PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Pilot Study to Build Capacity for Family Medicine with Abbreviated, Low Cost Training Program with Minimal Impact on Patient Care for a Cohort of 84 General Practitioners Caring for Palestinian Refugees in Jordan
AUTHORS	Al Shdaifat, Amjad; Zink, Therese

VERSION 1 - REVIEW

REVIEWER	Birgitte Schoenmakers Dept of public health and primary care University of Leuven Leuven Belgium
REVIEW RETURNED	05-Dec-2018

GENERAL COMMENTS	Is there a difference between family medicine en general practice? it seems so in your introduction. Therefor it is not clear what you mean further on by 'GP' (line 40). Later on you also use the term family physician faculty. This is confusing. The link between improving primary care and training to deliver high quality in refugee camps, is really too short cut. I believe these are two completely different care domains. ' This effort is integrated into a wider range of efforts to improve quality and achieve universal access' but you did not study that? How did you assess knowledge etc? case based? other assessment? Line 20: it is unclear how you composed the program: which topics, which learning/teaching format? It looks like in this section you are mixing up methods and results? How many workplace based assessment were made per trainee? How did you measure progression her? By audits on medical files and comparing before and after to see if clinical practice changed? Results section is impossible to judge since methods are not clear and data reporting is insufficient. Discussion: 'We evaluated a training program designed to enhance the knowledge and clinical skills of GPs delivering primary care in all the UNRWA clinics in Jordan'. I do assume you did bu it is hard to judge content, development, output and outcome since method section is very unclear. It would be helpful if you clearly described how you set up the program in more concrete steps. Overall, I think providing effective and accessible healthcare for

	target groups as refugees is very important and needs a particular attention. I would therefor not directly connect it to primary care or to the goals of a pertinent primary healthcare system. But if you see this differently, I think you have to adjust the introduction.

REVIEWER	Larry A Green University of Colorado School of Medicine United States
REVIEW RETURNED	28-Feb-2019

GENERAL COMMENTS	This is very well written and contextualized; focused and stays focused within its stated purpose and conclusions. The topic is important to population health and physician education. It is amazingly practical and avoids idealized but unattainable educational approaches, an example of adapting to the realities of a situation in need of attention. Several minor editorial notes: 1. Consider revising title to indicate this is a pilot, pragmatic study. The conclusion stated in abstract might draw readers to the article if incorporated to some degree in the title. 2. page 8 line 29--?rational 3. page 11, lines 15-30 eloquently states the problem that this training program aims to address and it might belong in the introduction as part of the set up. 4. Figure 1 --?include footnote explaining UNRWA and AAS 5. Table 1--?include footnote explaining SD and SEM 6. Figure 2--No. 11 --equipment's??, No 19--?include features used; not clear how the score was summed to get up to 5 points--maybe footnote expansion or explanation in methods.

REVIEWER	Benjamin Oldfield Yale School of Medicine; United States of America
REVIEW RETURNED	03-Apr-2019

GENERAL COMMENTS	This is an interesting study that involves elements of medical education evaluation, implementation, and mixed-methodology about an important topic: building capacity for primary care provision in a setting where a need has been identified. This study has many strengths, including its combination of methodologies and its focus on implementation and cost. However, several aspects of the manuscript should be improved prior to publication. Large-scale comments: 1. If this work is to serve as a model for other efforts towards building primary care capacity, more of its elements should be presented in full to facilitate replication. The needs assessment should be detailed, as should its findings. The curriculum used in Stage 2 should be presented in full, or at least certain elements should be presented in full as examples (perhaps as a supplementary document). 2. A greater justification for the gaps in primary care provision--and the importance of capacity-building--should be justified in the introduction. This is alluded to in the introduction and developed a bit more fully in the discussion (via citations 13-16), but should be instead developed in the introduction.

