Author’s response to reviews

Title: Evaluation of Constructing Care Collaboration - Nurturing Empathy and Peer-to-Peer Learning in Medical Students who participate in Voluntary Structured Service Learning Programmes for Migrant Workers

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Dr Maureen E Kelly

BMC Medical Education

Dear Editor

Re: Review of manuscript “Evaluation of Constructing Care Collaboration - Nurturing Empathy and Peer-to-Peer Learning in Medical Students who participate in Voluntary Structured Service Learning Programmes for Migrant Workers”

On behalf of the co-authors, we are grateful to you and the reviewers for their kind review and critique of our revised manuscript. We have made revisions as per the comments given. Our responses to each of the comments are indicated in purple. Non-edited text is left in black.

Editor and Lorraine Mc Ilrath (Reviewer 1) Comments:
1. The way in which the qualitative results are presented needs revision. Feedback from the editor and a reviewer of the first submission suggested that it would provide for a richer narrative if the results of the thematic analysis were provided in a paragraph structure, with relevant quotes, rather than a table. In this submission the authors have included direct quotes in the discussion section, but the results section remains tabulated. It is not normal practice to present the findings in this way, mixing results and new direct quotes in with the discussion.

Thank you for your feedback! We have revised the presentation of the qualitative results as per your comments and presented it as a paragraph structure. Please kindly refer to lines 287 to 503 below.

We have also edited the discussion to avoid mixing results and new direct quotes with the discussions. Please kindly refer to italicized lines 511 to 635 below.

In reference to the method of thematic analysis as outlined by Braun and Clarke,[20] we employed thematic analysis to make sense of our qualitative data set. We reviewed our transcribed interviews and generated codes for both the surface and underlying meanings relevant to the role of service learning in volunteer development and medical education. We then derived broader themes based on these codes helping us to make sense of how a service learning project like ours could benefit our participants.

Empathy

The topic of empathy was brought up in 2 main ways. Firstly, participants expressed that empathy is contextual. Their interactions with migrant workers provided them the opportunity to appreciate better their lives, especially with respect to the challenges which they experience. This guided the way participants developed their thoughts and the way they eventually interacted with migrant workers.

“Every time I go down, I’ll be looking at the world from a very different point of views, I’ll try to understand what they are going through. Their lives are totally different from ours. They have to wake up very early in the morning, they have to work for such long hours. Sometimes I try to put myself in their shoes and try to think how I would be like if I were in their position, working for such long hours, not having much freedom. Being away from family and so on.” – Year 3 Volunteer (Chinese, Female, Completed 2 Cycles)
It was only when I went to their dormitory that I realised that their living quarters look very nice on the outside, but is very cramped inside. They are not very well to do. A lot of them really do care about their health. When I see them, I try to empathise. For example, I try to imagine how I would feel like if I am working overseas for my family. Only after that can I imagine that it must be quite hard for them. Also, a lot of the companies hire their own doctors. However, the doctors don't like to give them enough MCs, which means they don't get enough rest.” – Year 2 Volunteer (Chinese, Female, Completed 1 Cycle)

Secondly, it was brought up that actual interactions developed a different form of empathy as compared to that developed from simulated sessions in a classroom setting. Empathy was even described by a participant as a form of communication in the context of migrant workers, where language served as a barrier at times.

“It has definitely taught me to be a better listener, not to have expectations before visits and not to have any pre-formed judgments, so that I can take in not just what their medical complaints are but also their stories. If you’re more open and listen more, then you will be able to absorb the migrant mentality better.” – Year 3 Volunteer (Chinese, Male, Completed 1 Cycle)

“I was able to demonstrate more empathy. I have more opportunities to demonstrate empathy. It gives me that chance to interact. I think empathy is one of the key aspects that you’ll need in order to communicate with people with such backgrounds because of the language barrier.” – Year 4 Volunteer (Chinese, Male, Completed 1 Cycle)

Social Awareness & Cultural Competency

A number of participants expressed that they had minimal interaction with migrant workers prior to their involvement in CCC. As of consequence, numerous participants expressed that the interactions they had with migrant workers, through CCC, allowed them to correct any potential pre-conceived ideas they may have had with regards to migrant workers, and also understand in greater depth the various issues migrant workers experience from the cultural, social and healthcare perspectives.
Participants also mentioned that through their interactions, there were able to see migrant workers as human beings and not a forgotten group in society. This concept was expressed in various ways, namely the appreciation of stories, challenges, the development of human connections and a special way of communication which transcends language.

