PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Simulation based inter-professional education to improve attitudes towards collaborative practice: a prospective comparative pilot study in a Chinese medical center
AUTHORS	Yang, Ling-Yu; Yang, Ying-Ying; Huang, Chia-Chang; Liang, Jen-Feng; Lee, Fa-Yauh; Cheng, Hao-Min; Huang, Chin-Chou; Kao, Shou-Yen

VERSION 1 – REVIEW

REVIEWER	Dr Margot Skinner School of Physiotherapy University of Otago Dunedin 9054
REVIEW RETURNED	04-Dec-2016

GENERAL COMMENTS	The concept of the work is worthy but there are aspects of the manuscript that need to be revised and redefined in order to improve the emphasis on the justification for the study and the outcomes achieved. There are several areas throughout the manuscript where the grammar; singular/pleural; and present /past tense need to be reviewed and corrected. Some terminology used in the manuscript is not common or familiar to the reader and the authors have not described/defined the terms adequately e.g. benchmarking-sharing; implementing Diamond; seed instructors. In terms of the structure of the manuscript this needs reordering e.g. some definitions are discussed in the results; some method is described in the introduction. Some reworking including re-ordering and descriptions of terms applied needs to be undertaken to ensure that the reader is able to pick up the salient points and see the method, conclusions drawn and outcomes clearly. 1 Title – the current title is too wordy and includes terms that are not common, an abbreviation and too much detail about what is trying to be achieved in the study. It is suggested that the authors revise the title e.g. Simulation based interprofessional education to improve attitudes towards collaborative practice 2 Abstract Line 11 – the sentence would read better as follows: …successfully cultivate seed instructors responsible for improving … Line 15 rather than voluntary the suggested term to used is … volunteered to train…. Line 40/44 ….IPE courses significantly enhanced attitude… Did the authors mean to use the word significantly? If so more detail about the level for P should be included

	3 Strengths and limitations The past tense should be used throughout 4 Introduction Line 6 - it is suggested that the outcomes… learning with, from and about eachother….., are included along with the aims of IPE Line 22 - the term health professions is preferred over the term medical professions Line 28 - describe the term residents more fully Paragraph 2 - needs some rewording to make it clear that the various findings were from studies undertake by others not the authors of the present manuscript. Comment on the level of significance of the improvement found. Paragraph 3 – the authors referred to the study by Watters et al … implementing Diamond…… This section needs to be reworked as it cannot be assumed that readers are familiar with the Diamond. In fact the Diamond is first described in the Discussion (paragraph 2) and this section needs to be brought back into the introduction. Paragraph 4 - the term benchmarking-sharing is used here and subsequently throughout the manuscript, but the term is not described and is rather cumbersome – benchmarking would be adequate. Paragraphs 4 and 5 - should be revised to give some justification for the study to be undertaken and the proposed outcomes rather than describing what appears to be a reflection on part of the method. 5 Method Line 8-9 – It is good to include a flow chart. It is suggested that the flow chart (Figure 1) is enhanced further and numbers included e.g. the number of health professionals who were invited and the number who volunteered. Some of the detail written in the Method could then be reduced. Again there is reference to benchmarking-sharing and the Diamond DAA debriefing but no explanation is given so it makes the flow of reading and understanding difficult. Both the preparation workshops and simulation workshops could be summarised further e.g. the cases could be in a table – there does not seem to be a Figure 2 that is referred to on P8 line 48 - and more links made to the flowchart. Where does the table on p27 fit in? There is potential for the information contained in the section IPC attitudes measurements to also be in a table. The header would be better written as Measurements of IPC attitudes. 6 Results Line 5 …be seen in table 1. It is not clear from the tables whether the values that were significant when compared to another profession were all post values rather than pre values. P13 Line 53 inappropriate attitudes needs some explanation – do the authors mean the respondents did not understand what IPE was about or did not wish to use IPE? The authors should leave discussion and interpretation of the results to the discussion section 7 Discussion: It is suggested that the authors revise the formatting of the discussion and include details that explain processes e.g. the Diamond DAA in earlier sections and clearly summarise the findings of the study in relation to the aims at the beginning of the discussion. The strengths and limitations discussed are good but are a bit lost without a clear summary of the key findings to refer to.

	8 Conclusions The conclusion is the first place in which the authors had acknowledged the study was a pilot study. The sentence from line 16 would read better as: The results of this plot study are promising and suggest that a larger study ……….. 9 References They cover the field and are appropriate. 10 Tables and Figures Comments have been made above about the need to have greater clarity about which profession is being paired and which stage of the study. Figure 2 relates to results not method. The figures could be enhanced.

REVIEWER	Konrad Meissner MD Klinik für Anästhesiologie, Universitätsmedizin Greifswald, Greifswald, Germany
REVIEW RETURNED	27-Feb-2017

GENERAL COMMENTS	This is a very interesting study pertaining to the more and more emerging field of inter-professional education, which, unfortunately, lacks significant components of a scientific report. Though obviously thoroughly planned conducted, the study is not described in a way that enables easy reading and understanding of the study design, underlying motivation, or even of the study objectives. Much detail is given to rather irrelevant detail of the manuscript, while i.e. a straight hypothesis and justification of the study design is nowhere to be found. This puts quite some obstacles in the way of the reviewer, who clearly notices the devotion of the authors and a very dedicated team. The work would need some major overhaul in order to allow the understanding of what was done and why, before a meaningful suggestion could be made. It appears as if motivational aspects are overrated compared to measurable facts, and that there was no self-control (like before vs. after), but a cross-sectional design without control. It therefore appears not self-evident what the goal of the study was. In particular: p8 l10-17: What video clips are referred to here, and what do they teach? p8 l50-52: On what basis were scenarios designed? p12 l53-57: What are "inappropriate attitudes"? p14 l16-19: Which data support this statement, and how were these obtained? p15 l42-45: Why was there no control group? If there had not been a group debriefed without the "diamond method", how could one draw conclusions towards the effectiveness of this method? p15 l46 - p16 l18: A major problem with this manuscript is that it claims to have evaluated according to Kirkpatrick.

	However: (level 1) there are no data on the satisfaction of participants; (level 2) the use of questionnaires improves the motivational basis, but does not prove improved competencies; (level 3) the "multiplication" of knowledge by "seeding" is an important issue - however, the only data are from non-participants, and there are no data on whether or not any of the measures in fact improved the usage of newly acquired knowledge or skills; (level 4) an influence on the health care system is assumed by improved motivation. Whether or not this is true cannot be proven by means of the available data. Statistics: If one was to use sub-scales of questionnaires, is has to be shown first, that the sub-scales are consistent internally (Cronbachs alpha). more general remarks: As stated above, the flow of the study design is neither understandable from the text nor from the graph. Tables have to contain a description of what they show, i.e. means and standard deviations and so forth.

REVIEWER	Birgit Wershofen Institute for Medical Education University Hospital of LMU Munich, Germany
REVIEW RETURNED	28-Feb-2017

GENERAL COMMENTS	The article describes deliberate interprofessional educational interventions. The training of seed instructors - with consecutive interventions - is very complex and sometimes confusing what happened when, why. The description of all the different teaching methods takes very much place, focusing on one or two aspects with their results would be appropriate - especially to give more background and to discuss it deeper. However, the whole concept to cultivate an interprofessional approach in practice seems to be promising. I wish the authors continuing success in implementation of the training. My comments embraces general hints and additional notes on the attached file to improve the article. - There is a lack of definitions. It is not really clear, what you understand/embrace in your study with the terms: pre-simulation training, benchmarking-sharing, transference, sustainability. Please add criteria, explanations and underlying literature. - The aim to evaluate whether pre-simulation and benchmarking sharing strategy were able to successfully cultivate seed instructors for improving team members' IPC attitudes, is a complex aim and difficult to separate it from influencing factors. Your results give an overview that the participants have the impression (through their self-assessment) that they had improved their interprofessional skills - which is quite good. There is no comparison, that the pre-simulation training had an effect on 'more' interprofessional skills. Nevertheless, the pre-simulation training is useful, but it is not clear if the pre-simulation training or the whole intervention made the improvement.

