Author's response to reviews

Title: Video-based on-Ward Supervision for Final Year Medical Students

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Author's response to reviews: see over
July 27th, 2015

Dear Executive Editor Mrs Clare Partridge,

Thank you very much for your email dated July 2nd. We greatly appreciate the critical and helpful comments from the Editorial Board and reviewer Rachel Walker. The comments again have proven to be valuable in revising the manuscript. Please find detailed responses to all points raised below. We would like to express our gratitude for giving us the opportunity of submitting a re-revised version of the manuscript BMC Med Educ 1503916828147615 entitled “Video-based on-Ward Supervision for Final Year Medical Students”. We hope that the questions raised by the reviewer have been adequately addressed.

We appreciate you considering our article for publication and look forward to hearing from you soon.

PD Dr. med.
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(Direktor: Prof. Dr. med. W. Herzog)
Reviewer 1: Rachel Walker

Thank you for the opportunity to re-review this manuscript.

The authors of the paper have made considerable attempts to improve clarity of language and the structure of the manuscript.

However the quality of written English is still not yet suitable for publication, particularly in the first half of the manuscript. There are inconsistencies in terminology and the manuscript continues to be repetitive and verbose in places (refer to previous feedback).

While there are challenges associated with preparing a manuscript for an academic journal in a different language, the authors should avoid expressing their opinion and be transparent in identifying any potential biases.

Thank you very much for your positive feedback concerning our attempts to improve the manuscript and for your efforts for further improvements. Again, we have tried to integrate all of your suggestions (see answers to your comments below) and hope that the manuscript is now suitable for publication. In order to improve the quality of written English, a professional editing service has been used this time. Therefore, we uploaded a clear copy of the main manuscript without track changes.

Specific feedback

Comment 1:

Aims of the study

- Aim (2): obtain pilot data to enable appropriate sample size calculations and to refine the protocol for a larger study......this aim
is not referred to again. If not relevant to your study consider removing from the manuscript

Thank you for bringing this issue to our attention. We therefore removed this aim from our study.

Page 5, lines 11-16: “While the overall aim of the present study was to develop and establish a video-based, on-ward supervision model, our study sought to (1) evaluate the feasibility and acceptability of video-based, on-ward supervision via the assessment of process, resources, management and scientific factors; and, (2) assess whether video-based, on-ward supervision was perceived as beneficial by participating final year students.”

Comment 2:

Study Design

- Although identified in the section titled Qualitative data, “Grounded Theory” is not specifically named in the Study design section. Consider introducing this qualitative method with a rationale in the study design section.

In the revised version of the manuscript Grounded Theory is explicitly named. We also included a short rationale for why we used the principles of this method for the analysis of the qualitative data:

Page 6, lines 10-12: “For the qualitative parts of our study we used a grounded theory design, as this is detailed and systematic and therefore suitable to investigate complex phenomena with a focus on interactions in specific situations [42].”
Comment 3:

Participants

- Consider clarifying what final year medical student means. How many years are in the program?

Thank you for pointing this out. We included the missing information in the re-revised version of the manuscript.

Page 6, lines 17-19: “In German medical school programmes, the sixth year is also known as the final year. Final year students must complete one term of internal medicine, one term of surgery and one elective term (that is a 4-month period of on-ward training in each specialty).”

Comment 4:

Supervisor’s instructions and student’s competencies

- Consider clarifying the role of “the supervisor”. I assume “the supervisor” is the chief investigator of the study. If this person is also a 4th year internal medicine resident, there may be an assumption of bias if they are supervising, assessing and providing feedback regarding the clinical skills of their 4th year internal medicine resident colleagues.

There seems to be a misunderstanding: The “supervisor”, is an especially trained medical doctor in his residency, who is supervising the final year students on ward, as previous studies have shown, that supervision and feedback is rare in workplace learning. Accordingly, he was the one giving professional structured feedback to the students. This specific innovative model for on-ward supervision was previously published and builds the basis of our video-based on-ward supervision (for example Eden M, Köhl-
Hackert N, Krautter M, Jünger J, Nikendei C. An innovative model for the structured on-ward supervision of final year students. Med Teach. 2010;32(2):181.) We tried to clarify this matter by changing the passage as follows:

Page 8, lines 3-6: “The supervisor was specifically trained in the supervision of final year medical students during clinical on-ward procedures and to provide professional, structured feedback. During supervision, the supervisor provided students with standardised instructions and outlined expectations, for example, the respectful treatment of patients during all contact.”