“...it challenged everything that I knew previously, which was nothing much.” – Year 2 Volunteer (Chinese, Female, Completed 1 Cycle)

“I got to know the perspectives of these migrant workers. I was able to understand them better, finding out their difficulties and the circumstances they face while working abroad and the challenges that they face. I think that there’s very little opportunity to do so (understand their perspectives) on a daily basis, because we don’t interact with them, this group of people. But, through this programme, I’m able to better understand how they feel about their role here.” – Year 4 Volunteer (Chinese, Male, Completed 1 Cycle)

“I guess the first takeaway would be that I’m more exposed to them now because I don’t usually talk to them. The only foreign workers I come into contact with are probably those I meet on the public transport or at the construction sites. I never really get to talk to them. This is a very good chance for me to be exposed to them. I got to know their lives better, what their pay is like, what their working conditions and their living conditions are like.” – Year 3 Volunteer (Chinese, Female, Completed 2 Cycles)

“... the whole idea of humanizing a person or a certain stereotype that you have. You can really do that when you actually go and talk to the person and you ask them about their background, about their family, about things that you can identify with in your own life. When you do that, that person actually becomes -- you can see them... as a brother, as a son, as a father. Then that really helps bridge that human connection, which I think is important connection because often…, it’s very easy to lose sight of this.” – Year 5 Group Leader (Indian, Male, Completed 4 Cycles)

“Basically, these people... are often forgotten. We don’t really see their day-to-day life. They don’t receive that much media coverage from a certain project but they need help and they’re just right there in the background. You don’t have to go far to look for other underprivileged people, they’re right here.” – Year 5 Group Leader (Indian, Male, Completed 4 Cycles)
Participants also described that CCC provided them the platform to understand issues that migrant workers may experience as their pass through the healthcare system in Singapore as foreigners. Their interactions influenced their worldview on migrant workers suggesting potentially improved cultural competence when participants eventually become medical doctors and start treating migrant workers independently in various sectors of the Singapore healthcare system.

“A lot of these migrant workers come to get medical services from community clinics, because they feel that they are unable to get good medical services from their company doctor. This is a very common issue that arises across these migrant workers who attend community clinics. And so in the future, when I treat a migrant worker, when he is very anxious, I won't think that he is trying to get out of work. I know where this anxiousness comes from, why he feels that the company doctor can't relate to him, that his company doctor isn't treating him well.” – Year 3 Committee Member (Chinese, Male, Completed 2 Cycles)

“...it has opened my eyes to an area of the medical sector that is lacking. There's something that we are missing. There's something that is not being catered to these people in the clinic...” – Year 3 Volunteer (Indian, Male, Completed 1 Cycle)

CCC Topics: Commitment, Compassion, Care, Communication, Concerns, Continuity

As a form of evaluation, participants revealed that they did learn more with regards to the core competencies of the CCC programme. They also mentioned that the programme provided them ample opportunity to practice these core competencies in a structured manner.

Apart from that, participants mentioned that CCC allowed them to practice their communication skills with a special group in society which they may not see as commonly in the main clinics and hospitals in Singapore, providing them a unique skillset in overcoming language barriers and growing their confidence in taking a proper clinical and social history despite language barriers.

