ORIGINAL RESEARCH

An exploration of undergraduate medical students' satisfaction with faculty support supervision during community placements in Uganda

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A B S T R A C T

Introduction: To produce health professionals who are oriented towards addressing community priority health needs, the training in medical schools has been transformed to include a component of community-based training. During this period, students spend a part of their training in the communities they are likely to serve upon graduation. They engage and empower local people in the communities to address their health needs during their placements, and at the same time learn from the people. During the community-based component, students are constantly supervised by faculty from the university to ensure that the intended objectives are achieved. The purpose of the present study was to explore student experiences of support supervision from university faculty during their community-based education, research and service (COBERS placements) and to identify ways in which the student learning can be improved through improved faculty supervision.
Methods: This was a cross-sectional study involving students at the College of Health Sciences, Makerere University, Uganda, who had a community-based component during their training. Data were collected using both questionnaires and focus group discussions. Quantitative data were analyzed using statistical software and thematic approaches were used for the analysis of qualitative data.
Results: Most students reported satisfaction with the COBERS supervision; however, junior students were less satisfied with the supervision than the more senior students with more experience of community-based training. Although many supervisors assisted students before departure to COBERS sites, a significant number of supervisors made little follow-up while students were in the

community. Incorporating the use of information technology avenues such as emails and skype sessions was suggested as a potential way of enhancing supervision amidst resource constraints without faculty physically visiting the sites.

Conclusions: Although many students were satisfied with COBERS supervision, there are still some challenges, mostly seen with the more junior students. Using information technology could be a solution to some of these challenges.

Key words: COBERS, community-based training, students, supervision, Uganda.

Introduction

The global trend in transforming health professions education has promoted community-based education (CBE) to ensure orientation towards primary health care and community health[1-3]. During CBE, students learn from the community setting, focusing on population groups and their everyday health problems[4]. The amount of time students spend in the community and organizational settings may vary. For example, training may take place at a general practice, family planning clinic, community health center or a rural hospital[5]. During community placements, students learn about social and economic aspects of illness, health services in the community and methods of health promotion, team work, as well as the frequency and types of health challenges encountered in communities outside a teaching hospital setting[6].

Community-based education has been recognized as crucial in influencing student career choices as well as addressing community health needs through service learning[7]. Stanton[8] has identified three principles in service learning: 'those who are being served (community) control the service that is provided, those providing a service (eg students) become more competent to serve, and those providing a service also become learners within the community and have significant control over what is learned'. Some studies have acknowledged the importance of CBE and service learning in understanding community needs. For example, Mpofu et al, in a study on student perceptions of community service learning experiences in community health services in South Africa, reported that CBE allows students to empower people within the community to handle their own health needs[9]. In another study, Mubuuke et al[10] reported that CBE not only provides a platform for students to learn, but also allows students to work with people in the community to advocate for better health services.

The importance of CBE has seen many medical schools globally increase their community-based component in the undergraduate student curricula, responding both to the changes in health care and a worldwide consensus that medical education should have more relevance to the health needs of communities[11]. The focus of CBE is largely on understanding the context within which students are likely to practice and to improve the health needs of the community. It has been reported that, while in the communities, students need guidance and supervision from their medical school faculty to ensure that the intended learning outcomes are achieved[2,12-14].

In Uganda, where this study was conducted, a key obstacle preventing many people from obtaining primary health care is the fact that the majority of the population (88%) lives in rural communities while most health professionals are employed in urban areas[15]. It was recently reported that most doctors (70%) and pharmacists (80%) were serving urban populations[15]. As a way of addressing this, training institutions adopted several measures. For example, Makerere University College of Health Sciences (MaKCHS) introduced CBE into undergraduate curricula[16,17]. Students at MaKCHS are required to undertake community-based education, research and service (COBERS) modules through placements for a period of 6 weeks each year. During this time, students live within the communities and participate in

a number of activities at the health facility, interacting with people in the community and engaging them, to identify and address their priority health needs.