	It is similar with the benchmarking-sharing: a further improvement of interprofessional skills can be explained by an additional/deepening training in interprofessional problemsolving. Did you want to demonstate the improvement of interprofessional skills in general or explicit on your choosen methods? I suppose, on the first aspect, because if you focus on the methods, a control group would be necessary. I recommend reconsidering the aim of the study and/or formulating the research question/hypothesis. - The introduction gives an good overview, why you decided to conduct such complex interventions. As an educator, I miss the underlying theory for interprofessional education. See Reeves and Hean (2013): Why we need theory to help us better understand the nature of interprofessional education, practice and care. DOI: 10.3109/13561820.2013.751293 or Hean et al. (2009) Learning theories and interprofessional education: a user's guide. DOI: 10.1111/j.1473-6861.2009.00227.x - The methods: The participants are described well; I would recommend adding a number of the approved study of the Ethic committee. You described clear the sequences with the assessment; the figure (missing the headline) helped to understand it. Explicit the IPC attitudes measurements are described well. The interesting link to the Kirkpatrick-evaluation should be introduced also in the methods part. - An important point for the assessment and statistics is: there is no specification how many facilitates/teachers rated the benchmarking-sharing, the precise criteria of the rating (table 3) (therefore the definition is required) and interrater reliability. At this point the question arises why you choose a presentation and not a simulation (like you trained before). - The results are described well, together with table 2. The table 3 requires revision (like mentioned above). The comments of the participants are interesting, but if you want to mention so many comments, a clustering is required with the main statements and a clear link within the discussion. - The background of the Diamond DAA debriefing should be in introduced earlier as central tool, also the Kirkpatrick-evaluation. I expect that the results are discussed, for example why the pharmacists and nurses performed so well, especially in comparison with the physicians. Additionally compared with the results of table 1, or consequences for improvement are considered, e.g. to confirm the chance to interprofessional skills and improvement in patient care with more robust measurements/outcomes, or to use the seed instructor training as a tool in the personal development plan. Another important aspect for discussion could be, why the nurses performed in the presentation not so well like the other two professions - in which way is it clear the all participants are trained in presentations skills? Probably the nurses are not trained and performed not so well like the others. Another point could be the culture that the physicians take over the role of the leadership. Summary: The interventions are well considered and interesting; however it requires a clear defined aim and an underlying theory as a red line in the study, especially to sort the assessment tools. To make it clear, some definitions are needed.

	The intervention is really complex; probably a reduction is useful and focusing on a special aspect (e.g. DAA- debriefing or result-description of the two questionaires) would be helpful. The reviewer also provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 1 – AUTHOR RESPONSE

Reply to Reviewer #1,s comments:
The concept of the work is worthy but there are aspects of the manuscript that need to be revised and redefined in order to improve the emphasis on the justification for the study and the outcomes achieved. There are several areas throughout the manuscript where the grammar; singular/pleural; and present /past tense need to be reviewed and corrected. Some terminology used in the manuscript is not common or familiar to the reader and the authors have not described/defined the terms adequately e.g. benchmarking-sharing; implementing Diamond; seed instructors. In terms of the structure of the manuscript this needs reordering e.g. some definitions are discussed in the results; some method is described in the introduction.
Some reworking including re-ordering and descriptions of terms applied needs to be undertaken to ensure that the reader is able to pick up the salient points and see the method, conclusions drawn and outcomes clearly.
Answer: Thanks for your constructive comments about our manuscript. In “revised” version, we had extensively re-ordering and re-editing all your suggested points. We agreed with your opinion that these modifications really improved our manuscript.

Comment 1: Title – the current title is too wordy and includes terms that are not common, an abbreviation and too much detail about what is trying to be achieved in the study. It is suggested that the authors revise the title e.g. Simulation based inter-professional education to improve attitudes towards collaborative practice

Answer: Thanks for your suggestions, the title had been changed as “Simulation based inter-professional education to improve attitudes towards collaborative practice” in the “revised” manuscript.

Comment 1: 2 Abstract
Line 11 – the sentence would read better as follows: …successfully cultivate seed instructors responsible for improving …

Answer: Thanks for your suggestion, the sentence had been changed as “…successfully cultivate seed instructors responsible for improving …” in the “revised” manuscript.

Comment: Line 15 rather than voluntary the suggested term to used is … volunteered to train….

Answer: Thanks for your suggestion, the sentence had been changes as “Initially, 34 physicians, 30 nurses and 24 pharmacists, whose volunteered to be trained as seed instructors, participate 3.5-hr preparation and 3.5-hr simulation workshops …” in the “revised” manuscript.

Comment: Line 40/44 ….IPE courses significantly enhanced attitude… Did the authors mean to use the word significantly? If so more detail about the level for P should be included

Answer: Thanks for your very kind and constructive comments. In our study, the “P value” of pre-/post- comparison of the attitude, self-reflection, transferences and sustainability of newly trained seed IPC instructors are scattered in different items of individual assessment form. Meanwhile, not every aspect had the pre-/post- comparison. Actually, this initial sentence “….IPE courses significantly enhanced attitude…” described the general effects of the training program. In “revised” version, the significantly had deleted to make to easier to read.

3 Strengths and limitations
Comment: The past tense should be used throughout

Answer: Thanks for your very kind and constructive comments. We had changed the verbs as past tense throughout this section. The changes area had been highlighted.

4 Introduction
Comment: Line 6 - it is suggested that the outcomes… learning with, from and about each other….., are included along with the aims of IPE
Answer: According to your opinion, the “… learning with, from and about each other…..” have been added as aims of IPE in “introduction” [page 4, paragraph 1, line 1-4].

Comment: Line 22 - the term health professions is preferred over the term medical professions

Answer: We agreed with your excellent suggestion. In “revised” version, the “health professions” had been replaced as “medical professions” throughout the manuscript.

Comment: Line 28 - describe the term residents more fully

Answer: Thanks for giving us this opportunity to clarify the “residents”. According to the reference 8, the residents indicated “junior medical residents”, the original “residents” had been replaced as “junior medical residents” in “revised” version [page 4, paragraph 2, line 1-3].

Comment: Paragraph 2 - needs some rewording to make it clear that the various findings were from studies undertake by others not the authors of the present manuscript. Comment on the level of significance of the improvement found.

Answer: Thanks for your very constructive suggestion. In “revised” paragraph 2 of introduction section, the various findings in previous studies had been clarified directly by the author's name. Additionally, the definite significant improvements in previous studies had been clarified in “revised” version [page 4, paragraph 1-2; page 5, paragraph 1].

Comment: Paragraph 3 – the authors referred to the study by Watters et al … implementing Diamond…… This section needs to be reworked as it cannot be assumed that readers are familiar with the Diamond. In fact the Diamond is first described in the Discussion (paragraph 2) and this section needs to be brought back into the introduction.

Answer: Thanks for your very constructive suggestion. In “revised” paragraph 3 of “introduction” section, the introduction of “Diamond” in Watters et al. study had been rework to help familiar with “Diamond”. According to your suggestion, the description of “Diamond” in Discussion (paragraph 2) had moved to “introduction” and “method” section as below “After IPC clinical scenario video watching in preparation (T1) workshops and actual inter-professional simulation activities in simulation (T2) workshops, the Diamond Description-Analysis-Application (DAA) debriefing were used to involve all participants.

The “description” step involving ‘description’ of each profession IPC performance in simulation scenario, the more challenging “analysis” and “application” steps involving ‘how did participants feel about each profession IPC performance in simulation scenario?’ and “how participants may apply the learnt knowledge from IPC simulation scenarios in their own clinical practice” [page 7, page 1]

Comment: Paragraph 4 - the term benchmarking-sharing is used here and subsequently throughout the manuscript, but the term is not described and is rather cumbersome – benchmarking would be adequate.

Answer: Thanks for giving us this opportunity to clarify the “benchmarking-sharing”. Benchmarking, a good indicator of organization seriousness about quality, is a continuous quality improvement approach. Healthcare benchmarking involves the structural sharing of qualitative good collaborative clinical practice [Ellis J. All inclusive benchmarking. J Nurs Manag. 2006;14(5):377-83]. Healthcare benchmarking provides opportunity for inter-professional participants to learn from others and develop innovative collaborative clinical care [Ellis J. Sharing the evidence: clinical practice benchmarking to improve continuously the quality of care. J Adv Nurs. 2000;32(1):215-25; Bland M. North West Clinical Practice Benchmarking Group: Principles, processes and evaluations. J Res Nurs 2001;6(2); Brit J Healthc Manag 1995;14:705-707]. In order to provide opportunity for inter-professional participants to learn from others and develop innovative collaborative clinical care, presenter gives their success examples of beside IPE/IPC in benchmarking. In “revised” manuscript, the term “benchmarking” is explained and the “IPC benchmarking” had used throughout the whole manuscript. New references 16-17 for benchmarking and description about “benchmarking” had been included in “revised” version [page 5,paragraph 3, line 8-12].

Comment: Paragraphs 4 and 5 - should be revised to give some justification for the study to be undertaken and the proposed outcomes rather than describing what appears to be a reflection on part of the method.

Answer: Thanks for your very constructive suggestion. In “revised” paragraph 4 and 5 of “introduction” section, the justification for the study to be undertake and the proposed outcomes had been included [page 5, paragraph 2-3]. Meanwhile, we had avoided this part as a reflection on part of method in “revised” version.