“During each session, the handbook states what we are supposed to focus on. For example, the first session was about communication. So before each session, it’s quite useful to think about what I should expect from each session. It also served as a general guide to how the sessions will
progress in the future. It made me reflect more about my experiences in CCC because at the end of the day, we were required to consolidate what we learned and to share our experiences with other members or with friends. I thought it was very useful as a means of consolidating my knowledge.” – Year 3 Group Leader (Chinese, Female, Completed 2 Cycles)

“Firstly getting over the language barrier, finding ways to explain things in a very simplistic manner, these are things that CCC has taught me. You have to be creative and ask migrant workers questions in a very simple manner...you have to use your hands, and sometimes you have to draw it out on a piece of paper.” – Year 3 Committee Member (Chinese, Male, Completed 2 Cycles)

“It's not that because they are different, you cannot communicate with them. (You need to be) more flexible… more fluid in changing your tone and code switching.” – Year 3 Volunteer (Chinese, Female, Completed 1 Cycle)

“Being around migrant workers I guess helps you really… you really need to go down to the simplest possible form of communicating. This includes gestures or a smile or breaking down your questions into simple words. You also get to see your fellow juniors and seniors interacting with people, learn from them and teach them as well.” – Year 3 Volunteer (Indian, Female, Completed 1 Cycle)

“…CCC has helped build my confidence in trying to build rapport with people whom I meet.” – Year 4 Volunteer (Chinese, Male, Completed 1 Cycle)

“I’m more confident in talking to migrant workers now. Before CCC, I never talked to a migrant worker so I don’t really dare to approach them. Now, after speaking to so many of them, they are just like any one of us, so it’s okay to talk to them.” – Year 3 Volunteer (Chinese, Female, Completed 1 Cycle)

Peer-to-Peer Teaching
Participants talked about the benefits as well as the challenges they experienced with peer-to-peer teaching. In general, medical students viewed CCC as a safe place to ask questions as well as learn new skills and knowledge. CCC also served as a platform for junior medical students to observe how their seniors and peers take a history and communicate with patients, which assisted them as they developed their own styles of history taking and patient communication.

“They are my seniors, they’ve been through medical school, they have also interacted with people more in a medical setting and most of them have done CCC before so they can draw from their stories, not just medical but also non-medical stories and of course, I gained from that.” – Year 2 Volunteer (Chinese, Male, Completed 1 Cycle)

“In CCC, you learn when you see how the seniors interact with the patients, how they go the extra mile.” – Year 3 Volunteer (Chinese, Female, Completed 2 Cycles)

Senior students also expressed that CCC served as a useful platform to consolidate their knowledge as they taught their juniors. It also provided them the opportunity to practice teaching others. Teaching was also described as a form of learning for senior students.

“It (CCC) also helps me to consolidate what I learned. It is also a good way to communicate with more juniors as well. As we are all medical students, the teaching is at a level that you’ll be able to understand better. It made me more confident and made me practice more in terms of how to teach my peers and my juniors.” – Year 3 Volunteer (Chinese, Female, Completed 2 Cycles)

“I feel that it was very beneficial that the students teach their peers because not only does it help shape your understanding of the community, but of course, it helps to sharpen your own personal medical knowledge, which is ultimately, what we are here to do.” – Year 3 Volunteer (Chinese, Male, Completed 1 Cycle)

“The best way to learn is to teach other people. And definitely I can see that when I teach people, I need to know my facts well in order to teach them. Through the act of teaching, I go through content again in my own mind and that helps me to recall information that I would probably have forgotten. It also forces me into a situation where I need to know my content very well. If not, I
cannot teach people properly. It has benefited me a lot personally. I can see that it benefited the seniors before me as well.” Year 3 Volunteer (Chinese, Male, Completed 1.5 Cycles)

“If you teach, you remember stuff better. I realise that in medical school you learn a lot of content, but you forget a lot. If you teach someone else, you remember it better in your head. Secondly, this mentality of paying it forward is very important. When you go out in society as a doctor and you have more capabilities to do things, you will have to use a similar mindset, beyond the migrant community. So, I guess this really encourages community engagement, in the sense that you pay it forward by using the skills and knowledge that you know to teach other people, and use these skills and knowledge to benefit others.” – Year 2 Committee Member (Chinese, Female, Completed 2 Cycles)

However, a participant did mention that being requested by a junior to teach did reveal her lack of confidence and knowledge on certain topics. This reveals that the value of peer-to-peer teaching is limited by the extent of knowledge and skills students involved have. The concern on teaching wrong content was revealed as well.

