the majority of the issues with the paper.
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REVIEWER	Catherine Matheson University of Southampton
REVIEW RETURNED	29-Jul-2017

GENERAL COMMENTS	I thank the writers for this very much improved manuscript which is presented in a clear and lucid manner and I am pleased to recommend it for publication.
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