At MaKCHS, the COBERS program is aimed at exposing students to public health and primary health care needs of rural communities. The content for COBERS is integrated within the undergraduate medical curricula and is delivered incrementally across the 5 years of study. Key content areas of the COBERS program include community health, community diagnosis and communication, biostatistics, epidemiology, demography, communication skills, community entry protocols, cultural safety, sanitation, health education and promotion, immunization, nutrition assessment, food security, community engagement, health records and information management, HIV/AIDS awareness campaigns (including prevention, treatment and care, palliative care and health systems management at community health facilities). Students undertake community placements beginning in first year and subsequently across all years of study. In the first semester of third year, students propose and implement an intervention project within the community aimed at addressing a priority community health need. In the second semester of fourth year, the students evaluate the impact of their community-implemented project. These COBERS activities are aimed at ensuring that students recognize the importance of developing community partnerships and engaging communities as a means of implementing sustainable healthcare initiatives. Most importantly, from a national public health perspective, there is evidence that such community exposures can encourage students to pursue rural health service[18].

When students are within the communities, a university-trained supervisor (site tutor) coordinates student activities, facilitates learning and carries out student assessment. Assessment of student learning involves continuous progressive assessment of weekly activities entered in logbooks, tutorial assessment, written examination papers, submitted student reports and oral presentations of students' activities. At the same time, students are assigned a faculty supervisor from the university whose major role is to guide them through their learning. This supervisory role involves physical visits to address any fears, concerns or challenges the students could be facing. Although this arrangement has been going on at MaKCHS for a long time, it is not known whether the students have been satisfied with the faculty support supervision.

Students often encounter apprehension, stress, anxiety, fear, uncertainty, negative emotions and unclear expectations during community placements, all of which can interfere with effective student learning while in the communities[19,20]. Empirical evidence and a theoretical rationale has been presented on a number of relationships that include associating negative emotion with deficient field preparation, apprehension with poor performance and supervision with low satisfaction[19]. Literature is replete with evidence suggesting that the quality of student supervision during field placements is related to overall student satisfaction with the placement[21-23].

To what extent are the students satisfied with the faculty support supervision during their community placements? Review of records at MaKCHS shows that there is little information on students' views about faculty support supervision during community placements. Therefore, the purpose of this study was to explore students' views about the supervision received from university faculty during COBERS.

Methods

Study setting and design

The study was conducted at Makerere University College of Health Sciences, Uganda, between November 2014 and February 2015. The institution trains undergraduate medical students over a 5-year period and the community modules are spread across the 5 years.

This was a cross-sectional study in which both self-administered questionnaires and focus groups were used

(Appendices I and II). The questionnaires were electronic and were administered in English. A cross-sectional study design was chosen because the study purpose was largely descriptive and data were collected from students across the different years at one point in time[24].

Study participants

The study involved medical students with previous experience of learning in the community. No student was excluded on the basis of year of study. From this criterion, the study thus targeted students in years 2–5. First-year students had not participated in COBERS at the time of the study and thus did not meet the inclusion criterion.

Sampling

For the questionnaire survey, simple random sampling was used to select 150 students. For the qualitative part, purposive convenience sampling was used to select students into focus groups. Purposive convenience sampling is a type of sampling in qualitative research where the researcher selects participants at his or her disposal with the required knowledge or experiences to answer the research question[25]. In this study, the students selected had a previous experience of COBERS and were thus the most suitable to answer the research question. A call for participation into the focus groups was sent out through both email and posting paper notices. Participants were required to express their willingness to participate in the focus groups to one of the researchers who made the selection of students. Students who responded first to the call were recruited. Four focus group discussions, each with six students, were conducted. A minimum number of six participants for a focus group discussion has been previously recommended in literature[26]. One focus group discussion was conducted for each year of study (ie years 2–5). The focus group discussions were conducted after the questionnaire survey. The number of focus groups to be conducted was not predetermined, but was largely guided by the principle of data saturation where no new themes were emerging, a technique employed in qualitative research[27]. Although data saturation was actually

achieved with the third focus group, the researchers decided to include the fourth focus group such that each year of study was represented. This also added rigor to the study.