	3. Multiple potential strategies exist for building primary care capacity beyond those mentioned in the study, such as residency programs, empowering advanced-practice providers, public health programs and public health nurses, various tele-health models, etc. How the studied intervention might be contextualized in other efforts such as these should be discussed in the discussion. Smaller-scale comments: 4. Page 2, lines 7-13. Please define "capacity" here, as well as in the text, because this term may convey different meanings to different readers. 5. Page 2, lines 50-54: How was satisfaction assessed? How was cost assessed? 6. Page 5, lines 19-28: Please explain what is meant by "biomedical- and hospital-centered model." 7. Page 5, lines 31-40: Please provide evidence of a gap or deficiency in primary care provision in Jordan. Citation 5 does not address Jordan specifically. 8. Page 6, lines 17-57: If space is needed, consider condensing the two first paragraphs in the Methods section into one, shorter paragraph. 9. Page 7, lines 23-35. Why these statements are in bullets is unclear to me, and a bit distracting. Please either incorporate them into the text or have them stand alone as a table or text box. 10. Page 10, lines 4-7: Why were paired t-tests not done? 11. Page 12, lines 11-38: Please include in the discussion section a mention of the potential bias introduced by the fact that the evaluator was also the developer of the program and the teacher and so this introduces multiple forms of bias.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1 Birgitte Schoenmakers

1. Is there a difference between family medicine en general practice? it seems so in your introduction. Therefor it is not clear what you mean further on by 'GP' (line 40). Later on you also use the term family physician faculty. This is confusing. –We clarified this on page 7 by describing AAS's board certification.

2. The link between improving primary care and training to deliver high quality in refugee camps, is really too short cut. I believe these are two completely different care domains. --This effort is integrated into a wider range of efforts to improve quality and achieve universal access' but you did not study that? How did you assess knowledge etc? case based? other assessment? Line 20: it is unclear how you composed the program: which topics, which learning/teaching format? It looks like in this section you are mixing up methods and results? How many workplace based assessment were made per trainee? How did you measure progression her? By audits on medical files and comparing before and after to see if clinical practice changed? Results section is impossible to judge since methods are not clear and data reporting is insufficient. Discussion: 'We evaluated a training

program designed to enhance the knowledge and clinical skills of GPs delivering primary care in all the UNRWA clinics in Jordan'. I do assume you did bu it is hard to judge content, development, output and outcome since method section is very unclear. It would be helpful if you clearly described how you set up the program in more concrete steps. Overall, I think providing effective and accessible healthcare for target groups as refugees is very important and needs a particular attention. I would therefor not directly connect it to primary care or to the goals of a pertinent primary healthcare system. But if you see this differently, I think you have to adjust the introduction.

–We feel that this reviewer misunderstood the point of this project. In order to address the concerns, we eliminated the subtitle patient and public involvement and added additional data to the needs assessment description, added more detail to the components of the training, added a description of the training satisfaction in the evaluation of training subsection and made the anonymous collection of satisfaction with training a separate sentence. In addition, we removed the common diseases frequencies from the results, since this guided the training curriculum. We hope this addresses the reviewers concerns sufficiently.

Reviewer 2 Larry A Green

1. Consider revising title to indicate this is a pilot, pragmatic study. The conclusion stated in abstract might draw readers to the article if incorporated to some degree in the title. –Done and thanks for this suggestion.

2. page 8 line 29--?rational --Spelling changed

3. page 11, lines 15-30 eloquently states the problem that this training program aims to address and it might belong in the introduction as part of the set up. –Thanks for this suggestion, this was added to the introduction

4. Figure 1 --?include footnote explaining UNRWA and AAS --Done

5. Table 1--?include footnote explaining SD and SEM --Done

6. Figure 2--No. 11 --equipment's??, No 19--?include features used; not clear how the score was summed to get up to 5 points--maybe footnote expansion or explanation in methods. --This Figure was changed to a table (Table 1) and embedded in the manuscript. Footnotes were added to address the reviewer's concerns.