“When I first started to teach, I was a year 3 medical student, and my own knowledge wasn't the best, so the confidence wasn't there as well. So that is the main challenge because you didn't know whether you were teaching the wrong things.” – Year 3 Volunteer (Chinese, Female, Completed 2 Cycles)

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Discussions (Lines 511 -635)

Improved Empathy and Minimising costs

The benefits from volunteering in CCC described by participants through the FIPSE highlights the extent that CCC succeeds as a service learning initiative. As a student led initiative that leverages and seeks to enhance ongoing community clinics, the reported benefits were achieved at minimal financial (mainly transportation costs borne by participants) and manpower cost. The utilisation of volunteer manpower is consistent with other studies in maintaining low cost while ensuring effectiveness of their programs and benefit for all stakeholders. [21, 22] Similar to findings on medical students hospice volunteers, CCC provides additional benefit to the institution/community clinics as they provide a steady stream of volunteers without the cost of the outreach and community recruitment.[23] Hence, by linking to pre-existing community
clinics, CCC is highly replicable in many countries with accessible clinics for both patients and participants. From both the quantitative and qualitative data, there are promising results that support that participation in CCC improved volunteers’ empathy. This is in line with similar studies of structured continuous service learning, which demonstrated that such models can improve empathy (defined by willingness to serve underprivileged communities). For example, in a study by Jones et al, participants’ willingness to serve underprivileged communities increased to from 34% to 70% compared to the batch before them. [24]. We similarly hope that by nurturing empathy, a culture of service can be inculcated and reinforced in our participants.

Improved FIPSE and Communication Skills

We compared CCC to other studies- a local service-learning program on health screenings, and another on community medicine in Taiwan [19], in which participants reported marked benefit from the FIPSE Survey instrument ability scale. CCC FIPSE scores are comparable or even higher than another local service learning program that has fared well. [15] This could be due to a CCC’s emphasis on structured reflection, discussion and learning, as other studies conducted reflection on an ad hoc basis.

Participants in CCC also reported increased confidence levels and improved communication skills in talking to strangers and patients. Both this study and the service-learning program in Taiwan attributed the immersive nature of exposure, interaction with their communities and structured tasks as key reasons for improved communication skills. Communication, essential in the therapeutic relationship, increases patient satisfaction [25]. However, populations with limited English-speaking abilities, can receive compromised care because of English-predominant conversation, highlighting healthcare providers’ decreased awareness of the language barrier [26]. CCC was able to overcome such barriers as volunteers tailored verbal and non-verbal communications toward the migrant population.

Improved Cultural Competency

Cultural competence has been defined as “the ability of individuals to establish effective interpersonal and working relationships that supersede cultural differences”, and a “culturally competent healthcare system” is one that takes into account the importance of culture, health-seeking attitudes and behaviours, to tailor healthcare services to serve the unique needs of the population. [31] In this study, CCC provided opportunities to develop an in-depth understanding of the unique challenges migrant workers perceive they face simply because of their identity. For example, one participant reflected that some migrant workers feel that the medical care received
from their company doctors tend to be of a lower standard, particularly as they perceive that these healthcare workers tend to have a view that they are merely seeking medical services to get time off work. Our volunteers also learnt that company doctors are also more hesitant to provide medical certificates to these migrant workers. It also sheds light into the particular problems migrant workers face by virtue of their socio-economic status and limited access to alternative avenues of healthcare. Through these insights, our volunteers are then able to tailor healthcare to these community of migrant workers in future by being aware of their own pre-conceived notions about migrant workers’ health-seeking behavior, and learn not to discount the healthcare complaints migrant workers bring to a consultation room.

