Title: Development and evaluation of a blended educational programme for general practitioners' trainers to stimulate proactive HIV testing

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Author’s response to reviews:

Amsterdam, Monday 5 June 17

Dear editor of BMC Family Practice,

Thank you for the option to resubmit our manuscript entitled: ‘Development and evaluation of a blended educational programme for general practitioners’. We believe that the reviewers’ comments helped us to improve our manuscript. Please find our response below this letter.

We uploaded a marked copy of our paper highlighting the changes we made by using tracked changes (‘Revised Manuscript Marked Copy’).

We think this paper is of particular interest to your readers, and we hope you reconsider our manuscript for publication in BMC Family Practice.

With kind regards,

On behalf of all authors, Ivo K. Joore, MSc, PhD
Response to the reviewers (FAMP-D-16-00382)

Reviewer 1:

Question 1: The authors successfully designed and executed an educational program to promote HIV testing, and submitted a well-written article. It appears that their best efforts to evaluate the effect of the program on HIV testing were thwarted by a lack of cooperation from 14 of the 21 labs where the 90 GP trainers sent HIV tests and incomplete information from 3 others. The main result of the evaluation is that this method of measuring outcomes was not successful, and I would encourage the authors to report it forthrightly.

Answer 1: We agree that the main question of the evaluation could not be answered successfully. We clarified this in our manuscript. The following sentences were added ‘One limitation of the study is that we could not collect data on laboratory-documented HIV testing for the majority of GPs in both the intervention and control groups due to lack of cooperation from x out of y laboratories. Therefore, answering the main research question if the educational programme was effective was severely hampered.’ (See page 3 (line:26-30) and page 14 (line: 26-30))

Question 2: In addition to the limited and potentially unrepresentative sample, the appropriate outcome variable is the number of HIV tests divided by the number of patients. As reported, it's not possible to distinguish a decline in the number of HIV tests per patient from a decline in the number of patients treated by the GPs.

Answer 2: We added your comment in the limitation section. The following sentences were added ‘The limited results should be interpreted with caution as our findings may not be representative of all participants. It was not possible to distinguish a decline in the number of
HIV tests per patient from a decline in the number of patients treated by the GP.’ (See page 14 (line: 30-33) and page 15 (line 1-7))

Question 3: Further the authors do not address the stability of the population of GPs who use the 4 labs. i.e. A decrease in the number of GPs would reduce the number of patients and subsequently the number of tests. It's also possible that GPs were gradually switching their patients' tests to the 17 other labs.

Answer 3: We added your comment in the limitation section. The following sentences were added ‘We had no insight in the stability of the population of GPs who use the four laboratories. A decrease in the number of GPs would reduce the number of patients and subsequently affect the number of HIV tests. Also, we acknowledge that GPs could have gradually switched their patients’ HIV tests to the 17 other laboratories. More detailed information needs to be collected from the laboratories, as described above, for evaluation of future educational programmes.’ (See page 15 (line 1-7))

Question 4: Although I agree with the authors that the decline in HIV tests bears further investigation, they need to reflect on the problems with their measure, and what they would do differently to evaluate the training program or accurately address the decline that they observed.

Answer 4: We integrated your comments regarding the problems with our measure in the limitations section. (See page 14 (line: 26-33) and 15 (line 1-7)) Also, we added your comment about what would we do differently to evaluate the training programme in the limitation section. (See page 15 (line: 7-20)) The following sentences were added ‘We recommend that laboratories need to be more involved in the design of the study. This could help bypassing some of the barriers regarding the collection of the data. Another way to evaluate these programmes is to use general practice-documented HIV testing data. As a different level of use of laboratory-documented HIV testing by GPs after the programme only offers partial evidence of GPs following the new recommendations. We would also like to know which patients are tested (for example, MSM versus non-MSM) and why (for example, provider initiated testing versus patient-initiated testing). Future research needs to collect this additional information to determine the actual impact of an educational programme on GPs’ HIV testing behaviour.’

Question 5: Abstract: In the methods section, report that 150 GP trainers attended the first session, and 74 completed the questionnaires for both sessions.
Answer 5: We added your suggestion. (See page 3, line (16-17))

Question 6: p. 7, Line 31. Describe who the teachers were. Were they the same people who designed the guidelines?

Answer 6: No, these were members of the Department of General Practice at the AMC and had no role in the design of the guideline. We added this information. (See page 7, line (20-22))

Question 7: p. 9. Report how the data on the QI plans and satisfaction were analyzed.

Answer 7: We added these sentences in the method section.

‘The median average score of all quality improvement targets was calculated.’

‘We used descriptive analysis for the evaluation of the two sessions (satisfaction).’ (See page 9, line (11-12))

Question 8: p. 10, line 12. Report both response rates: 74/150 is 50%, and 74/90 is 82%.