5 Method
Comment: Line 8-9 – It is good to include a flow chart. It is suggested that the flow chart (Figure 1) is enhanced further and numbers included e.g. the number of health professionals who were invited and the number who volunteered. Some of the detail written in the Method could then be reduced. Again there is reference to benchmarking-sharing and the Diamond DAA debriefing but no explanation is given so it makes the flow of reading and understanding difficult.

Answer: Thanks for your very constructive suggestion about the flow chart. As mentioned in our “original” manuscript, all participants in our study are volunteered. In the revised version, the case numbers of three professions had included in Figure 1. Moreover, the explanation of “Diamond DAA” and “benchmarking” are included in “introduction, methods and discussion” section as well as “Figure and Legends” according to your and other two reviewers requests [page 4, paragraph 3, line 9-12; page 5, paragraph 1, line 1-3; page 7, paragraph 1].

Comment: Both the preparation workshops and simulation workshops could be summarised further e.g. the cases could be in a table – there does not seem to be a Figure 2 that is referred to on P8 line 48 - and more links made to the flowchart. Where does the table on p27 fit in?

Answer: Thanks for your very constructive suggestion about the Fig. 2. In the “revised” Figure 2, detail information including cases numbers, activities and time-sequences were included as flow chart. Meanwhile, the original information in table of p27 had been incorporated into the “revised" Fig. 2.

Comment: There is potential for the information contained in the section IPC attitudes measurements to also be in a table. The header would be better written as Measurements of IPC attitudes.

Answer: Thanks for your very constructive suggestion and we had changed the header as “Measurements of IPC attitudes”. In our study, we measured the participants IPC attitudes with Interdisciplinary education perception scale (IEPS), Attitudes Toward Health Care Teams Scale (ATHCTS) and single open-end question. Actually, the detail item and description for the IEPS and ATHCTS had included as supplement Table 1 and 2 in our “original” version. Following your great suggestions, we simply the introduction of these two scales in “methods” section of “revised” manuscript, Meanwhile, the pre-intervention and post-intervention random sampling survey questions had been listed as supplement Table 3.

6 Results

Comment: Line 5 …be seen in table 1.
It is not clear from the tables whether the values that were significant when compared to another profession were all post values rather than pre values.

Answer: As shown in the method of “original” version. The participants volunteered to be trained (n=94) were invited to join the pilot benchmarking-enhanced diamond-based IPE simulation courses to improve their IPC attitude. After excluding six participants due to incomplete questionnaires, a final total of n=88 individuals were included in this study. They consisted of physicians (n=34), nurses (n=30) and pharmacists (n=24). Notably, only the data of 88 participants were included for various final analysis [page 6, paragraph 1]. So, the Table 1 is the comparison for the baseline characteristics of all participants. In “revised” Table 1 and “results” section, the wordings of this part were made more specific to show this information as below “Notably, a lower number of the physicians compared to nurses and pharmacists had the experience of receiving previous IPE training. In comparison with nurses and pharmacists, lower percentage of physicians belong to the high-exposure (>80% exposure to monthly IPC meeting/1-year) group, which indicated physician's have less experiences of previous IPC meeting participation during their last 1-year of clinical works” [page 11, paragraph 1]. Thanks for giving us this opportunity to clarify this possible confusing point.

Comment: P13 Line 53 inappropriate attitudes needs some explanation – do the authors mean the respondents did not understand what IPE was about or did not wish to use IPE?

Answer: We are sorry for using the misleading term “inappropriate attitudes to IPC”. We had re-written this sentence according to the results of Fig. 3C as below “Among the randomly sampled team members, pre-intervention survey (Tpre) revealed that IPC attitudes across physicians, nurses and pharmacists, are needed to be improved on the aspects of IPC' familiarity, understanding of other profession's roles, benefits of IPC on quality of patient-centered care (figure 3C). Across three professions, after seed instructors began promoting IPC at workplace, post-intervention (Tpost, 6th month) randomly sampled team member's reported that they were familiar with IPC skills, agreed that IPC help to understand the role of other team members, agreed that IPC improved patient care quality and agreed that IPC improved team efficiency…” in “revised” version” [page 13, paragraph 2]. Thanks for giving us this opportunity to clarify this point.

Comment: The authors should leave discussion and interpretation of the results to the discussion section

Answer: Thanks for your very constructive suggestion. According to your suggestion, some discussions and interpretation of the results at this parts had been moved to the discussion section.

7 Discussion
Comment: It is suggested that the authors revise the formatting of the discussion and include details that explain processes e.g. the Diamond DAA in earlier sections and clearly summarise the findings of the study in relation to the aims at the beginning of the discussion.

Answer: Thanks for your very constructive suggestion about the discussion section. According to your suggestion, the detail processes of Diamond DAA had further discussed according to the "revised Figure 2", "introduction" and "method" sections. Meanwhile, this part had been rewritten by summarizing findings of the study in relation to the aims at the beginning of the discussion.

Comment: The strengths and limitations discussed are good but are a bit lost without a clear summary of the key findings to refer to.

Answer: Thanks for your very constructive suggestion about the parts of "strengths and limitations" in the discussion section. According to your suggestion, the key findings in our study had been incorporated into this part [page 14, paragraph 4-5; page 15, paragraph 1-2].

8 Conclusions
Comment: The conclusion is the first place in which the authors had acknowledged the study was a pilot study. The sentence from line 16 would read better as: The results of this plot study are promising and suggest that a larger study ………..

Answer: Thanks for your very constructive comments about this parts. According to your suggestion, the sentence had been modified as "The results of this plot study are promising and suggest that a future large-scale study…". Meanwhile, the term of "pilot study" had mentioned in the "abstract" and "methods" sections of our "revised" manuscript. [page 16, paragraph 3].

9 References
Comment: They cover the field and are appropriate.

Answer: Thanks for your positive comments about our references.

10 Tables and Figures
Comment: Comments have been made above about the need to have greater clarity about which profession is being paired and which stage of the study. Figure 2 relates to results not method. The figures could be enhanced.

Answer: Thanks for your constructive comments about our Tables and Figures. According to your comments, we had included one new Figure 2 for the cases numbers and flow chart of preparation and simulation workshops. Meanwhile, the cases number ration across three professions during each small-group activities had included in new Fig. 2. The tables had also checked and adjusted following your suggestion in "revised" version. Especially, the detail of data collection had been included in methods and Table 3. A new table 4 was included to show the inter-rater reliability of Table 3.

Reply to Reviewer #2,s comments:
Comment: This is a very interesting study pertaining to the more and more emerging field of inter-professional education, which, unfortunately, lacks significant components of a scientific report. Though obviously thoroughly planned conducted, the study is not described in a way that enables easy reading and understanding of the study design, underlying motivation, or even of the study objectives. Much detail is given to rather irrelevant detail of the manuscript, while i.e. a straight hypothesis and justification of the study design is nowhere to be found. This puts quite some obstacles in the way of the reviewer, who clearly notices the devotion of the authors and a very dedicated team. The work would need some major overhaul in order to allow the understanding of what was done and why, before a meaningful suggestion could be made. It appears as if motivational aspects are overrated compared to measurable facts, and that there was no self-control (like before vs. after), but a cross-sectional design without control. It therefore appears not self-evident what the goal of the study was.

Answer: Thanks for your important comments about our manuscript. According to your and other reviewer suggestions, we had adjusted the flow of our manuscript to emphasize the study design, rationales of study, study objectives and hypothesis and justification for study. Meanwhile, we had re-edited our manuscript carefully to make it easier to read and understanding. Especially, the strength and limitation of our study had been re-organized in “revised” version. Moreover, the Figure 1 had adjusted to show the flow of whole study and new Figure 2 was included to show the details of preparation and simulation workshops. In “revised” Tables, especially Table 2-3, the details description of data (mean SD) and what we show had included. A new table 4 was included by reviewer 3 request to show inter-rater reliability in Table 4. Finally, the results and discussion were re-arranged to emphasize the key findings of our study. Especially, the strength and limitation of our study had been re-organized in “revised” version. During the process of this revision, we had gone through the whole manuscript repeatedly to make sure it properly displays the whole picture of our study. Thanks again for giving us this opportunity to improve or manuscript.

In particular:
Comment: p8 l10-17: What video clips are referred to here, and what do they teach?

Answer: Thanks for your constructive comments about the video clips used in our study. As mentioned in our “original” methods section [page 7, paragraph 3], these three video clips consisted of simulated examples of IPC-based care. Notably, the scenario of IPC examples in these three video clips were according to the published research at 2012 [original reference 11]. In fact, we had used these three IPC scenarios since 2013 for 1.5-year with some revisions by educational committee. At the end of 2014, these three IPC scenarios had been made into video clips for IPE. As mentioned in our “original” manuscript, these three 10-minutes video clips provided a basis for post-video watching discussion that led by two inter-professional educators. In “revised” version, these critical points had been clarified [page 7, paragraph 2, line 2-4].