Improved Empathy

Participants also feel that CCC allowed them to practice empathy realistically. In many medical schools, students practice empathy with Simulated Patients (SP). By allowing students to interact with migrant workers, it bridges the gap between theory and practice. Empathy is not only positively associated with clinical competence [28], it also improves patient outcomes. Participants in CCC felt that from this exposure to an underprivileged population, they were more accepting and understanding of the migrant workers, and more aligned with the needs of the community. By forming bonds on the ground and emphasizing on the similarities rather than differences between the volunteers and the migrant workers, this could de-emphasize a sense of self-importance and build connection and understanding, which would greatly aid in developing empathy. Additionally, many participants were inspired by the seniors’ teaching and sharing of their own experiences. This demonstrates that peer-to-peer teaching and learning can possibly also play a role in boosting empathy in medical students.

Improved Social Awareness

Participants in CCC have also developed a greater awareness of how social situations affect health. This was probably achieved through 2 mechanisms: a focus on social history taking in CCC, and an immersive environment of seeing first-hand the living conditions of these migrant workers and its impact on their health. Many participants have reflected that the migrant workers require a more personalised process of medical treatment, tailored to their social background and limitations on their lifestyles. A study in Germany by Keifenheim of 42 medical students in a peer-assisted history-taking course showed that interaction with a real patient, and taking history taking resulted in marked improvement in identifying and dealing with their emotional and social issues.[29] In our study, participants reflected for the need to have a deeper understanding and empathy for migrant workers, especially in the standard medical care system (eg. in hospitals and polyclinics), given their unique socio-economic circumstance. Both Keifenheim’s paper and
CCC has shown that the 2 factors of having an immersive experience with a real patient, and a focus on social history taking has led to a greater awareness of social issues in relation to health.

Additionally, CCC has also shown to develop greater awareness of other underprivileged communities and deepen the participants’ understanding of society and varying worldviews. This was mainly achieved through allowing the participants to interact with the migrant community in a safe and natural environment, where both the participant and the migrant worker are both very willing to share their experiences with each other. The reflection participants conducted at the end of the session and in their own personal time also contributed to the development of a greater awareness of the community and helped them translate it into greater awareness of other communities. Similarly, in a Pittsburgh study of occupational therapy students participating in a service learning project with marginalised communities, students who were given the opportunity to interact with and learn from an underprivileged community in a natural context were able to gain a deeper understanding of the community they served and practice it within and beyond the community.[30] Although this project had a longer time frame, and more sessions with the community they served, the factors identified contributing to the development of a larger worldview was that of the sharing of experiences by the community and the natural context the project was set in. This is similar to the experience the participants had at CCC. This will serve the participants well when they encounter other underprivileged communities in the future, as students or as medical professionals. Patients will also benefit from dealing with healthcare professionals that have a deeper awareness of their situation, and hence be rendered more personalised and effective care.

Peer-to-peer teaching

Participants felt positively about peer-to-peer teaching and many felt this was a safe environment to do so. Seniors benefited by being able to consolidate their knowledge, add meaning to their experiences and clarify their own understanding. Juniors enhanced their knowledge and understanding though thematic and opportunistic discussions. Peer-to-peer teaching not only enhanced senior-junior interaction, but the learning of both parties involved. In a systematic review paper of peer-to-peer teaching in clinical education [30], it was found to be an effective educational intervention that aids learning. In our study, some seniors reported a sense of responsibility towards teaching their juniors when opportunities were presented to them, and juniors felt more motivated to teach their peers in the future. This creates a culture of collaboration and sharing of knowledge, enhancing each student's learning experience.
2. Also in the description of the type of thematic analysis used, the examples of how the themes were developed is not that helpful to include (I refer to the closing sentences of the revised data analysis paragraph).

Thank you for your advise on the description of the thematic analysis. We have removed the closing sentences and revised the data analysis section. Please refer to lines 242 to lines 257.