Reviewer 3 Benjamin Oldfield

1. If this work is to serve as a model for other efforts towards building primary care capacity, more of its elements should be presented in full to facilitate replication. The needs assessment should be detailed, as should its findings. The curriculum used in Stage 2 should be presented in full, or at least certain elements should be presented in full as examples (perhaps as a supplementary document). – We added more detail to the needs assessment including information available to AAS because of his contract with UNRWA for other work. We did not provide the supplementary document, but can provide an outline if the editors wish. Interested readers can contact AAS to obtain this as well and this was added to the data sharing on page 1.

2. A greater justification for the gaps in primary care provision--and the importance of capacity building--should be justified in the introduction. This is alluded to in the introduction and developed a bit more fully in the discussion (via citations 13-16), but should be instead developed in the

introduction. –By moving part of the discussion to the introduction (suggestions of reviewer 2) we believe this is accomplished.

3. Multiple potential strategies exist for building primary care capacity beyond those mentioned in the study, such as residency programs, empowering advanced-practice providers, public health programs and public health nurses, various tele-health models, etc. How the studied intervention might be contextualized in other efforts such as these should be discussed in the discussion.

--Thank you for this suggestion. We highlighted more clearly that our program was an approach to addressing the needs in regions with large numbers of physicians who are not adequately trained to provide inadequate numbers of primary care, this program may offer a model for building capacity without excessive expense or impact on patient care. We added the variety of strategies to the discussion.

4. Page 2, lines 7-13. Please define "capacity" here, as well as in the text, because this term may convey different meanings to different readers. –The authors believe building capacity is a phrase understood and not requiring further definition. However, will provide if the editors wish.

5. Page 2, lines 50-54: How was satisfaction assessed? How was cost assessed?

--This was previously discussed in the paper.

6. Page 5, lines 19-28: Please explain what is meant by "biomedical- and hospital-centered model." --We believe these terms are self-explanatory, but will define further if the editors wish.

7. Page 5, lines 31-40: Please provide evidence of a gap or deficiency in primary care provision in Jordan. Citation 5 does not address Jordan specifically.

--The reference from the The High Health Council. The Hashemite Kingdom of Jordan: The National Strategy for Health Sector in Jordan 2015- 2019 was added.

8. Page 6, lines 17-57: If space is needed, consider condensing the two first paragraphs in the Methods section into one, shorter paragraph.

--This was done and we believe helps with the confusion by reviewer 1.

9. Page 7, lines 23-35. Why these statements are in bullets is unclear to me, and a bit distracting. Please either incorporate them into the text or have them stand alone as a table or text box. --these were removed

10. Page 10, lines 4-7: Why were paired t-tests not done? --Yes. This was already stated in the results.

11. Page 12, lines 11-38: Please include in the discussion section a mention of the potential bias introduced by the fact that the evaluator was also the developer of the program and the teacher and so this introduces multiple forms of bias. –Done

VERSION 2 – REVIEW

REVIEWER	Birgitte Schoenmakers University of Leuven, Belgium
REVIEW RETURNED	28-Apr-2019

GENERAL COMMENTS	Dear Atuthors, it is a great job you performed: designing and implementing an evidence based and comprehensive course in family medicine. I appreciated the developing procedure, combining both the results of the need assessment and didactic input and materials. What I miss in the description is how you used the results of the post-test assessment: I believe it is important to feedback on these results and to construct a dynamic learning agenda. I wish you all the luck and if anywhere you need help for further developing of this training program, I am available (as co-designer of the Flemish, Belgian GP advanced master program)

REVIEWER	Larry A Green University of Colorado School of Medicine United States
REVIEW RETURNED	18-Apr-2019

GENERAL COMMENTS	Authors responded thoroughly and appropriately to prior reviews. This is a delightful, pragmatic contribution to the literature.