Comment: p8 l50-52: On what basis were scenarios designed?

Answer: Thanks for your constructive comments about the design of our scenarios. In fact, we have regularly monthly IPE across different professions in our institution for years. The clinical scenario used in our study is according to the published case in the reference 12 of our manuscript. This scenario was chosen because it incorporates the care of multi-disciplines including physician, nurses, pharmacists, the respiratory therapists (RT), etc. The scenario had been dry ran and modified by education committee members including faculties from different professions before formally used in our program. As mentioned in our manuscript [page 7, paragraph 3], participants from three professions involved equally to assess, treat and take care of patients collaboratively.

Comment: p12 l53-57: What are "inappropriate attitudes"?

Answer: We are sorry for using the misleading term “inappropriate attitudes to IPC”. We had re-written this sentence according to the results of Fig. 3C as below “Among the randomly sampled team members, pre-intervention survey (Tpre) revealed that IPC attitudes across physicians, nurses and pharmacists, are needed to be improved on the aspects of IPC' familiarity, understanding of other profession's roles, benefits of IPC on quality of patient-centered care (figure 3C). Across three professions, after seed instructors began promoting IPC at workplace, post-intervention (Tpost, 6th month) randomly sampled team member's reported that they were familiar with IPC skills, agreed that IPC help to understand the role of other team members, agreed that IPC improved patient care quality and agreed that IPC improved team efficiency…” in “revised” version” [page 13, paragraph 2]. Thanks for giving us this opportunity to clarify this possible confusing point.

Comment: p14 l16-19: Which data support this statement, and how were these obtained?

Answer: We are sorry for using the misleading sentence “Notwithstanding the above findings, the randomly sampled team members across the three professions agreed both pre-intervention and post-intervention that IPC improves patient-centered care” to describe the results in Fig. 3C. Our “original” sentence aims to reported that the agreements of random sampled team members' to the statement of “IPC helps provide patient-centered care” are excellent both during the pre-intervention (Tpre) and post-intervention (Tpost) surveys. In other words, this aspect of IPC attitude, among team member across physicians, nurses and pharmacists, do not need not to be improved according to the baseline (Tpre) data. In “revised” version, this sentence had adjusted as “Interestingly, the agreements of random sampled team members', across three professions, to the statement of “IPC helps provide patient-centered care” are excellent both during the pre-intervention (Tpre) and post-intervention (Tpost) surveys.” [page 13, paragraph 2, line 1-6].

Comment: p15 l42-45: Why was there no control group? If there had not been a group debriefed without the "diamond method", how could one draw conclusions towards the effectiveness of this method?

Answer: Thanks for your very constructive opinion for the issue about the “control group”. Primarily, our cross-sectional comparative pre-/post-study aims to solve the unsolved problems in previous studies [reference 6-12] and our institution by addition of benchmarking-based reflection in diamond-based IPE simulation. In fact, the effectiveness of “diamond debriefing” in the simulation-based IPE had been confirmed in previous studies [reference 11&12].
Between the pre-course (T1) and post-course (T2) IEPS and ATHCTS-based self-assessment, all participants from three professions were trained by diamond debriefing-based preparation and simulation workshops. Then, at the third month (T3) of our program, participants were divided into group 1 (benchmarking) and group 2 (regular) to assess the effectiveness of “benchmarking” approach. In order to ensure trainings' efficiency and protect all participants' learning rights, both group 1 and group 2 participants received diamond method-based workshops between T1 and T2 in our study. Both IEPS and ATHCTS have been suggested as excellent tools to determine the effect of IPE among medical professionals [reference 17-20]. In this study, we used IEPS and ATHCTS to assess the effectiveness of new IPE programs serially. Accordingly, the comparison of T1 and T2 assessments can, at least, evaluate the effectiveness of diamond method among three professions, whose have different educational backgrounds and healthcare' missions.
We agree with your opinion that another control group, without the “diamond method”, is necessary to assess the effectiveness of the “diamond method” in future study. In our “revised” version, we had listed “lack of the control group” as the limitation of our study [page 14, paragraph 2-3, page 15, paragraph 2].

Comment: p15 l46 - p16 l18: A major problem with this manuscript is that it claims to have evaluated according to Kirkpatrick. However: (level 1) there are no data on the satisfaction of participants; (level 2) the use of questionnaires improves the motivational basis, but does not prove improved competencies; (level 3) the "multiplication" of knowledge by "seeding" is an important issue - however, the only data are from non-participants, and there are no data on whether or not any of the measures in fact improved the usage of newly acquired knowledge or skills; (level 4) an influence on the health care system is assumed by improved motivation. Whether or not this is true cannot be proven by means of the available data.

Answer: Thanks for your very constructive comments about the Kikpatrick-based evaluation of our study. We are agreed with your opinion that our pilot study only matched parts of the Kirkpatrick levels. In our study, we had re-written this part according to your specific suggestion as below "Primarily, this new simulation-based IPE program was intended to solve challenges, which are lack of continuous training and follow-up, of previous studies6-12 and our institution. Indeed, there were some limitations in our study that need to be improved in future study before concluding the effectiveness of this pilot benchmarking-enhanced diamond-based IPE program on medical professionals' IPC practices and outcomes. For a training program, Kirkpatrick level 1 and 2 were the evaluation of "participants satisfaction" and "participants increase confidence, knowledge and performance". Using IEPS and ATHCTS, our study revealed the significant improvements in participant's motivation and IPC attitude across three professions after receiving training of our new IPE program. Nonetheless, the participant's satisfaction of new program and the degree of improvement in participant's competencies were not evaluated in our study. Kirkpatrick level 3 and 4 in our study were the "multiplication" of knowledge by "seeding" and influence on the health care system. According to the real presented example in benchmarking of our study, facilitators' gave high ratings for their agreement to participants' degree of appropriately transfer and sustainably practice the learnt IPC skills to clinical works. The sequential improvements in participants' self-assessed IPC attitude scores were also noted in our study. Moreover, the comparison of pre-intervention and post-intervention random sampled team members, whose are non-participants, revealed the general improvement in their IPC attitude and motivation. However, for this part, the usage of newly acquired knowledge or skills by medical professionals of our institution was not evaluated in our study. Taken together, our pilot study only achieved parts of the goals of a training program according to the Kirkpatrick 1-4 levels" [page 14, paragraph 1-3].

Comment: Statistics.
If one was to use sub-scales of questionnaires, is has to be shown first, that the sub-scales are consistent internally (Cronbachs alpha).

Answer: Thanks for your very constructive comments about the consistent internally (Cronbachs alpha) of the subscale of interdisciplinary education perception scale (IEPS) and Attitudes Toward Health Care Teams Scale (ATHCTS) used in our study. In fact, previous studies [reference 19-21] had suggested that both IEPS and ATHCTS are excellent tools to determine the effectiveness of practice-based IPE among medical professionals. Tests assessing the reliability and validity of these approaches have demonstrated that each subscale of IEPS and ATHCTS is a strong measure of its respective underlying IPC concept that is crucial to medical professionals. In this study, the internal consistency (Cronbach's alpha) of individual subscales of IEPS/ATHCTS and themselves had been validated before formally used.

In “revised” version, the internal consistency (Cronbach's alpha) of individual subscales of IEPS/ATHCTS and themselves were included as below “We assessed internal consistency of the IEPS/ATHCTS and its subscales by computing Cronbach's alpha coefficients. Notably, the Cronbach's alpha of IEPS overall scales (0.721), competency and autonomy subscales (0.69), Perceived need for cooperation subscales (0.73), Perception of actual cooperation subscales (0.85) and Understanding others values subscales (0.662) were good. Meanwhile, the Cronbach's alpha of ATHCTS overall scales (0.719), Quality of care delivery subscales (0.683), Patient-centered care subscales (0.801) and Team efficiency subscales (0.724) were acceptable” [page 11, paragraph 2].”.

more general remarks
Comment:As stated above, the flow of the study design is neither understandable from the text nor from the graph. Tables have to contain a description of what they show, i.e. means and standard deviations and so forth.

Answer: Thanks for your important comments about the flow of study design in our manuscript. According to your and reviewer 1&3' suggestions, we had adjusted the flow of our manuscript to emphasize the study design, rationales of study, study objectives and hypothesis and justification for study. Moreover, the Figure 1 had adjusted to show the flow of whole study and new Figure 2 was included to show the details of preparation and simulation workshops. In “revised” Tables, especially Table 2-3, the details description of data (mean SD) and what we show had included. A new table 4 was included by reviewer 3 request to show inter-rater reliability in Table 4. Finally, the results and discussion were re-arranged to emphasize the key findings of our study. Especially, the strength and limitation of our study had been re-organized in “revised” version. Thanks again for giving us this opportunity to improve our manuscript.