Data collection and management

Quantitative data were collected using self-administered electronic questionnaires (Appendix I). The measure for satisfaction with supervision was the indication of agreement against each item on the questionnaire. An item where students indicated either 'disagree' or 'neutral' was not regarded as satisfaction. Response frequencies were tallied. Questionnaire items were developed from a review of literature on student satisfaction surveys with supervision during community based placements/training. To provide a measure of face validity, the questionnaire was first piloted with two students.

Qualitative data were collected using focus group discussions that were moderated by one of the researchers. Responses from the focus group discussions were audio-recorded and later transcribed. It was decided to have separate focus groups stratified by year of study due to the fact that the quantitative data revealed key differences in satisfaction across the years. It was envisaged that mixing up the students in a focus group would bias some responses and inhibit key data from emerging, especially for those students who may have felt apprehensive amongst peers.

Questions for the focus groups were open-ended and semi-structured (Appendix II), and these were also informed by previous literature. These questions explored participants' views of what was good with the faculty supervision, challenges and ways forward to improve the supervision. The questions were piloted before use.

Data analysis

Descriptive and inferential analyses were used for quantitative data[28]. Analysis focused on identifying significant differences in responses across years 2–5. Chi-squared analysis was used for categorical variables and correcting for continuity, and

student *t*-test was used for continuous data. The Statistical Package for the Social Sciences (SPSS; http://www.spss.com) was used in analysis, and significance was set at $p<0.05$. Thematic analysis was used for qualitative data[28]. The researchers carried out the analysis manually following an iterative process, a valuable technique in qualitative research methods[29]. This involved identifying patterns of similar meaning within the data and labeling them as codes. These codes were related to each other and clustered, leading to the emergence of broader categories of data. The categories were also compared to each other and to the raw data to generate major themes that were used to report findings.

Ethics approval

Permission to conduct the study was granted by the Research and Ethics Committee, School of Health Sciences, Makerere University (2014-084). Informed consent was obtained from the students prior to completing the questionnaire and conducting the focus groups. Confidentiality and anonymity were ensured throughout the research process.

Results

Quantitative results

The response rate to the questionnaire survey was 100% ($n=150$). Of the total respondents, 59% ($n=88$) were male and 41% ($n=62$) were female. The distribution of students by year of study is summarized in Table 1.

Regarding satisfaction during community placements, respondents were asked to indicate whether they agreed, disagreed or remained neutral on key items. The findings are summarized in Table 2. Generally, most students were in agreement with the key items of supervision. One can also infer from the table that many supervisors tried to meet the students before departure for COBERS, but were generally not in touch with them frequently while in the communities to discuss any progress or challenges. Many supervisors made

at least one visit to the site and none made any more visits. A significant number of supervisors did not make any single visit to COBERS site, according to 32.7% ($n=50$) of students.

Although the quantitative findings generally demonstrate agreement, which would thus mean optimum satisfaction for students, further interrogation of data revealed a significant difference in satisfaction with COBERS supervision across the different year groups ($p=0.003$), with the degree of agreement and thus satisfaction decreasing from fifth to second year. The degree of satisfaction with faculty supervision seemed to be high amongst fifth- and fourth-year students and comparably low amongst second-year students. This was the general trend across most of the questionnaire items, where the percentage of students in agreement was high amongst fifth-year students and significantly reducing through years 4–2. For example, when asked about satisfaction with the quality of feedback from the COBERS supervisor, there was a significant difference in agreement between fourth- and second-year students, with students in fourth year showing a higher degree of agreement compared to those in second year ($p=0.028$). When asked about satisfaction with the supervisors' involvement and engagement with the COBERS reports of activities, students in fourth year reported a higher degree of agreement compared to those in either third year ($p=0.019$) or second year ($p=0.002$).