Comment 5:

Setting

- Consider using a capital letter when referring to Tables or Figures.

Thank you for this suggestion. We now used capital letters when referring to Tables or Figures in the re-revised version of our manuscript.

Page 7, line 12: “The procedure of the present study is presented in Table 1.”

Page 13, lines 9-11: “Students self-reported feeling most confident about placing peripheral intravenous portals, taking histories and executing a physical examination, whereas they self-reported being less confident about case presentations (Table 2).”

Page 13, line 16: “Acceptance ratings of the video-based, on-ward supervision are presented in Table 3.”

Page 13, lines 18-20: “Overall, video-based, on-ward supervision was perceived as very beneficial for practical medical education (Table 3).”
Page 14, lines 5-6: “The qualitative analysis of the interviews covered four categories incorporating nine themes, as defined below (Table 4).”

Page 18, line 24-25: “The patients’ ratings regarding their participation and subjective impressions are presented in Table 5.”

Page 21, lines 6-7: “Therefore, though a video-based approach might be more time-consuming (Table 1) than classic supervision models, it does not require additional personnel.”

Comment 6:

• Supervisor’s video recording and field notes and video recording.

This subtitle has been changed according to your suggestions.

Page 8, line 21: “Supervisor’s video recording and field notes”

Comment 7:

• While interesting, much of the description of the video recording is not necessary to the overall reporting of the study.

Thank you very much for your advice. We have changed this section according to your suggestions (see comment 8).

Comment 8:

• Consider the following edits:

A Rollei Movieline SD-23 camera of the model Rollei Movieline SD-23 was used to record the clinical skills. It was placed in the corner
of the patient’s room facing the patient’s bed without showing the neighbouring patient in the room. The camera was operated by the **Chief Investigator** supervisor (JG), **who used a tripod for static shots during the performed procedures. In some sessions the supervisor (JG)–with occasional assistance was assisted by—a second team member (RS), who then operated the camera. However, there was no need for the assistance by a second person in regard to the quality of the supervision, especially as the camera position was not changed during history taking and physical examination. The camera position only had to be adapted during the supervision of manual skills (for example, i.e. the use of the camera zoom during IV cannulation) in order to show some aspects of the skill in more detail. Field notes were taken by the supervisor during each session to record relevant positive or improvable procedural or communicative aspects. These aspects were then fully discussed in the feedback loop.

**Thank you for your suggestions to improve both language and delete unimportant information. Accordingly, we have changed this passage:**

*Page 8, lines 22-26 – page 9, lines 1-4:* “A Rollei Movieline SD-23 (Rollei GmbH & Co. KG, Hamburg, Germany) camera was used to record the performance of clinical skills. It was placed in the corner of the patient’s room facing the patient’s bed, without showing a neighbouring patient in the same room. The camera was operated by the chief investigator (JG), with occasional assistance by a second team member (RS). The camera position was only adapted during the supervision of manual skills (e.g. the use of the camera zoom during IV cannulation) to show some aspects of the skill in more detail. Field notes were taken by the supervisor during each session to record relevant positive or improvable procedural or communicative aspects. These aspects were then discussed fully in the feedback loop.”
Comment 9:

Data collection

Quantitative assessment of students

- Consider providing more information about item descriptions for each Likert scale used. For example: 1 = not true, 2 = partially true, 3 = somewhat true and so on until 7 = entirely true.

Thank you for pointing out this topic again. Stated below you will find the translation for the complete German scale we were actually using. We have changed the corresponding passage accordingly:

Page 10, lines 3–6: “Finally, students were asked to self-assess each of the four skills regarding their feeling of preparedness for entry into their profession. Self-assessment was on a 7-point Likert scale (1 = Very untrue; 2 = Untrue; 3 = Somewhat untrue; 4 = Neutral; 5 = Somewhat true; 6 = True; 7 = Very true).”

Comment 10:

- Consider providing a rationale for not having a neutral option; that is, to ensure participants rated their experience of the intervention, otherwise known as a “forced choice”.

Thank you for pointing this out. We therefore added the information to our manuscript.