Answer 8: We added this information.

‘Of these, 74/90 (82.2%) completed both questionnaires and 50% (74/150) of all GPs who attended the first meeting participated in the study.’ (See page 10, line (8-10))

Question 9: p. 11, line 36. Where are the results on satisfaction?

Answer 9: We changed this section.

‘The total satisfaction value of both meetings within the programme was rated high, at an overall median average score of 4 (scale 1 to 5 "where 5 means strongly agree") on both days.’ (See page 11, line (25))

Question 10: In Table 3, report the demographic statistics on the 150 GP trainers who attended the first session and the 74 GP trainers who completed both questionnaires. How to the latter differ from those who attended the first session?
Answer 10: We did not include the demographic statistics of all 150 GP trainers as not all of them gave permission for the research (informed consent) and this information was not retrieved from GPs who did not participate in the study. The demographic statistics of the 90 GP trainers and the 74 GP trainers were similar. (See table 3)

Question 11: Table 4. Note the response categories for each result, so the results can be readily interpreted without referring to the text. E.g. For self-reported HIV testing, a score of 6 = at least twice a week, and 1=never.

Answer 11: We added your suggestion in table 4. (See table 4)

Question 12: Figure 1. The results from 2014s - 2015s appear as a straight line, rather than with 2.3% and 1.8% decrease. Use the same scale for the horizontal axis pre and post training.

Answer 12:

We agree that the effect are extremely subtle. A close look, however, will show a tiny (downward) angle for both lines (and the raw numbers from the regression postcommand “margins” confirm this). In fact, using a slightly larger scale for the post-intervention time points supports the detection of the ever so slight downward tilting. We therefore left the graph as it was. (See figure 1)

Question 13: p. 5. Line 20. The word "used" could be replaced by "referenced."

Answer 13: We added your suggestion. (See page 5, line (14))

Question 14: p. 7, Line 18. Add the word "trainers" to the phrase "GP".

Answer 14: We added your suggestion. (See page 7, line (13))

Question 15: p. 10, line 20. Add the phrase "after the second meeting" after "trainee" if this is accurate.

Answer 15: We added your suggestion. (See page 10, line (13))
Question 16: p. 11, line 18. Remind the reader that for this measure, 5 means success.
Answer 16: We added your suggestion. (See page 11, line (14))

Question 17: p. 11, line 40. Add the words, "where 5 means strongly agree" to the phrase "scale 1 to 5" in parentheses.
Answer 17: We added your suggestion. (See page 11, line (26 and 30))

Question 18: p. 12, line 11. Delete the word "moderately."
Answer 18: We added your suggestion. (See page 12, line (8))

Question 19: p. 13, line 7. Delete the word "other."
Answer 19: We added your suggestion. (See page 13, line (5))

Question 20: p. 13, line 24. It's unclear how the "performance of test ordering" that was unsuccessful differs from the test results reported. Do the authors mean collecting data from the GPs practice rather than the lab?
Answer 20: We changed this sentence into Feedback on the performance of laboratory-test ordering by GPs was considered as a follow-up to our study design but was unsuccessful due to difficulties in retrieving GP trainers’ laboratory-documentated HIV testing results. (See page 13, line (14))

Question 21: p. 13, line 42. Add the word "trainers" to the phrase "GP".
Answer 21: We added your suggestion. (See page 13, line (24))

Question 22: Table 2. Please note which questionnaires were administered. E.g. on Day 1, was the pretest questionnaire on knowledge and attitude, and the summary and quality questionnaire on satisfaction?
Answer 22: We added your suggestion in table 2. (See Table 2)
Question 23: Was there any content or guidance on the "Learning conversation with their resident."

Answer 23: No, GP trainers are trained to perform a learning conversation with their resident during their 4-year training program as a trainer. We added this sentence in the method section (See page 5, line 12-13)

Question 24: Tables 5. Note "pre-training" and "post-training" in the column headings.

Answer 24: We think you mean table 6. We added this suggestion. (See table 6)

Reviewer 2:

This is a well-constructed study. This article is an impressive study to pointed out that HIV patients' diagnoses should not be missed. However, I have some suggestions for improvement.

Question 1:
In the methods,

Learning conversation;

a) “Also, GP trainers were also asked to initiate a conversation with their own trainee,…” one of the also is extra used.

Answer 1: We added your suggestion. (See page 7, line (8))

Question 2: - Discussion groups;

What are the competence and competencies of these moderators for such sessions.

“all teachers…” Who have been trained and who have been assessed / assessed for their end-of-training competencies and competences

Answer 2: These moderators are experienced and trained teachers at the Department of General Practice at the AMC. We integrated your suggestion. (See page 7, line (20-22))
Question 3:

In the results,

GP trainers’ laboratory-documented HIV testing

Intervention and control groups are mentioned here for the first time. Why not specified in the method section.