A significant observation noted was the use of information technology avenues to contact the students. Surprisingly, 100% ($n=150$) of the students in this survey indicated that the supervisors did not utilize information technology avenues such as skype, email or twitter to contact them. This observation was made across all years of study.

Qualitative results

Further insight into the meaning of the survey results was carried out using focus group discussions to yield qualitative information. Three key themes emerged: good aspects, using information technology to enhance supervision, and challenges and ways forward.

Table 1: Student distribution by year

Year of study	Number of students *n* (%)
2	40 (26.7%)
3	35 (23.3%)
4	37 (24.7%)
5	38 (25.3%)

Table 2: Student responses on key activities of COBERS supervision

Item	Agree *n* (%)	Neutral *n* (%)	Disagree *n* (%)
I am generally satisfied with my COBERS supervisor	105 (70%)	15 (10%)	30 (20%)
I was satisfied with the quality feedback from my COBERS supervisor regarding COBERS activities	95 (63.4%)	5 (3.3%)	50 (33.3%)
My COBERS supervisor often used e-mail to contact us	0 (0%)	0 (0%)	150 (100%)
My COBERS supervisor often used skype to contact us	0 (0%)	0 (0%)	150 (100%)
My COBERS supervisors often contacted us by phone	112 (74.7%)	0 (0%)	38 (25.3%)
The supervisor was actively involved and engaged with our reports of COBERS activities	95 (63.4%)	0 (0%)	55 (36.6%)
My supervisor was willing to meet me before leaving for the community placement	120 (80%)	0 (0%)	30 (20%)
I was satisfied with my discussion with the supervisor before leaving for community placement	124 (82.7%)	0 (0%)	26 (17.3%)
I had my issues clarified with my supervisor before leaving for COBERS	132 (885)	0 (0%)	18 (12%)
My supervisor kept in touch to see if I had arrived at the site	100 (66.7%)	35 (23.3%)	15 (10%)
The COBERS site supervisor visited more than once at my site	0 (0%)	0 (0%)	150 (100%)
The COBERS supervisor visited us at the site at least once	101 (67.3%)	0 (0%)	49 (32.7%)
The COBERS supervisor never visited at all during my stay at the site	43 (28.7%)	7 (4.7%)	100 (66.6%)
During his/her visit, the supervisor was eager to know my academic progress	98 (65.4%)	5 (3.3%)	47 (31.3%)
I discussed with my supervisor the activities accomplished during his/her visit to the site	95 (63.4%)	5 (3.3%)	50 (33.3%)
I discussed with my supervisor during his/her visit the challenges I was facing at the site	121 (80.7%)	4 (2.7%)	25 (16.7%
I discussed social challenges with my supervisor during his/her visit to the site	98 (65.4%)	2 (1.3%)	50 (33.3%)

COBERS, community-based education, research and service

Good aspects: It was rewarding to note that there were some good aspects with the COBERS supervision. The majority of students highlighted some of the key good aspects.

Our supervisor was eager to know our arrangements before departing for the COBERS site including transport, accommodation and any health issues. (Year 3 student)

The supervisor at least made an initial call to find out if we had arrived safely and if we had got decent accommodation. (Year 2 student)

Although our supervisor never physically came to see us, he frequently kept in touch and we always updated him on what was happening on e-mail and phone. This was commendable

of him because we at least never felt abandoned. (Year 4 student)

We were quite ok with our supervisor. He came to visit us and tried to give us feedback, though sometimes the feedback did not make meaning to us, but at least he tried. (Year 5 student)

We had a nice supervisor since we had been with him since first year, so it was easy to call him up to remind him of the supervision. After calling him, he would come to see us. When he came over, he spent quality time with us and tried to find out what was going well and any challenges we were facing. (Year 3 student)

In our first COBERS placement, we felt abandoned, but we learnt from our senior colleagues that sometimes we have to call the supervisor to come and see us. After calling her, she did come to see us and at least we felt happy she had responded, though she seemed to be in a hurry. (Year 2 student)

Evidently, there were good aspects of the supervision. However, most of the good aspects of the supervision appeared to be reported by students in senior years as compared to second years. This observation was made for most of the responses.