“Data analysis

We performed all quantitative analyses using IBM SPSS Statistics software Version 23.0 (IBM Co., Armonk, New York, US), Chi squared test and Fisher’s exact test. Statistical significance was set at P<0.05. Quantitative data from the 4 point likert scale questionnaire was binarised by taking “agree” and “unsure but tend to agree” as 1 and the other 2 options as 0. Option 5 “Do not understand the statement” was removed from analysis. We recorded and transcribed ad verbatim all qualitative interviews. After which, they were coded using thematic analysis independently by 4 of the authors (SYE, TCLT, TCK, SJS). Transcripts were first briefly reviewed to discern ideas brought up by participants. Recurrent/similar ideas were consolidated. The concepts/ideas were then grouped into subthemes, which were subsequently grouped under the various themes: empathy, social awareness, cultural competence, peer-to-peer teaching and the CCC topics. The frequency which concepts and subthemes occurred were counted and analysed to determine which subthemes were more prominent. Qualitative data collection ceased once data saturation was reached at the 15th interview, but 2 more interviews were conducted to confirm that there were no further new themes that could be elicited.”

3. The manuscript needs to be reviewed from the viewpoint of grammar, sentence structure, and presentation. I recommend that it is carefully proof read, by someone who is fresh to reading it. For example there are two sets of reference lists included; the last sentence in the methods section needs re-wording.

We have made numerous minor edits to language grammar, sentence structure and presentation throughout the manuscript. Please see lines 186 to 190 for the paragraph on methods in particular.

“This is a mixed method study that comprises of a self-administered quantitative questionnaire and qualitative interview. Participants for the study were recruited from medical student
volunteers who had finished at least 1 cycle of volunteering with CCC. This was aimed to maximize acknowledge the unique strengths and limitations of both qualitative and quantitative methods which are discussed below.”

Maria van den Muijsenbergh (Reviewer 2):

Your paper is much improved compared to the first version. It addresses an interesting service learning experience. Methods and results are good and clear now.

Unfortunately, still you did not answer some of my previous comments. As you write in results and conclusion about 'cultural awareness' and 'cultural competence' you really should provide a definition with reference to international literature (the 2 papers on migrants you cite do not provide this definition) and some description on what you mean by this, and to what extent these competences were assessed / improved in the project. If you add this information, your paper will make a valuable contribution also in the field of teaching cultural competencies

Thank you for your feedback. Our definitions for “cultural awareness” and “cultural competence” which we used in our paper with supporting references are added as suggested:

“Cultural competence is often defined in literature as having the attitudes, behaviours and practices to provide effective healthcare, taking into account the background, beliefs and needs of patients from different cultures.[11, 12] Cultural awareness is the knowledge and appreciation of these backgrounds, beliefs and needs and this is essential for culturally competent healthcare.[11-13] The experience in CCC may hence prepare medical students for work in culturally diverse settings [14].” (From Background, paragraph 2 lines 101 to 106)

We have also edited our discussion to reduce any confusion on the terms. Please kindly refer to the paragraph on improved cultural competency on paragraphs 549 to 568

“Improved Cultural Competency

Cultural competence has been defined as “the ability of individuals to establish effective interpersonal and working relationships that supersede cultural differences”, and a “culturally competent healthcare system” is one that takes into account the importance of culture, health-seeking attitudes and behaviours, to tailor healthcare services to serve the unique needs of the
population. [31] In this study, CCC provided opportunities to develop an in-depth understanding of the unique challenges migrant workers perceive they face simply because of their identity. For example, one participant reflected that some migrant workers feel that the medical care received from their company doctors tend to be of a lower standard, particularly as they perceive that these healthcare workers tend to have a view that they are merely seeking medical services to get time off work. Our volunteers also learnt that company doctors are also more hesitant to provide medical certificates to these migrant workers. It also sheds light into the particular problems migrant workers face by virtue of their socio-economic status and limited access to alternative avenues of healthcare. Through these insights, our volunteers are then able to tailor healthcare to these community of migrant workers in future by being aware of their own pre-conceived notions about migrant workers’ health-seeking behavior, and learn not to discount the healthcare complaints migrant workers bring to a consultation room. “