Reply to Reviewer #3,s comments:
Comment: The article describes deliberate interprofessional educational interventions. The training of seed instructors - with consecutive interventions - is very complex and sometimes confusing what happened when, why. The description of all the different teaching methods takes very much place, focusing on one or two aspects with their results would be appropriate - especially to give more background and to discuss it deeper. However, the whole concept to cultivate an interprofessional approach in practice seems to be promising. I wish the authors continuing success in implementation of the training.

Answer 1:Thanks for your general constructive comments about our manuscript. In revised version, we had extensively reordering and re-editing all your suggested points. We agreed that these modifications really improved our manuscript.

My comments embraces general hints and additional notes on the attached file to improve the article.

Comment: There is a lack of definitions. It is not really clear, what you understand/embrace in your study with the terms: pre-simulation training, benchmarking-sharing, transference, sustainability. Please add criteria, explanations and underlying literature.

Answer: According to your suggestions, the definition, criteria, explanation and underlying literature for the pre-simulation training, benchmarking-sharing, transference, sustainability had been included in “revised” manuscript. According to previous study [reference 13, BMC Med Educ 2015;15:98], pre-simulation training indicated the preparation workshop to build up the participants basal IPE/IPC concepts [page 7, paragraph 2, line 2]. The definition and literatures of benchmarking were also included [page 8, paragraph 3, line 7-13]. Benchmarking, a good indicator of organization seriousness about quality, is a continuous quality improvement approach.

Healthcare benchmarking provides opportunity for inter-professional participants to learn from others and develop innovative collaborative clinical care [reference 16,17]. In small-group benchmarking of our study, presenters were asked to give their four examples of appropriately transfer and sustainably practice learnt IPC (coordination, communication, teamwork and leadership) skills at workplace. Presenters were asked to present their four examples according to the sequences of items listed in Table 3. All facilitators consent about how to assess their agreement about the degree of participants appropriately transfer and sustainably practice of the trained IPC skills at workplace by the real examples in their benchmarking presentation (Table 3). During benchmarking, two facilitator's rated their agreement to the presenters' degree of appropriately transfer and sustainably practice of the learnt IPC skills at workspace by preset checklist (Table 3). There are lots of literatures about transference and sustainability in medical educations [GMS J Med Educ 2016;33; MJA 2012;196(9);Sustainability 2015;7:2768-86;BMC Health Services Research 2012;12:235]. In our study, the terms of “transference and sustainability” were defined as whether participants appropriately transfer and sustainably practice of the trained “coordination, communication, teamwork, and leadership” IPC skills at workplace. In “revised” version, above terminology had been clarified throughout the whole manuscripts.

Comment: The aim to evaluate whether pre-simulation and benchmarking sharing strategy were able to successfully cultivate seed instructors for improving team members' IPC attitudes, is a complex aim and difficult to separate it from influencing factors. Your results give an overview that the participants have the impression (through their self-assessment) that they had improved their interprofessional skills - which is quite good. There is no comparison, that the pre-simulation training had an effect on 'more' interprofessional skills. Nevertheless, the pre-simulation training is useful, but it is not clear if the pre-simulation training or the whole intervention made the improvement.

Answer: Thanks for your very constructive comments about the role of pre-simulation training (preparation workshop) in our study. Similar to the diamond methods [reference 13, Watters et al. study], pre-simulation workshop [reference 15, Darlow et al. study] had been proved to increase the effectiveness of IPE simulation courses among medical professionals. Primarily, this new simulation-based IPE program was intended to solve challenges, which are lack of continuous training and follow-up, of previous studies [ref. 6-12] and our institution. Between the pre-course (T1) and post-course (T2) IEPS and ATHCTS-based self-assessment, all participants from three professions were trained by diamond-based preparation and simulation workshops. Then, at the third month (T3) of our program, participants were divided into group 1 (benchmarking) and group 2 (regular) to assess the effectiveness of “benchmarking” approach. In order to ensure trainings' efficiency and protect all participants' learning rights, both group 1 and group 2 participants received diamond-based preparation and simulation workshops between T1 and T2 in our study. Both IEPS and ATHCTS have been suggested as excellent tools to determine the effect of IPE among medical professionals [reference 17-20]. In this study, we used IEPS and ATHCTS to assess the effectiveness of new IPE programs serially. Accordingly, the comparison of T1 and T2 assessments can, at least, evaluate the effectiveness of diamond-based preparation and simulation workshops among three professions, whose have different educational backgrounds and healthcare' missions.
We agree with your opinion that another control groups, without the “diamond-methods” or “preparation workshops”, are necessary to re-confirm the effectiveness of the them on IPE simulation courses” in future studies. In our “revised” version, we had listed “lack of the control groups” as the limitation of our study as below “Actually, the positive effects of diamond debriefing and preparation workshop had been reported in previous simulated-based IPE studies.13--15 In our study, the lack of control groups without diamond method and preparation workshop, to exclude more effects of them on inter-professional skills, may still limit us to conclude the definite effectiveness of benchmarking-enhanced IPE on training” [page 16, paragraph 4].

Comment: It is similar with the benchmarking-sharing: a further improvement of interprofessional skills can be explained by an additional/deepening training in interprofessional problem solving. Did you want to demonstrate the improvement of interprofessional skills in general or explicit on your choosen methods? I suppose, on the first aspect, because if you focus on the methods, a control group would be necessary. I recommend reconsidering the aim of the study and/or formulating the research question/hypothesis.

Answer: Thanks for your very constructive comments about the "benchmarking" in our study. It really helps us rethinking about our manuscript. Benchmarking, a good indicator of organization seriousness about quality, is a continuous quality improvement approach. Healthcare benchmarking provides opportunity for inter-professional participants to learn from others and develop innovative collaborative clinical care [reference 16,17]. In small-group benchmarking of our study, presenters were asked to give their four examples of appropriately transfer and sustainably practice learnt IPC (coordination, communication, teamwork and leadership) skills at workplace. Presenters were asked to present their four examples according to the sequences of items listed in Table 3. All facilitators consent about how to assess their agreement about the degree of participants appropriately transfer and sustainably practice of the trained IPC skills at workplace by the real examples in their benchmarking presentation (Table 3). During benchmarking, two facilitator's rated their agreement to the presenters' degree of appropriately transfer and sustainably practice of the learnt IPC skills at workspace by preset checklist (Table 3). According to your suggestion, we had re-considered and re-formulated the aims, research question and hypothesis of our study to demonstrate the general improvement in inter-professional skills of participants and their team member by benchmarking approach.
We agree with your opinion that controls groups are necessary in future studies to assess the effectiveness of the benchmarking on IPE simulation courses. In our "revised" version, we had listed "lack of the control group" as the limitation of our study [page 15, paragraph 1-2].

Comment: The introduction gives a good overview, why you decided to conduct such complex interventions. As an educator, I miss the underlying theory for interprofessional education. See Reeves and Hean (2013): Why we need theory to help us better understand the nature of interprofessional education, practice and care. DOI: 10.3109/13561820.2013.751293 or Hean et al. (2009) Learning theories and interprofessional education: a user's guide. DOI: 10.1111/j.1473-6861.2009.00227.x

Answer: Thanks for your very constructive and helpful comments about the background for the introduction of inter-professional education. In our "revised" version, the two your suggested references 2&3 and the below sentence "Two key family of learning theory including behaviorism and constructivism had been applied to the curriculum design of IPE. It had been reported that learning theories for IPE are not mutually exclusive. In fact, both theorists agree that inter-professional learning "by doing" and learner centeredness are key" had been included [page 4, paragraph 1, line 2-7].

Comment: The methods: The participants are described well; I would recommend adding a number of the approved study of the Ethic committee. You described clear the sequences with the assessment; the figure (missing the headline) helped to understand it. Explicit the IPC attitudes measurements are described well. The interesting link to the Kirkpatrick-evaluation should be introduced also in the methods part.

Answer: Thanks for your constructive comments about the methods of our study. Following your suggestions, the number of the approved study of the Ethic Committee was included in "revised" version. The headline had been included in the Figure and Legends for each Figure. Following your suggestion the Kirkpatrick-based analysis of the outcomes of our new IPE program had been explained in the "method" and "discussion" sections of "revised" version [page 9, paragraph 3, line 1-2; page 15, paragraph 2].

Comment: An important point for the assessment and statistics is: there is no specification how many facilitates/teachers rated the benchmarking-sharing, the precise criteria of the rating (table 3) (therefore the definition is required) and interrater reliability. At this point the question arises why you choose a presentation and not a simulation (like you trained before).