Using information technology to enhance supervision: All students in this study, regardless of year of study, reported that supervisors could make their own work easy if they frequently contacted them for email and skype sessions.

There would be no need for the supervisor to even come all the time if they can use skype to get in touch with us. (Year 2 student)

I think the COBERS supervisors should embrace the use of current technology. For example organizing a skype session with students at the site saves much more time and resources than physically coming over. (Year 3 student)

Although physical presence is good, supervisors should also think of alternatives like constant use of e-mail and skype to get in touch with students and supervisors. (Year 4 student)

I think when the supervisor cannot make it in person to the site, they can organize skype sessions or video conferencing session where we discuss with together with the site tutor and challenges we could be facing. (Year 5 student)

The common thread across all of these responses and many more that emerged pertained to the use of information technology avenues such as email, skype or even video conferencing to enhance supervision of students and supplement physical visits by the supervisors.

Challenges and ways forward: The students in this study reported some key challenges they had with faculty supervision during COBERS. The following responses are typical.

The initial assistance of supervisors … is excellent as they show great concern and help out a lot. However, once we leave the Campus, the supervisors never help us. We do most of the work on our own and we have no linkage between the COBERS site and the College. Many times there is no follow up from the side of the supervisor once we are in the communities, so we do not know if we are doing the right things. Sometimes even getting the supervisors on [the] phone to remind them to come and supervise us is a challenge so we are left alone. (Year 2 student)

Once supervisors come over, they seem to have limited time …they seem to be in a hurry. (Year 3 student)

What we have observed is that supervisors give us limited feedback regarding our group projects when they come. Sometimes the feedback is not even helpful. (Year 4 student)

The challenge is that as students, we do not know the exact role of a COBERS supervisor vis-à-vis site tutors and probably this makes the supervision of poor quality. Perhaps if we

knew, we would task and engage the supervisors when they come to visit us. (Year 5 student)

The students proposed some key solutions for a way forward. The following responses were a common thread regarding this.

I think COBERS supervisors need to constantly remain in touch with students even when they are in the communities via telephone, skype or e-mail. (Year 2 student)

As students, we should be informed of the roles of COBERS supervisors during the preparatory week at the College such that we are aware and engage our supervisors accordingly. (Year 4 student)

Supervisors need to stay in touch with site tutors such that the site tutors are aware if a supervisor cannot make it. The tutor can then play that supervisory role as well. (Year 2 student)

I think the COBERS Co-ordinating team should remind supervisors to schedule supervision visits through a reminder e-mail when COBERS is running. At least a single physical visit can be supplemented by e-mails, phone calls or skype. (Year 5 student)

Discussion

The survey had a 100% response rate, which is both surprising and quite unusual. The possible explanation for this response rate is most likely for two reasons: the survey was linked to a debrief for a community outreach activity that the students were about to participate in, and the questionnaire was in digital format, it was brief and only captured key information. This was most likely more user-friendly to the students than a paper-based survey.

Findings indicated that the majority of students were generally satisfied with faculty supervision during community placements and there were a number of positive aspects observed, a finding that has been previously reported[1]. A range of factors can be attributed to this observed satisfaction including social, environmental, academic and experiential factors. For many students, the faculty supervisor seemed to be in touch with them either before departing for COBERS or after arriving at the sites. This initial connection with the supervisor could have played a role in this satisfaction. Additionally, the active engagement of supervisors with students just before they depart for COBERS could have played a part. Often, faculty supervisors meet the students before departure to the communities.

However, students in lower years (eg second and third years) expressed less satisfaction than the more senior students (eg fourth and 5th years). In the context of this study, senior students are those students who have been in training longer and have had more exposure to community based training (eg fourth and 5th years), while junior students are those that have been in training for a shorter period and have had less experience of community based training (eg second and third years). This finding resonates well with previous literature where it has been reported that students with less experience of the community are likely to be more anxious than well-acclimatized students[5].