Answer 3: We did mention this in the method section. However, we clarified this in this section. (See page 7, line (33) and page 8 line (3))

Question 4:

Self-reported HIV testing

What is the relevance of this heading to the training program or the targets in the training group?

Answer 4: The relevance of this heading is the difference between laboratory and self-reported HIV testing that was observed which we discussed in the discussion part of our manuscript. We also collected information on laboratory-documented HIV testing trends for a prolonged period and not only before and after the programme. This enabled us to reflect in greater depth on the outcomes, rather than only relying on an analysis of the questionnaires. Self-reported HIV testing in the questionnaires suggested a decrease in HIV testing. However, the programme appeared to have stabilized – at a higher level of request for laboratory-documented HIV tests – the initially stronger downward trend in the 11 GPs who participated in the programme.

(See page 14, line (19-25))

Question 5:

In the discussion,

Comparison with existing literature

“Also, we hypothesize that GPs may have found a better way to determine who should or should not be tested.” This sentence is a bit too sarcastic.

Answer 5: We agree and changed this sentence into ‘Also, we hypothesize that GPs target the right group who should be tested.’ (See page 14, line (5-6))
Question 6:

Strengths and limitations

“One strength of this study is that we initiated a blended education programme…” Why was it considered the strength of the research?

Answer 6: It is recommended that educational strategies should be interactive and include multiple teaching strategies, for example, group discussions about evidence and setting quality improvement targets. Educational strategies are more effective in inducing behavioural change if they involve interactive training programmes that use multiple teaching strategies. There is also increasing interest in the use of internet-based learning in educational strategies, while one previous study recommended blended learning, which combines electronic teaching methods with traditional teaching strategies. (See page 4, line (16-28))

Question 7:

Do those who start this program have competence and competencies.

Answer 7: Yes they are experienced GP trainers. We invited GP trainers of the AMC. To become a GP, medical graduates must complete 3 years of specialty training linked with an experienced GP, the GP trainer. GP trainers complete a 4-5 year programme, with 8 days of refresher training required every year. (See page 5, line (7-14))

Question 8: “Another strength of this study is that we collected data on GPs’ laboratory-documented…”

Although the results of all of the laboratories cannot be reached, Why was it considered the strength of the research?

Answer 8: We tried to explain that laboratory-documented HIV testing provides more detailed information about GPs’ actual testing behaviour compared to information gained from questionnaires, as self-reported levels of HIV testing may be biased by socially desirable answers or recall bias. However, we agree that we were not successful in retrieving all the data. We made adjustments in the limitation section to clarify this by adding: ‘Also, we tried to incorporate GPs’ laboratory-documented HIV testing to objectively measure any change in behaviour.’ (See page 14, line (13-14) and lines (26-33))
Question 9: “We also collected information on laboratory-documented HIV testing trends for a prolonged period and not only before and after the programme.”

But you cannot clearly explain the surprise decrease in the HIV test request. Is your data sources different or not reliable before and after the program?

Answer 9: This enabled us to reflect in greater depth on the outcomes, rather than only relying on an analysis of the questionnaires. Self-reported HIV testing in the questionnaires suggested a decrease in HIV testing. However, the programme appeared to have stabilized – at a higher level of request for laboratory-documented HIV tests – the initially stronger downward trend in the 11 GPs who participated in the programme. Overall, we observed a decrease of HIV testing in the control group. Our laboratory data source was not wrong or unreliable but the overall downward trend in HIV tests among GPs was surprising. Even before the 2013 guidelines were established, the professional media was drawing attention to a need to increase proactive HIV testing. More research is warranted to find out the reason for this downward HIV testing trend. (See page 13 line (24-33), 14 line (19-25))

Question 10: In the conclusion, it is too inadequate to assess the effectiveness of the program.

Answer 10: We agree. Therefore we changed the limitation section and added the line ‘One limitation of the study is that we could not collect data on laboratory-documented HIV testing for the majority of GPs in both the intervention and control groups due to lack of cooperation from the laboratories. Therefore, answering the main research question if the educational programme was effective was severely hampered. The limited results should be interpreted with caution as our findings may not be representative of all participants. (see page 14 line (26-31))

Also we changed the conclusions (in abstract and manuscript) and added the section: We provided a detailed description of a programme based on educational and clinical evidence. We could not retrieve laboratory-documented HIV testing data for the majority of GPs in both the intervention and control groups. Therefore, the results should be interpreted with caution as our findings may not be representative of all participants. The blended educational programme appears to have stabilized – at a higher level – the initially stronger downward trend in testing for 11 GPs undergoing the intervention, indicating that the programme may have had an impact on their HIV testing behaviour.

(see page 15 line (21-33) and 16 line 1-2)