Answer: Thanks for your constructive comments about the assessment and statistics in Table 3. Following your suggestions, the detail for rating participants benchmarking was included in Table 3. The details were included in our "method" section as mention below.
"-In small-group benchmarking, presenters were asked to give their four examples of appropriately transfer and sustainably practice learnt IPC (coordination, communication, teamwork and leadership) skills at workplace. Presenters were asked to present their four examples according to the sequences of items listed in Table 3. All facilitators consent about how to assess their agreement about the degree of participants appropriately transfer and sustainably practice of the trained IPC skills at workplace by the real examples in their benchmarking presentation (Table 3). During benchmarking, two facilitator's rated their 5-point Likert's-scale-based agreement to the presenters' degree of appropriately transfer and sustainably practice of the learnt IPC skills at workspace by preset checklist (Table 3). Sequentially, benchmarking' example 1 for item 1-1&1-2, example 2 for item 2-1&2-2, example 3 for item 3-1&3-2, example 4 for item 4-1&4-2 were presented. Facilitator's degree of agreement to presenters' performance were rated by 5-point Likerts scale-based (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). By consensus meeting, facilitators rate their agreement to the items 1-1 and 1-2 according to the example 1 of presenter, items 2-2 and 2-2 from example 2, item 3-1 and 3-2 from example 3, items 4-1 and 4-2 from example 4 in separate rooms. The results in Table 3 were averaged data of ratings completed by two facilitators for presenter's performance of each item. Finally, the data in Table 3 were compared between three professions.
-Meanwhile, the inter-rater reliabilities of benchmarking rating by facilitators in different sessions were analyzed with Kappa statistics. The results were included in a new Table 4. Notably, the inter-rater reliability (Kappa statistics) on the items used to assess whether participants appropriately transfer and sustainably practice the learnt IPC skills by benchmarking facilitators were good.
-For your comments about why we choose a presentation and not a simulation in benchmarking. In our "original" study, the post-course benchmarking aims to stimulate presenters' motivation to transfer and practice learnt IPC skills at workplaces. In order to rating their continuous IPC promotion at workplaces, the presentations were asked to undergo with the pre-set format to match the items of rating scales in Table 3. So, within 3-month of post-course training period, presenters need to transfer and practice learnt IPC skills in their team as well as undergoing the self-reflection process.
-We agreed with your opinion that benchmarking simulation is also a good way to follow-up the effectiveness of IPE courses. In future study, we can ask participants to construct a simulation teams at follow-up demonstration to show how they appropriately transfer and sustainably practice learnt IPC skills at workplace. Thanks for your excellent suggestion. Above discussion had been included in "revised" version [page 8, paragraph 3, Table 3 and 4].

Comment: The results are described well, together with table 2. The table 3 requires revision (like mentioned above). The comments of the participants are interesting, but if you want to mention so many comments, a clustering is required with the main statements and a clear link within the discussion.

Answer: Thanks again for your comments about Table 2,3, and comments from participants. In "revised" version, the Table 3 had been revised according to your suggestion. Additionally, the comments from participants had been clustering with main statement and link with discussion [page 12].

Comment: The background of the Diamond DAA debriefing should be in introduced earlier as central tool, also the Kirkpatrick-evaluation. I expect that the results are discussed, for example why the pharmacists and nurses performed so well, especially in comparison with the physicians. Additionally compared with the results of table 1, or consequences for improvement are considered, e.g. to confirm the chance to interprofessional skills and improvement in patient care with more robust measurements/outcomes, or to use the seed instructor training as a tool in the personal development plan.

Answer: Thanks for your comments about Diamond DAA debriefing and Kirkpatrick-evaluation. Following your and other reviewers important comments, the background of “Diamond DAA debriefing and Kirkpatrick-evaluation” had been introduced earlier and discussed later in our revised manuscript [page 4, paragraph 3, line 9-12; page 5, paragraph 1, line 1-3;page 9, paragraph 3, line 1-2; page 14, paragraph 1; page 15, paragraph 2; page 16, paragraph 1].

Thanks for your very important comments about the better performance (Table 2) of pharmacists and nurses than physicians. We agreed with your opinion that from the Table 1, higher percentage of pharmacists (43,45%) and nurses (35,36%) had experience of receiving previous IPE training and higher frequency of exposure to IPC meeting during their last 1-yr of clinical works that among physicians (14,15%). Through real examples in benchmarking presentation, the facilitators agreement for the degree of participants appropriately transfer and sustainably practice leant “communication and teamwork” skills at workplace were significantly higher among pharmacists and nurses than that among physicians (Table 3). Notably, the core elements in the constructive assessment tools IEPS and ATHCTS used in our studies were more focused on “communication and teamwork” than “coordination and leadership” skills.” That might be the reason that pharmacists and nurses seem to perform better than physicians in Table 2 results. Nonetheless, the facilitators' agreement for the degree of participant's appropriately transfer and sustainably practice learnt “coordination and leadership” skills at workplace were significantly higher among physicians than pharmacists and nurses in benchmarking presentation (Table 3). Above discussion had been included in our “revised” version [page 16, paragraph 2].
We agree with your comments about “ …chance to inter-professional skills and improvement in patient care with more robust measurements/outcomes, or to use the seed instructor training as a tool in the personal development plan…...”. So, the sentence of “As enhancement of inter-professional skills can ensure high-quality patient care, seed instructor training can be suggested as personal development plan for every medical professional” had been included in our “conclusion” as a general goals of IPE [page 16, paragraph 3, line 8-10].

Comment: Another important aspect for discussion could be, why the nurses performed in the presentation not so well like the other two professions - in which way is it clear the all participants are trained in presentations skills? Probably the nurses are not trained and performed not so well like the others. Another point could be the culture that the physicians take over the role of the leadership.

Answer: In our study, we did not give additional training for presentation skills of presenters from three professions. Nonetheless, presenters were asked to present with preset format. Probably, the relatively low benchmarking rating of nurses in Table 3 might be caused by under-trained presentation skills or the culture that physicians take over the role of the leadership in healthcare system. Importantly, you had raised many critical points that reminding the educators to balance the inter-professional trainings. Above critical points had been included in our “revised” version [page 16, paragraph 2]. Thanks again for your suggestions to improve our manuscript.

Summary: The interventions are well considered and interesting; however it requires a clear defined aim and an underlying theory as a red line in the study, especially to sort the assessment tools. To make it clear, some definitions are needed.

Answer: Thanks for your comments to improve our manuscript. In "revised" version, the aims and underlying theory of our study had been included and highlighted in "introduction" section [page 4-5]. The sorts of assessment tolls and definition of "diamond, benchmarking and Kirkpatrick" were included throughout the whole manuscript.

The intervention is really complex; probably a reduction is useful and focusing on a special aspect (e.g. DAA- debriefing or result-description of the two questionaires) would be helpful.
Answer: As the positive effects of "diamond debrief and preparation workshop" had been established in previous references 13-15. According your and other reviewers suggestions, the intervention in our study had been specified on the evaluation of the effects of the addition of "benchmarking" on diamond-enhanced simulation IPE courses for three professions. Finally, the title had been simplified according by your and review 1' suggestion. Thanks again for your sequentially suggestions that help to improve our manuscript.

VERSION 2 – REVIEW

REVIEWER	Dr Margot Skinner School of Physiotherapy University of Otago Dunedin New Zealand
REVIEW RETURNED	23-May-2017

GENERAL COMMENTS	Thank you for submitting a revised manuscript. A lot of work has been undertaken and explanations on the whole are better however there are still limitations in regard to the writing style which makes the flow difficult to understand. Title – much improved and appropriate STROBE checklist has been included The Strengths and Limitations section reads better now and provides an appropriate summary. English- there is still a lot of room for improvement here both in relation to grammar and punctuation. As it stands it makes the manuscript difficult to read. There are still several areas where past tense should have been used and where the order of words changes the meaning. For example with reference to "the diamond" it is a debrief diamond not a diamond debrief; P9 L50 in regard to Kirkpatrick it should state levels set by Kirkpatrick; P9L15 freely should be free to ask. Some further reworking including re-ordering and descriptions of terms applied needs to be undertaken to ensure that the reader is able to pick up the salient points and see the method, conclusions drawn and outcomes clearly.