A range of possibilities can explain the above observation. Students with more experience of CBE may have a better predisposition towards it and more superior coping mechanisms while in the communities. Subsequently, they may have less demand from their supervisors than students with less experience of the community, who are less likely to cope independently while in the communities and likely to have more demands and high expectations of supervisors. Such students with more supervision demands while in the communities are likely to rate the supervisors very low when their demands are not met, an observation that is echoed in previous findings[21]. This has a key implication for practice. For example coordinators of community based training modules such as COBERS as well as faculty supervisors need to know that students with less experience of the community might need a lot more help, support and supervision time to make their community experience as fruitful as the more experienced students.

Based on the observations from this study, one can anticipate that students in fourth year, for example, are likely to have a fruitful COBERS experience with just a single supervision visit while a student in first or second year is likely to require more than a single supervision visit to experience a similar COBERS experience. More supervision time needs to be allocated to junior students. For example, extra supervision visits may be helpful for junior students or even frequent contact through phone calls or email to ensure that the students are progressing well. Although the more senior students need supervision as well, it is very likely that they cope well even without frequent supervision visits. Thus, the more available supervisors should be allocated to students in lower years to supervise and efficiently facilitated to do the extra supervision visits.

A key challenge in resource-limited settings is the lack of resources to manage frequent supervision visits to the students while they are in the communities. Not only are the faculty supervisors not enough to match the ever-increasing students numbers at various COBERS sites, but also the few available faculty supervisors are engaged with other activities that must run at the same time. A key solution that was raised by students in this study was the use of information technology in COBERS supervision. A simple email or phone call every week, a 10-minute skype session with the students every 2 weeks inquiring about progress at the COBERS site can be a powerful strategy that supervisors can employ. It has been previously reported that supervision does not only mean physically going to the community site[23]. At MaKCHS, where this study was conducted, students go with modems to community sites and so internet access is available. Supervisors need to frequently communicate with and guide their students via emails and skype rather than solely depending on travelling to the sites. This form of e-supervision is likely to positively influence students' COBERS experience and ultimately increase their satisfaction with supervision.

The limited knowledge of the role of COBERS supervisors and limited effective feedback students receive during COBERS were observed in this study as key challenges. The challenge of unclear roles of supervisors has been observed in previous literature[2]. It is probable that during COBERS preparatory activities at the university, students are not told about what is expected of their supervisors. The supervisors may not know their exact role either. One way of solving this is to brief students about the roles of the COBERS supervisors.

Community-based training is an innovative approach to contextual and service-learning[7] and it is one of the strategies for future retention of health workers in rural communities[18,22,23]. However, achieving this requires the learning experience to be a very interesting one for the students. Effective supervision of students during such community placements is thus crucial to achieving this desired learning experience to ensure that the set outcomes are met. The implications of this study's findings are vital to current practice. Students with less experience of the concept of CBE require more supervision time and support from faculty than senior students who are already exposed to such training. This builds up their confidence and makes their learning better. The integration of information technology into supervision (e-supervision) is also needed to assist faculty to carry out supervision even when physically at the sites.

A key direction for future research is to assess the feasibility of using e-learning during community placements and evaluate the impact of using information technology avenues to enhance student supervision. It is also suggested that future studies look at exploring this subject from the perspective of the faculty supervisors themselves. A limitation of this study is that it was conducted in a single institution and so findings may not be applicable in many other institutions due to contextual differences. However, the study identifies key observations on to which more studies in other settings can build.

Conclusions

This study has demonstrated that although students were generally satisfied with COBERS supervision, there are still some challenges such as infrequent communication and lack

of effective feedback from the supervisors. The junior students with less experience of COBERS are mostly affected and thus may need more attention. Coordinators of community training programs should be aware that simply increasing supervision visits only stretches the already limited human resources amidst other competing institutional demands. Harnessing the potential of information technology strategies (e-supervision) in addition to already existing mechanisms could be one way in which supervision could be improved amidst limited numbers of staff vis-à-vis rising student numbers.