REVIEWER	Benjamin Oldfield Yale School of Medicine, USA
REVIEW RETURNED	22-Apr-2019

GENERAL COMMENTS	Thank you for the opportunity to revise this revision of the manuscript. I believe that the manuscript is improved but does require further modifications prior to publication. Additionally, in future revision, please use full sentences in the responses to reviewers' comments and specify which text (with page and line numbers) were modified for each comment. 1. I would continue to encourage clarification of the term "capacity" and would favor that the authors use instead a term, or terms, that are more specific. Often, "primary care capacity" refers to the number of primary care providers that exist. This program focused, instead, on training of existing providers and so terminology that focuses on skills/knowledge would be more specific. 2. The authors mention in the revision letter that the metrics used to measure satisfaction and cost are mentioned earlier in the paper; however this reviewer is unable to identify where this is. Is satisfaction assessed via the three questions meant to query the value of the program on page 12 of the tracked-changes version? Regarding cost, the authors mention that the instructor did not require additional payment, but what about the other costs, including opportunity costs, involved in the design, implementation, and evaluation of this program? 3. The authors added a sentence to introduce the bias associated

	with having the instructor be the same person as the evaluator, but should specify what forms of bias this introduces, how it may influence results, and how the authors attempted to minimize this bias.

VERSION 2 – AUTHOR RESPONSE

Reviewer: 2

Reviewer Name: Larry A Green

--no further revisions suggested

Reviewer: 3

Reviewer Name: Benjamin Oldfield

Institution and Country: Yale School of Medicine, USA

1. I would continue to encourage clarification of the term "capacity" and would favor that the authors use instead a term, or terms, that are more specific. Often, "primary care capacity" refers to the number of primary care providers that exist. This program focused, instead, on training of existing providers and so terminology that focuses on skills/knowledge would be more specific.

--The title clearly states family medicine capacity and the abstract talks about the underdevelopment of primary care. The abstract conclusion calls the pilot “a potential model for building primary care capacity.” Within the paper we believe it is clear that we are talking about primary care capacity building. It is unclear to us where further clarification is needed. We could add primary care to the 2nd sentence in the abstract, but then the word count exceeds 300. The sentence would read: Most primary care capacity building programs are expensive and take physicians away from their clinical settings. However, if the editors want this done and/or want something more in the paper, we are happy to do so.

2. The authors mention in the revision letter that the metrics used to measure satisfaction and cost are mentioned earlier in the paper; however this reviewer is unable to identify where this is. Is satisfaction assessed via the three questions meant to query the value of the program on page 12 of the tracked-changes version? Regarding cost, the authors mention that the instructor did not require additional payment, but what about the other costs, including opportunity costs, involved in the design, implementation, and evaluation of this program?

--Satisfaction assessment is located on page 11 below table 1. To make it clearer we made the following change:

OLD The value of the training was evaluated with three questions using a four-point Likert scale response: clarity of the training objectives, relevance of the training to daily practice and the positivity of the on-the-job learning environment. These were collected anonymously.

NEW Satisfaction with the training was evaluated with three questions using a four-point Likert scale response: clarity of the training objectives, relevance of the training to daily practice and the positivity of the on-the-job learning environment. These were collected anonymously.

--To clarify the costs we focused on we added this sentence on page 13: UNRWA cannot afford the tuition or the loss of clinical time.

3. The authors added a sentence to introduce the bias associated with having the instructor be the same person as the evaluator, but should specify what forms of bias this introduces, how it may influence results, and how the authors attempted to minimize this bias.

--To address the concern related to bias. We added this language and a reference on page 14: Finally, serving as trainer and evaluator may introduce leniency bias,22 since AAS both created and evaluated the program. To minimize this, the second author was added to review and interpret the data.

Reviewer: 1

Reviewer Name: Birgitte Schoenmakers

Institution and Country: University of Leuven, Belgium

What I miss in the description is how you used the results of the post-test assessment: I believe it is important to feedback on these results and to construct a dynamic learning agenda.

--We added this sentence at the end of Structure of the Training Program section on page 10: The evaluation was reviewed with the trainee at the end of the session.

--In addition we added this sentence to the bottom of page 14: The findings from this program are being used to guide the development of a primary care capacity building training program for the Jordanian Ministry of Health.