	Abstract Line 22-23 does not make sense as written L29 place a comma after (ATHCTS); L35 and L46 should be in the past tense– the sentence would read better as follows: …successfully cultivate seed instructors responsible for improving … Answer: Thanks for your suggestion, the sentence had been changed as "…successfully cultivate seed instructors responsible for improving …" in the "revised" manuscript. Introduction/Method/Results Line 6 – there seems to have been a misinterpretation of the previous comment- the term health professions is preferred over the term medical professions - please replace with 'health' throughout P8 L21 In accordance with a … on two… L24 …from a previous … made into three… emergency CABG P10 L 27 review punctuation and capital letters L53 … were more appropriately able to transfer and sustain… P11 L56-60 some words missing? Does not make sense as is. Discussion/Conclusion P15 L50 – as previously comment write as debriefing diamond The authors provided a detailed explanation in their response, regarding benchmarking which is fine but it was the structure of the sentence which was the problem initially. P14 L59 is there a reference that can be included here? P15 L20-29 needs some reorganisation of the English 10 Tables and Figures Figure 1 what titles are there for Figure 1 and Figure 2?

REVIEWER	Konrad Meissner Universitätsmedizin Greifswald, Germany
REVIEW RETURNED	29-May-2017

GENERAL COMMENTS	The manuscript is much improved from ist prior version. All specific critiques were addressed. The English could still be somewhat improved, as could the logic of the text flow, but overall, this is an acceptable result of the revision.

VERSION 2 – AUTHOR RESPONSE

Reply to Reviewer #1,s comments:
Thank you for submitting a revised manuscript. A lot of work has been undertaken and explanations on the whole are better however there are still limitations in regard to the writing style which makes the flow difficult to understand.
Title – much improved and appropriate
STROBE checklist has been included
The Strengths and Limitations section reads better now and provides an appropriate summary.

Comment: Thanks for your positive comments about our revised manuscript. Your important suggestion had made our manuscript better than before.

Comment: English- there is still a lot of room for improvement here both in relation to grammar and punctuation. As it stands it makes the manuscript difficult to read. There are still several areas where past tense should have been used and where the order of words changes the meaning. For example with reference to "the diamond" it is a debrief diamond not a diamond debrief; P9 L50 in regard to Kirkpatrick it should state levels set by Kirkpatrick; P9L15 freely should be free to ask.
Some further reworking including re-ordering and descriptions of terms applied needs to be undertaken to ensure that the reader is able to pick up the salient points and see the method, conclusions drawn and outcomes clearly.

Answer: Thanks for your very constructive suggestion. In "revised" version, the aforementioned sentences, which including "debrief diamond", P9L50 "levels set by Kirkpatrick"; P9L15 freely should be free to ask, had changed and highlighted.

Answer: In "revised" version, the whole manuscript had been re-ordered to ensure that the reader is able to pick up the salient points and see the method, conclusions drawn and outcomes clearly. checked by ourselves and professional native speakers. The changes had been highlighted in revised versions and certification for editing had been included as attached supplement files.

Abstract
Question 1: Line 22-23 does not make sense as written

Answer 1: Thanks for your recommendation for this point. In revised version we had revised this sentence as "Facilitators rated the Group 1 participants' degree of appropriate transfer and sustainable practice of the learnt IPC skills in the workspace according to 4 real examples in their IPC benchmarking presentation" in the "abstract and methods" sections [page 2, paragraph 3, line 5-8; page 9, paragraph 3, line 9].

Question 2:L29 place a comma after (ATHCTS); L35 and L46 should be in the past tense– the sentence would read better as follows: …successfully cultivate seed instructors responsible for improving …

Answer 2: Thanks for your suggestion, we had place the comma after (ATHCTS) scores and L35/L46 sentence had changes to the "past tense" according to your suggestions in the "revised" manuscript [page 2, paragraph 3, line 8; page 2, paragraph 3, line 46].

Introduction/Method/Results

Question 1:Line 6 – there seems to have been a misinterpretation of the previous comment- the term health professions is preferred over the term medical professions - please replace with 'health' throughout

Answer 1: we are sorry for the misinterpretation of the previous comment- the term health professions is preferred over the term medical professions - . In revised version, we had replace with 'health' throughout the whole manuscript [page 2, paragraph 1, line 2;page 4, paragraph 1, line 2&10; page 5, paragraph 3, line 12; page 6, paragraph 1, line 2; page 15, paragraph 3, line 7].

Question 2:P8 L21 In accordance with a … on two… L24 …from a previous … made into three…emergency CABG

Answer 2: Thanks for your suggestions, we had revised aforementioned area "In accordance with; on; had made; three; emergency" according to your suggestion in "revised" version [page 7, paragraph 2, line 1-4; page 8, paragraph 1, line 2].

Question 3:P10 L 27 review punctuation and capital letters L53 … were more appropriately able to transfer and sustain…P11 L56-60 some words missing? Does not make sense as is.

Answer 3: Following your suggestions, the intial sentence [P10 L 27] of "Using IPC core elements-based questionnaires (supplement Table 3), across the three professions, the effectiveness of the well-trained seed instructors in terms of team IPC promotion and IPC attitude modification was evaluated by comparison the Tpre and Tpost' IPC attitude scores" had been modified as "Using IPC core elements-based questionnaires (supplement Table 3), across the three professions, the effectiveness of the well-trained seed instructors was evaluated by comparison the differences between Tpre and Tpost' IPC attitude scores22-24. In total, 132 valid Tpost questionnaire" and the punctuation and capital letters had been checked carefully in "revised" versions [page 9, paragraph 2, line 3]. The sentence in P11 L 53 had also been revised as "… were more appropriately able to transfer and sustain…" [page 11, paragraph 1, line 7]. Additionally, we had checked the possible missing words on P11 l56-60 and P12 L56-60 to make it complete and make sense.

Discussion/Conclusion

Question 1:P15 L50 – as previously comment write as debriefing diamond

The authors provided a detailed explanation in their response, regarding benchmarking which is fine but it was the structure of the sentence which was the problem initially.

Answer 1:According to your suggestion, the sentences in the paragraphs to explain benchmarking and debriefing diamond were re-checked and re-organized by ourselves and professional native speakers to make them clearer for reader. We wish that it will your suggested standard [page 5, paragraph 3, line 7-12;page 13, paragraph 1].

Question 2:P14 L59 is there a reference that can be included here?

Answer 2: There are only L1-55 in P14 of our initial manuscript. Thanks for your suggestion for the including of references for the revised sentence "In fact, it has been suggested that learning together with a variety of high-fidelity simulation modules in multi-professional groups would foster shared inter-professional collaborative (IPC) across many clinical situations" [page 14, paragraph 3, line 12-16].

This concept had been proved by using adult suctioning, infection control skill training, cardiac resuscitation skills and alcohol-drug abuse modules [Baker C, Medves J, Luctkar-Flude M, Hopkins-Rossel D, et al. Evaluation of a simulation-based interprofessional educational module on adult suctioning using action research. J Res Interprof Pract Educ 2012; vol 2.2; Luctkar-Flude M, Baker C, Hopkins-Rosseel D, et al. Development and evaluation of an interprofessional simulation-based learning module on infection control skills for prelicensure health professional students. Clin Simul Nurse 2014;10:395-405; Luctkar-Flude M, Baker C, Pulling C, et al. Evaluating an undergraduate interprofessional simulation-based educational module: communication, teamwork, and confidence performing cardiac resuscitation skills. Advan Med Educ Pract 2010;1:59-66;Puskar K, Mitchell AM, Lee H, et al. Simulated case studies illustrate interprofessional education for alcohol and drug use screening for healthcare professionals. ARC J Nurs Healthcare 2016;2(2):9-20].

Question 3:P15 L20-29 needs some reorganisation of the English

Answer 3: Thanks for your recommendation; the section of P15 L20-29 had been re-organized by professional native speakers in revised version [page 15, paragraph 2].

Question 4:10 Tables and Figures
Figure 1 what titles are there for Figure 1 and Figure 2?

Answer 4: Thanks for your suggestions, the title of Figure 1 and 2 had been included in “revised” version.

Reply to Reviewer #2,s comments:
Comment: The manuscript is much improved from it prior version. All specific critiques were addressed. The English could still be somewhat improved, as could the logic of the text flow, but overall, this is an acceptable result of the revision.

Answer: Thanks for your positive comments about our revisions. In “revised” version, the English, logic of text flow had been re-checked by us and professional native speakers. The changes had been highlighted in revised versions and certification for editing had been included as attached supplement files.

VERSION 3 – REVIEW

REVIEWER	Margot Skinner University of Otago New Zealand
REVIEW RETURNED	29-Aug-2017

GENERAL COMMENTS	Most of the revisions have been completed and so the overall comprehension of the manuscript is better. The approach to use simulation for IPE education was good, however the scenarios were poorly expressed. Numerous other style and grammatical errors were identified and limit the flow of the document. Tables are comprehensive so some descriptive wording in the results could be edited out. The reviewer also provided a marked copy with additional comments. Please contact the publisher for full details.

VERSION 3 – AUTHOR RESPONSE

Reply to Reviewer #1,s comments:
Comment: Most of the revisions have been completed and so the overall comprehension of the manuscript is better. The approach to use simulation for IPE education was good, however the scenarios were poorly expressed. Numerous other style and grammatical errors were identified and limit the flow of the document. Tables are comprehensive so some descriptive wording in the results could be edited out.