Acknowledgement

References

1. Kaye D, Mwanika A, Burnham G, Chang LW, Mbalinda SN, Okullo I, et al. The organization and implementation of community-based education programs for health worker training institutions in Uganda. *BMC International Health and Human Rights* 2011; **11(Suppl 1):** S4.

2. Mbalinda SN, Plover CM, Burnham G, Kaye D, Mwanika A, Oria H et al. Assessing community perspectives of the community based education and service model at Makerere University, Uganda: a qualitative evaluation. *BMC International Health and Human Rights* 2011; **11(Suppl 1):** S6.

3. Mpofu R, Imalingat A. The development of an instrument for assessing community-based education of undergraduate students of community and health sciences at the University of the Western Cape. *Education for Health (Abingdon, England)* 2000; **19(2):** 166-178.

4. Okayama M, Kajii E. Does community-based education increase students' motivation to practice community health care? - a cross sectional study. *BMC Medical Education* 2011; **11:** 19.

5. Kelly L, Walters L, Rosenthal D. Community-based medical education: is success a result of meaningful personal learning experiences? *Education Health* 2014; **27:** 47-50.

6. Farnsworth TJ, Frantz AC, McCune RW. Community-based distributive medical education: advantaging society. *Medical Education Online* 2012; **17:** 8432.

7. Mwanika A, Okullo I, Kaye DK, Muhwezi W, Atuyambe L, Nabirye RC, et al. Perception and valuation of community-based education and service by alumni at Makerere University College of Health Sciences. *BMC International Health and Human Rights* 2011; **11(Suppl 1):** S5.

8. Stanton T. Service-learning. Groping towards a definition. In: JC Kendall and Assoc. (eds). *Combining service and learning: a resource book for community and public service.* Vol. 1. Raleigh, NC: National Society for Experiential Education. 1990; 65-67.

9. Mpofu R, Daniels P, Adonis T. Student perceptions of community service learning experiences in community health services. *Proceedings of The Network International Conference, Overcoming Health Disparities: Global Experiences from Partnerships between Communities, Health Services and Health Professional Schools.* Atlanta, GA: The Network: Towards Unity for Health, 2004.

10. Mubuuke AG, Kiguli-Malwadde E, Byanyima R, Businge F. Evaluation of community based education and services course for undergraduate radiography students at Makerere University, Uganda. *International Electronic Journal of Rural and Remote Research, Education, Practice & Policy* 2008; **8:** 976.

11. Crampton PES, McLachlan JC, Illing JC. A systematic literature review of undergraduate clinical placements in underserved areas. *Medical Education* 2013; **47(10):** 969-978.

12. Maddams J, Miller K, Rushforth B. Primary care career advice: a student perspective. *Clinical Teacher* 2012; **9(2):** 105-107.

13. Nyangairi B, Couper ID, Sondzaba NO. Exposure to primary healthcare for medical students: experiences of final-year medical students. *South African Family Practice* 2010; **52(5):** 467-470.

14. Pearson DJ, McKinley RK. Why tomorrow's doctors need primary care today. *Journal of Royal Society of Medicine* 2010; **103:** 9-13.

15. Sub-Saharan African Medical Schools Study (SAMSS). *SAMSS site visit report: Makerere University College of Health Sciences.* (Internet) 2009. Available: http://www.samss.org (Accessed 10 October 2014).

16. Pariyo G, Serwadda D, Sewankambo N, Groves S, Bollinger RC, Peters DH. A grander challenge: the case of how Makerere University College of Health Sciences (MakCHS) contributes to health outcomes in Africa. *BMC International Health and Human Rights* 2011; **11(Suppl 1):** S2.