Page 10, lines 7-10: “After watching the video, students completed an evaluation form specifically addressing the benefits of video-based supervision. Responses were on a 6-point Likert scale that deliberately avoided a neutral score; ensuring participants rated their intervention experience in terms of a ‘forced choice’.”
Comment 11:
- Consider providing a rationale as to why you didn't inform the student participants of the details of the 6-point Likert scale. I am confused by this. Was it a visual analogue scale?

We apologize for the misunderstanding: Concerning the 6-point Likert scale we thought you were asking about specific verbal instructions, which we did not give to the students as the labelling of the scale with all its details was explained in the written instructions on the students’ evaluation forms.

Comment 12:
- Consider avoiding abbreviations such as ‘i.e.’ and ‘etc’. Rather use “that is”, “and so on”.

Thank you for your advice. As suggested, we avoided all abbreviations.

Page 4, line 10-15: “Various educational interventions have been introduced to enhance the didactic value of workplace learning, for example, introductory courses [5], accompanying seminars [6], logbooks [7] and portfolios [8]. However, international observations have highlighted that workplace learning during clerkship assignments and final year education still shows severe deficits, with a lack of structure, integration, supervision and personal feedback [9-12].”

Page 4, line 24-25: “Nevertheless, the correct form of feedback delivery is still strongly debated (for example quantity vs. repetition) [20-24].”

Page 7, line 13-16: “The sessions were held on the medical wards of the University of Heidelberg Medical Hospital in which the participating student worked (nephrology, cardiology, and endocrinology subspecialty wards).”

Page 7, lines 19-22: “When possible, patients were initially invited to participate by the student and in exceptional circumstances by the responsible supervisor (for example the student was not working on a ward
with sustainable patient contacts, such as in the emergency room).”

Page 8, lines 4-6: “During supervision, the supervisor provided students with standardised instructions and outlined expectations, for example, the respectful treatment of patients during all contact.”

Page 8, line 10: “They were instructed to perform the required skills as if no supervisor was present (that is no oral explanations of what they were doing other than communication with the patient).”

Page 8, line 26 – page 9, lines 1-2: “The camera position was only adapted during the supervision of manual skills (for example the use of the camera zoom during IV cannulation) to show some aspects of the skill in more detail.”

Page 14, line 26 – page 15, line 1: “That probably changed our relationship [that is to the patient], as the patient behaved more like an actor due to the more artificial situation’.”

Page 17, lines 21-22: “I find the combination [that is the supervisor's feedback plus video-based feedback] very helpful.”

Page 18, lines 6-7: “Sequential feedback was regarded as the most beneficial, that is first receiving feedback from the supervisor and then watching the video:”

Page 19, line 25 – page 20, lines 1-2: “In our case (in terms of modified, individualised feedback), the students’ focus when watching the video after the procedure was defined by the student and supervisor in a joint process.”

Page 20, lines 2-4: “Our findings show that by viewing the video, added benefit can be achieved, especially in regard to non-verbal aspects (for example gestures, posture) and professional conduct.”
Comment 13:

Qualitative assessment of students

- Consider re-organising this paragraph as follows:

  The interview procedure followed the main items of the **FULL TITLE** (COREQ) checklist [45] and the **Standards for Reporting Qualitative Research (SQOR)**, as recently published [46]. **The COREQ checklist was developed to promote comprehensive reporting of interviews and focus groups in qualitative studies. The 32 criteria included in the checklist can aid researchers in reporting important aspects of the research team, study methods, context of the study, findings, analysis and interpretations [45]**. In 2014, O´Brien et al. published the **SQOR their “Standards for reporting qualitative research” (SQOR)** as a **running Title: Video-based on-ward supervision synthesis of recommendations, thus defining standards for reporting qualitative research [46]**. The **SRQR consists of 21 items. The 21 item COREQ defines standards for reporting qualitative standards including...**