Answers:
-Thanks for your comments about the necessary for us to improve the way to express our scenarios.

-In "revised" version, in the "materials and methods" sections, the flow to show the "participants and setting" had been adjusted. We began with the introduction of study period, characteristics of participants, institution and then end with setting.

-To smooth the flow of this section, the detail description and Tables of IPC attitudes self-assessment questionnaire including IEPS and ATIHCTS (supplement Table 1-2) had moved to the paragraph followed the "participants and setting".

-The time points for serial assessment were isolated as another paragraph between the paragraphs of "participants and setting" and "IPC attitudes self-assessment".

-In the section of "benchmarking-enhanced diamond-based IPE simulation courses", the introductions of DAA debrief diamond and facilitators training had been included as a separate paragraph to improve the structure of this part.

-Especially, various sub-paragraphs belong to the "Benchmarking-enhanced diamond-based IPE simulation courses" had been numbers serially to make them clear for readers.

-The "e-learning platform" paragraph had been isolated from "benchmarking-enhanced diamond-based IPE simulation courses".

-Following your suggestion, the descriptions that already present in supplement Table 1-2 were not repeated in the paragraph of "IPC attitudes self-assessment".

-In "material and methods" section, the description of the results of "pre-intervention (Tpre) and post-intervention (Tpost, 6th month) random sampling survey of IPC attitudes" had moved to the paragraph named "improvement of IPC attitudes among team members of three professions by the promotion of new intervention-trained seed instructors" in the "results" section (page 16, paragraph 3).

-We had carefully avoided the possible confusion induced by insertion of Tables into the main test, by journal request.

-The flow to express the "discussion" section had been carefully modified.

-Finally, some repeated description in Tables and manuscript had been checked and deleted in case.

VERSION 4 – REVIEW

REVIEWER	Dr Margot A Skinner School of Physiotherapy University of Otago Dunedin New Zealand
REVIEW RETURNED	24-Sep-2017

GENERAL COMMENTS	The manuscript has been improved. There are still several grammatical errors the major ones have been pointed out. Editorial; review should be able to correct minor ones On page 35 the authors refer to workshops and course surveys there is some confusion about how they are named and it is suggested this be clarified as per the writing attached. In the description of the case best practice for management of patient with these multimorbidities would not focus on vigorous chest clapping as the major means of chest therapy..It is hoped that a physical therapist would have been involved in the patient's management at an early stage after admission to ICU though this was not recorded. Abstract P3/49 L 32: …found that the IPC attitude of the three professions improved after on-site IPC skill promotion by new program-trained seed instructors within teams. Strengths and limitations P4/49 L20 Participant's satisfaction with the new program and the degree of improvement in participant's competencies were not evaluated in our study Introduction P4/49 L12 (IPC) in order to deliver well-coordinated, … L20 ….and responses by means of an Interdisciplinary Education Perception Scale (IEPS) survey …. L25…revealed that in a 3-hour simulation-based interdisciplinary operating room, IPE significantly improve the trainees' …. L29 …pharmacy students reported that semi-urgent situations … L53 …IPE studies8-15 were lacking in … P5/49 L5 ….that IPC attitudes of physicians, …. L26 … to complete the on-line pre-course self-assessment on attitudes to IPC in the Pre-course survey (Tpre)workshop (T1). L37 ….(IEPS, supplemental Table 1), and the Attitudes Toward Health …. P7/49 L5 …diamond and to gain a consensus on how to rate their agreement about the …. L22 … revised by an education committee …. L23 … 61-year-old male with dyspnea,….

L26 …simulation of a 35-year-old family group who were anxious, about the pregnant woman who had nausea/vomiting/abdominal pain, who needed anti-emetics suitable for her condition…

L28-35 … 57-year-old male with chest pain, with a distraught son and with the wrong allergy and ID labeling on his arm band; and the fourth simulation was an unlocked bed in an ICU setting.
These 10-minutes clips provided a basis for post-video viewing discussions that were led by inter-professional facilitators following a Diamond DAA debriefing of 1-hour. these clips targetted the roles and value of each member of the IPC healthcare team involved in the simulated clinical scenarios presented in the three videos.13,1

L39-58 This scenario, which incorporated multi-disciplinary care, was modified in a previous study12 and had a practice run before formally being used. A patient scenario involving Mr. Jason was developed collaboratively by the faculty members of the aforementioned professions. Participants were given the following information:
Mr. Jason has a history of chronic obstructive pulmonary disease (COPD), smokes 60 packs per year of cigarettes and has hypertension, diabetes, coronary artery disease and atrial fibrillation. He has been admitted with an acute exacerbation of his COPD five times over the past year. Home medication includes aspirin, a calcium channel blocker, mycolytic agents, inhalation corticosteroid/bronchodilator (combined) and insulin for subcutaneous administration. Mr. Jason was admitted 3 weeks ago for emergency coronary artery bypass grafting surgery. Although there has been aggressive management with regular chest therapy, he has had difficulty being weaned from the ventilator due to poor ability to expectorate sputum and his malnutrition. The primary care teams now are considering a tracheostomy and
intensive physical therapy and nutrition therapy. His family members are at the bedside. During the simulation, a pre-set intubated high-fidelity SimMan□
3G simulator acted as the patient and standardized patients (SPs) were used as his family. Then, the 3.5-hour workshops were run (Figure 2).

P8/59 L54 … significant difference between and/or among groups.

P9/49 L5 … physicians, nurses and pharmacists as …..

L7 … had experienced receiving previous IPE training …

L57 … IPE course across the three professions. In particular, the magnitude of increases in …

P12/49 Participants demonstrated appropriate transfer of the learnt IPC skills in the workplace and sustainable practice of the skills after training

P13/49 L26-28 …encouraged their motivation to improve their IPC attitude. Specifically, the participants reported that having access to an IPE/IPC-specific e-learning platform was able to improve….

P14/49 L38-40 members reported that they were familiar with IPC skills; agreed that IPC helped them to understand the role of other team members; agreed that IPC improved patient care quality and agreed that IPC improved team efficiency …

	L40-44 Interestingly, across the three professions of randomly sampled team members, the level of agreement to the statement of “IPC helps provide patient-centered care” were excellent both in the pre-intervention (Tpre) and post-intervention (Tpost) surveys (Figure 3C). P15/49 L13 ….not been thoroughly evaluated in previous …. L15 When trying to improve each health professional's IPC… L38-43 Primarily, this new simulation-based IPE program was intended to solve challenges, which included are lack of continuous training and follow-up, of previous studies 8-13,15 and those within our own institution. Nevertheless, there were some limitations in our study that need to be altered and the method improved for any future study before determining the level of effectiveness of this pilot benchmarking-enhanced debrief diamond-based IPE program on health professionals IPC practices and outcomes. P16/49 L50-55 …. in participant’ competency, however, was not evaluated in our study. Kirkpatrick levels 3 and 4 in our study were the "multiplication" of knowledge by "seeding" and its influence on the health care system. According to the actual case scenario used as the example in benchmarking sharing of our study, facilitators gave high ratings for their level of agreement with the participants' degree of appropriate transfer and sustainable practice of the learnt IPC skills to clinical works. P18/49 L19 …..pharmacists twice){should twice be there – were they questioned twice??} about attitudes to IPC in the pre-intervention (Tpre) and post-intervention (Tpost).

VERSION 4 – AUTHOR RESPONSE

Reply to Reviewer #1,s comments:

Comment: The manuscript has been improved. There are still several grammatical errors the major ones have been pointed out. Editorial; review should be able to correct minor ones

Answers: Thanks for your positive feedbacks for our revised manuscript. In this version, the major grammatical errors that pointed out by you had been carefully corrected. With the help of native speaker, we had corrected the possible errors in the whole manuscript carefully. All the changed area had been highlighted in supplementary files.

Comment: On page 35 the authors refer to workshops and course surveys there is some confusion about how they are named and it is suggested this be clarified as per the writing attached.

Answers: Thanks for the writing attached and comments about the term of “workshop”. In “revised” version, we had used “courses” throughout the manuscript and figures to avoid confusion.

Comment: In the description of the case best practice for management of patient with these multimorbidities would not focus on vigorous chest clapping as the major means of chest therapy..It is hoped that a physical therapist would have been involved in the patient's management at an early stage after admission to ICU though this was not recorded.

Answers: Thanks for your specific comments about the involvement of physical therapist in our IPC scenario. There are 12 health professions in our hospital. For case best practice, in our simulation, we really involved respiratory and physical therapist in the patient’s management at an early stage after admission to ICU. Thus, this point had mentioned in revised version [page 7, paragraph 4, line 11].