VERSION 3 - REVIEW

REVIEWER	Benjamin Oldfield Yale School of Medicine, USA
REVIEW RETURNED	09-Jul-2019

GENERAL COMMENTS	Thank you for the opportunity to review this manuscript again. It continues to improve. 1. I am unsure why the title has become so long, and believe that it currently has more information than is necessary. Consider shortening to "Pilot study to improve knowledge and clinical skills for family medicine practitioners in Jordan." 2. I apologize that I was not clear about my concerns about the term "capacity" in previous reviews of this manuscript. This reviewer continues to be distracted by the manuscript's use of this term because primary care capacity usually (although not always) refers to the number of practitioners available. However, this study did not

	increase the number of practitioners available, but instead focused on bolstering existing providers' knowledge and clinical skills (and this is the language that is used in the article summary on page 4--"...designed to enhance the knowledge and clinical skills." Thus, I would remove mention of capacity (such as in the title, opening part of the abstract, and so forth) and instead use the language of knowledge and clinical skills. 3. Please explain why the program only lasted from 2013 from 2014, as this may have implications for the program's sustainability and scalability, which will be of interest to readers. 4. The manuscript's final paragraph states that a formal discussion of other strategies to enhance primary care is beyond the scope of this paper. This is reasonable, but the authors should make attempts to contextualize their findings within the extant literature regarding enhancing primary care knowledge, particularly in resource-poor settings. This is done in the first paragraph in the discussion, but only to a limited extent and should be further developed. This will make the paper stronger. Additionally, citing a family medicine board review book does not seem appropriate here (in the last paragraph), but perhaps I am not understanding the link.

VERSION 3 – AUTHOR RESPONSE

Reviewer: 3

Reviewer Name: Benjamin Oldfield

Institution and Country: Yale School of Medicine, USA Please state any competing interests or state

1. I am unsure why the title has become so long, and believe that it currently has more information than is necessary. Consider shortening to "Pilot study to improve knowledge and clinical skills for family medicine practitioners in Jordan."

The title was lengthened due to the request of the editor (Ms. Johnson) during our first revision.

Original: Building Capacity for Family Medicine in Jordan: Classroom and On-the-Job Training for a Cohort of General Practitioners in Jordan

Current: Pilot Study to Build Capacity for Family Medicine with Abbreviated, Low Cost Training Program with Minimal Impact on Patient Care for a Cohort of 84 General Practitioners Caring for Palestinian Refugees in Jordan

At this point, we would prefer the original, but will do whatever the editor wants.

2. I apologize that I was not clear about my concerns about the term "capacity" in previous reviews of this manuscript. This reviewer continues to be distracted by the manuscript's use of this term because primary care capacity usually (although not always) refers to the number of practitioners available. However, this study did not increase the number of practitioners available, but instead focused on bolstering existing providers' knowledge and clinical skills (and this is the language that is used in the article summary on page 4--"...designed to enhance the knowledge and clinical skills." Thus, I would remove mention of capacity (such as in the title, opening part of the abstract, and so forth) and instead use the language of knowledge and clinical skills.

--The term capacity building for primary care is the correct terminology. We refer the reviewer to Citation 15.

3. Please explain why the program only lasted from 2013 from 2014, as this may have implications for the program's sustainability and scalability, which will be of interest to readers.

--We addressed this concern by stating Between 2013-14 instead of in on page 7

4. The manuscript's final paragraph states that a formal discussion of other strategies to enhance primary care is beyond the scope of this paper. This is reasonable, but the authors should make attempts to contextualize their findings within the extant literature regarding enhancing primary care knowledge, particularly in resource-poor settings. This is done in the first paragraph in the discussion, but only to a limited extent and should be further developed. This will make the paper stronger. Additionally, citing a family medicine board review book does not seem appropriate here (in the last paragraph), but perhaps I am not understanding the link.

--We thank the reviewer for identifying our reference error. It is reference 15. This is corrected. This reviewer asked us to add something on this topic in revision 1. We believe further discussion is inappropriate in this paper because the Middle East does not use nurse practitioners, physician assistants or telemedicine. There are too many physicians trained in the Middle East, and Jordan in particular, which is outlined in the introduction. Should the editor want us to say more, we will do so.