  All participating students were interviewed in an individual face-to-face setting. Interviews lasted approximately 20 minutes and were conducted by a trained interviewer, who was supervised by an experienced tutor. The interviews were semi-structured [47-49] with open-ended questions, to enable students to shed light on the benefits and specific aspects of video-based on-ward supervision. Interviews were audio-taped and transcribed verbatim for interpretation, to record non-verbal behaviours and subjective characteristics of the interview. Using open-ended questions [50], the interviewer asked final year medical students about being videotaped, their perception of the supervision´s setting and realism as well as the quality of the feedback from different sources.
The COREQ checklist was developed to promote comprehensive reporting of interviews and focus groups in qualitative studies. The 32 criteria included in the checklist can aid researchers in reporting important aspects of the research team, study methods, context of the study, findings, analysis and interpretations [45]. In 2014, O’Brien et al. published their “Standards for reporting qualitative research” (SQOR) as a running title: Video-based on-ward supervision synthesis of recommendations, thus defining standards for reporting qualitative research [46]. The SRQR consists of 21 items.

Thank you for improving the manuscript by changing this passage. We have included all your suggestions in the re-revised version of the manuscript.

Page 10, lines 15-26 – page 11, lines 1-5: “The interview procedure followed the consolidated criteria for reporting qualitative research (COREQ) checklist [46] and the Standards for Reporting Qualitative Research (SQOR), as recently published [47]. The COREQ checklist was developed to promote comprehensive reporting of interviews and focus groups in qualitative studies. It has 32 criteria that can aid researchers in reporting important aspects of the research team, study methods, study context, findings, analysis and interpretations [46]. The 21-item SQOR defines standards for qualitative reporting including information on data collection, processing, analysis and limitations.

Individual, face-to-face interviews were conducted with all participating students. Interviews lasted approximately 20 minutes and were conducted by a trained interviewer who was supervised by an experienced tutor. The interviews were semi-structured [48-50] with open-ended questions, enabling students to talk about the benefits and specific aspects of video-based, on-ward supervision. Interviews were audio-taped and transcribed verbatim for interpretation, and non-verbal behaviours and subjective characteristics of the interview were recorded. The interviewer used open-
ended questions [51] to ask the students about being videotaped, their perceptions of the supervision setting and realism, as well as the quality of the feedback from different sources.”

Comment 14:

**Results**

- Consider the following edit:

  **Participants’ Students’ characteristics**

  **Students**

  Nine final year medical students (56%) agreed consented to participate in this pilot study on a voluntary basis (3 male, 6 female, age 25.1± 0.7 years). Eight students had studied medicine at the University of Heidelberg, one at the University of Mainz. All participating students had previous experience of being filmed during their studies as part of the communication training with standardized patients at our faculty [51]

  **Participating Patients**

  Eight internal medicine patients agreed consented to participate in the study (5 male, 3 female, 25 age 59.3 ± 16.8 years). One of patients was willing to participate twice, so that one of the final students took the patient’s history and a different final year student performed a physical examination on the same patient an hour later.

Thank you for again improving the manuscript by rewriting this passage. We included all your suggested changes.

Page 12, lines 18-25 – page 13, lines 2-6:

“Participants’ characteristics

**Students**
Nine final year medical students (56% of all final year students invited) consented to participate in the present pilot study on a voluntary basis (3 male, 6 female; aged 25.1± 0.7 years). Eight students had studied medicine at the University of Heidelberg, and one at the University of Mainz. All participating students had previous experience of being filmed during their studies as part of communication training with standardised patients at our faculty [52].

Patients

Eight internal medicine patients consented to participate in the study (5 male, 3 female; aged 59.3 ± 16.8 years). One patient was willing to participate twice, meaning one participating student took the patient’s history and another student performed a physical examination on the same patient an hour later.”

Moreover, as suggested in your comment, we changed Table 1 accordingly:

**Table 1:** Procedure of the video-based on-ward supervision and time needed for single parts of the session.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Time needed [min]</th>
</tr>
</thead>
<tbody>
<tr>
<td>First talk with students</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Getting patient’s and student’s informed consent</td>
<td>5-10 minutes</td>
</tr>
<tr>
<td>Setting up equipment</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Supervision with video-taping</td>
<td>15-20 minutes (depending</td>
</tr>
<tr>
<td>Feedback loop</td>
<td>5 (-10) minutes</td>
</tr>
<tr>
<td>Watching the video</td>
<td>15-20 minutes (as long as</td>
</tr>
<tr>
<td>Filling out evaluation forms</td>
<td>2-3 minutes</td>
</tr>
<tr>
<td>Interview</td>
<td>7-15 minutes</td>
</tr>
</tbody>
</table>
Comment 15:

Quantitative assessment by students

- Consider the following edit:

Acceptance ratings related to the innovative model are presented in table 3. Video based, on-ward supervision was very well accepted by the participating students, leading to recommendations to other students, who then volunteered to participate as well. Overall, video-based, on-ward supervision was seen to be very beneficial for practical medical education (see table _Table 3_). Students found the video-based intervention. Nevertheless, the video material was seen to be more beneficial for technical _rather_ than communicative skills. However, the patient’s evaluated communication skills more highly than procedural skills. Feedback was evaluated very differently by students, with the tendency of generally being seen as less helpful for procedural skills compared to communicative skills. The supervisor’s feedback was generally seen as being beneficial to very beneficial, especially in regard to procedural skills. Moreover, in consequence of learning experience during video-based, on-ward supervision, students felt that they would be able to improve the skills which were supervised in the future. The medical ward setting was found to be seen to be very suitable for video-based, on-ward supervision with students feeling no discomfort while being filmed. Overall, students were willing to participate in more video-based, on-ward supervisions in future.

_Thank you very much for these important changes, most of which we included in the re-revised version of the manuscript. We additionally addressed your comment concerning the patients’ feelings while being filmed, however we did not remove the sentence “The supervisor’s feedback was generally seen as being beneficial to very beneficial, especially in regard to procedural skills.”, since it does NOT reflect the_
supervisor’s opinion but the students’ opinion about the value of the supervisor’s advice.

Page 13, lines 16-26:

“Acceptance ratings of the video-based, on-ward supervision are presented in Table 3. The model was well accepted by the participating students, leading to recommendations to other students, who subsequently volunteered to participate in future supervision. Overall, video-based, on-ward supervision was perceived as very beneficial for practical medical education (Table 3). Students found the video-based intervention more beneficial for technical than communicative skills. However, patients evaluated communication skills more highly than procedural skills. The supervisor’s feedback was generally seen as being beneficial to very beneficial, especially in regard to procedural skills. The medical ward setting was reported to be suitable for video-based, on-ward supervision, with neither students nor patients feeling discomfort while being filmed. Overall, students were willing to participate in more video-based, on-ward supervision in future.”

Comment 16:
Themes from student interviews

• Consider the following edit:

   During the interviews, all students appeared open-minded. With regard to the 5 qualitative analysis of the interviews, 4 categories including 9 themes were covered, as 6 defined below (see Table 4).

Thank you for editing this passage. We absolutely agree with you, since it was the opinion of the Chief investigator. We therefore removed this sentence as suggested.

Page 14, lines 5-6: “The qualitative analysis of the interviews covered four
categories incorporating nine themes, as defined below (Table 4).”

Comment 17:

Themes from student interviews

- Consider providing a rationale as to why you are including the number of quotations?

Thank you for your comment. You are right as generally the number of quotations is not necessarily required in terms of a sound qualitative research approach. Nevertheless, we do think that these pieces of information can be seen as additional statements about the relevance and emphasis of the various themes and therefore included them like it is often done in qualitative research reports.

Comment 18:

- Consider the following edits to make this section more concise:

Category 1: setting and realism of the situation

Theme “Realism of the situation”

As supervision (the intervention?) took place in patient's rooms in/on the actual medical wards, where the students were placed for work on a daily basis and in the patient's rooms using actual patients, students found the situation was perceived context as being highly realistic: “It felt like it usually feels when routinely performing an ECG recording in the same surroundings” was one quotation. The supervisors' choice of patients was considered to be more realistic than students picking the patients themselves, as they would have had to first ask them for permission (written informed consent was always obtained by the supervisor). Respectively, one student noted that “the patient knew beforehand what my task was and that I am
not his attending physician, that probably changed our relationship [i.e. to the patient]”.

*Thank you very much for the suggested changes of this passage, which were included in the manuscript. According to your comment, we clarified the last sentence of this passage by including more information as stated below:

Page 14, lines 20-26 - page 15, line 1: “As the intervention took place in patients’ rooms on medical wards, students found the context to be highly realistic: For example, ‘it felt like it usually feels when routinely performing an ECG recording in the same surroundings’. The supervisor’s choice of patients was considered to be more realistic than students choosing the patients themselves, as they would have had to first obtain permission (written informed consent was always obtained by the supervisor). One student noted that ‘the patient knew beforehand what my task was and that I am not his attending physician. That probably changed our relationship [that is to the patient], as the patient behaved more like an actor due to the more artificial situation’.”

**Comment 19:**

In consequence, “you have to perform [the history taking] properly, otherwise you will have to go back to the patient to ask the questions you forgot, which I don’t like.”

*Thank you for pointing out this typing error. We therefore corrected it:

Page 15, lines 6-10: “Compared with working with a patient already admitted and simply repeating history taking, having to actually admit a patient on the ward also increased the realism of the situation: ‘you have to perform [the history taking] properly, otherwise you will have to go back to the patient to ask the questions you forgot, which I don’t like’.”*
Comment 20:

Category 3; Student’ self-assessment
Theme “Communication skills”
• Consider restructuring this sentence. Meaning unclear: Most students felt self-confident during history taking, physical examination, and IV cannulation, stating to be usually able to build up good and trusting relationships with patients and reporting to feel no difference during supervision.

Thank you for this comment. We changed the sentence in order to clarify its meaning.

Page 16, lines 11-13: “Most students reported they felt confident about communicating during history taking, physical examination and IV cannulation, stating they were able to build good and trusting relationships with their patient.”

Comment 21:

• Consider explaining why this is a problem. Does it impact upon patient safety?
One student realized that she had “used her hands too much while talking, like some kind of sign language”, concluding that she should “get rid of that habit”.

Thank you for this comment. The student’s statement is important since it shows that by watching the video, students did not only manage to relate the supervisor’s feedback to the actual situation, but also started to reflect about topics which were not brought up by the supervisor in his feedback. Nevertheless, this specific student’s discovery about her gestures brought up aspects of her interactive competencies and gave rise to a reflection process about her non-verbal communication, that might not be relevant to
the patients’ safety, but of high importance in terms of patient-doctor interaction and empathy.

Comment 22:

Category 4: Relevance of feedback
Theme “Patient’s feedback”
• The patient’s layperson/layman perspective was seen as beneficial, highlighting “some aspects [the students] didn’t think of before”.

Thank you for this correction, we included it in the manuscript:
Page 17, lines 6-7: “The patient’s layperson perspective was seen as beneficial, highlighting ‘some aspects [the students] didn’t think of before’.”

Comment 23:

Theme “Supervisor’s feedback”
• Clarify role of supervisor/chief investigator as per previous feedback
The supervisor’s feedback was generally perceived as beneficial, especially in regard to procedural technical skills, giving them a frank analysis from a different and expert perspective.

Thank you for this comment. As mentioned above, there seems to be a misunderstanding regarding the role of our supervisor – who was NOT the chief investigator but a physician acting as supervisor in the described video-based supervisions. Considering our clarifications above, this passage shouldn’t be unclear any longer.
Comment 24:

• MD??
Overall, students preferred receiving the supervisor’s feedback before watching the video, as they could focus their attention on important points in consequence. “I find the combination [that is, i.e. MD’s feedback plus video-based feedback] very helpful. The patient’s feedback is likely to bring less in the specific situations, but the MD’s feedback in combination with the video feedback is very helpful, I think” was one quote.

Thank you for this comment. MD means “Medical Doctor”. Since this seemed to be confusing, we changed “MD” to “supervisor” (who was NOT the chief investigator, see above) in order to stick to our terms.

Page 17, lines 21-23: ‘I find the combination [that is the supervisor’s feedback plus video-based feedback] very helpful. The patient’s feedback is likely to bring less in the specific situations, but the supervisor’s feedback in combination with the video feedback is very helpful, I think’.”

Comment 25:

• Theme “Video-based feedback”
Video-based feedback was mostly positively received by students. Nevertheless, most students felt it was only beneficial as an addition to the previous oral feedback by the supervisor. “I self-reflect [upon my actions] a lot, but I experienced [my performance] in a different way thanks to the video”.

Thank you for this correction, which we included in the manuscript:
Page 18, lines 3-4: “I self-reflect [upon my actions] a lot, but I experienced [my performance] in a different way thanks to the video.”

Comment 26:

- Discussion
  To our knowledge, this pilot study is the first to describe an innovative approach for video-based, on-ward supervision. The implementation of this method in an on-ward setting was feasible and well accepted by both students and patients. Nevertheless, some additional resources are required in order to implement video-based, on-ward supervision into the educational routine, such as equipment and manpower to manage and coordinate the process to ensure a beneficial one-on-one learning experience.

Thank you for this correction, which has been changed in the manuscript:

Page 19, lines 15-18: “However, additional resources are required to implement video-based, on-ward supervision as part of the educational routine, such as acquiring the necessary equipment and personnel to manage and coordinate the process, thus ensuring a beneficial one-on-one learning experience.”

Comment 27:

- Your discussion does not address aim 2. Refer to previous feedback.

Thank you for bringing this up again. According to your suggestion, we removed this aim of the study from the last paragraph of the introduction section (see comment 1). Therefore, in correspondence with his previous
change to the manuscript, we now do not address this aim from the previous version of the manuscript in the discussion section any more.

Comment 28:

- Consider structuring your Discussion section according to your remaining aims:
  Evaluate the feasibility and acceptability of video based on-ward supervision via the assessment of process, resources, management, and scientific factors
  assess whether video-based on-ward supervision is perceived beneficial by participating final year students.

Thank you for this suggestion, clearly improving the readability of our manuscript. We rearranged the discussion accordingly:

Page 19, lines 8-18: “To our knowledge, the present pilot study is the first to describe an innovative approach for video-based, on-ward supervision. The implementation of this method in an on-ward setting was well accepted by both students and patients. Our analysis of the process of video-based, on-ward supervision and its determinants highlighted that participating students found sequential feedback most beneficial, as watching the video after hearing the supervisor’s feedback gave them opportunity to self-reflect on their performance. However, students considered the supervisor’s feedback the most beneficial element of supervision. In terms of feasibility, video-based, on-ward supervision was a viable supervision method. However, additional resources are required to implement video-based, on-ward supervision as part of the educational routine, such as acquiring the necessary equipment and personnel to manage and coordinate the process, thus ensuring a beneficial one-on-one learning experience.”
Comment 29:

- Participants regarded the use of real patients in the supervision sequence as particularly valuable and relevant. Previous interventions with video feedback mostly focused on the acquisition of communicative skills using standardized patients (SPs) [54].

Thank you for pointing out this grammatical mistake. We changed it in the re-revised version of the manuscript as suggested:

Page 20, lines 6-8: “Previous interventions with video feedback have mostly focused on the acquisition of communicative skills using standardised patients (SPs) [55].”

Comment 30:

- Hence, though the video-based approach might be more time-consuming (see Table 1) than classic supervision models, it does not require additional personnel.

Thank you for these changes, we included them in the re-revised version of the manuscript:

Page 21, lines 6-7: “Therefore, though a video-based approach might be more time-consuming (Table 1) than classic supervision models, it does not require additional personnel.”

Comment 31:

Conclusion and further direction for research

- Consider restructuring these sentences. Meaning unclear
Video-based, on-ward supervision seems to be a powerful tool for improving practical medical education, as long as it is combined with supervisory feedback. If done so, video-based supervision with individualized feedback has been successful in improving the development of clinical skills for final year medical students. To determine the added value of filming patient interactions, future research should aim at the objective assessment of the added benefit of the supervision program [17, 52] when integrating video-feedback, in terms of a justification study [58]. Moreover, so far it is unclear whether benefits drawn from video-based on-ward supervision are higher for some skills or procedures than for others.

Thank you for your comment and the suggested improvements to this passage. We included your suggested improvements and restructured the sentences:

Page 22, lines 2-8: “Our study found that video-based, on-ward supervision with individualised feedback was successful in improving the development of clinical skills of final year medical students. To determine the added value of filming patient interactions, future research should aim to objectively assess the added benefit to the supervision programme [17, 53] when integrating video-feedback, in terms of a justification study [59]. Moreover, it is unclear whether the benefits of video-based, on-ward supervision are higher for some skills or procedures than for others.”
We would like to thank you once again for offering us the opportunity to submit a re-revised version of our manuscript BMC Med Educ 1503916828147615. We appreciate you considering our article for publication and look forward to hearing from you soon.

With best regards,

Christoph Nikendei