17. Kiguli-Malwadde E, Kijjambu S, Kiguli S, Galukande M, Sewankambo N, Luboga S, et al. Problem based learning, curriculum development and change process at Faculty of Medicine, Makerere University, Uganda. *African Health Sciences Journal* 2006; **6(2):** 127-130.

18. Eley D, Baker P. Does recruitment lead to retention? Rural schools' training experience and subsequent intern choices. *Rural and Remote Health* (Internet) 2006; **6:** 511. Available: www.rrh.org.au (Accessed 1 November 2014).

19. Zink T, Power DV, Finstad D, Brooks KD. Is there equivalency between students in a longitudinal, rural clerkship and a traditional urban-based program? *Family Medicine* 2010; **42(10):** 702-706.

20. Couper I, Worley P, Strasser R. Rural longitudinal integrated clerkships: lessons from two programs on different continents. *Rural and Remote Health* (Internet) 2011; **11:** 1665. Available: www.rrh.org.au (Accessed 1 October 2013).

21. Barrett FA, Lipsky MS, Nawal Lutfiyya M. The impact of rural training experiences on medical students: a critical review. *Academic Medicine* 2011; **86(2):** 259-263.

22. Strasser R, Hogenbirk JC, Lewenberg M, Story M, Kevat A. Starting rural, staying rural: how can we strengthen the pathway from rural upbringing to rural practice? *Australian Journal of Rural Health* 2010; **18(6):** 242-248.

23. Roberts C, Daly M, Kumar K, Perkins D, Richards D, Garne D. A longitudinal integrated placement and medical students' intentions to practise rurally. *Medical Education* 2012; **46(2):** 179-191.

24. Kate AL. Study design III: cross-sectional studies. *Evidence-Based Dentistry* 2006; **7:** 24-25.

25. DiCicco-Bloom B, Crabtree BF. The qualitative research interview. *Medical Education* 2006; **40(4):** 314-321.

26. Krueger RA, Casey MA. *Focus groups: a practical guide for applied research.* 4th edn. Thousand Oaks, CA: Sage, 2009.

27. Barbour R. *Doing focus groups.* London: Sage, 2007.

28. Marshall G, Jonker L. An introduction to inferential statistics: a review and practical guide. *Radiography* 2011; **17(1):** e1-e6.

29. Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology* 2008; **8:** 45.

Appendix I: Questionnaire about faculty supervision during community-based education, research and service

QUESTIONNAIRE   No:

Dear Participant,
This Questionnaire has been developed to explore your views regarding faculty supervision during COBERS. The information got will be used to improve COBERS supervision. Information provided on this questionnaire will be treated with the utmost confidentiality and do not write your name on to the questionnaire.

Date:………………………………….

Demographics.

Year of study:

Gender (circle correct option): Male   Female

From your point of view how true are these statements with regard to faculty supervision during COBERS? Respond to each statement by giving a tick where you think is appropriate.
Key: 3=Agree, 2=Disagree, 1=Neutral.

	1	2	3
I understand the meaning of COBERS			
I understand the objectives of the COBERS programme			
I know the role of my COBERS faculty supervisor			
I contacted my supervisor before leaving for the community			
I had time to meet my supervisor before leaving for the community			
My supervisor was willing to meet me before leaving for the community placement			
I was satisfied with my discussion with the supervisor before leaving for community placement			
I had some academic issues for clarification before departing for COBERS			
I had my issues clarified with my supervisor before leaving for COBERS			
My supervisor kept in touch to see if I had arrived at the site			
The COBERS site supervisor visited more than once at my site			
The COBERS supervisor visited once my site			
The COBERS supervisor never visited at all during my stay at the site			
During his/her visit, the supervisor was eager to know my academic progress			
I discussed with my supervisor the activities accomplished during his/her visit to the site			
I discussed with my supervisor during his/her visit the challenges I was facing at the site			
The supervisor gave me feedback regarding my progress during his/her visit to the site			
I discussed social challenges with my supervisor during his/her visit to the site			
The supervisor kept in touch with us at the site through telephone			
The supervisor kept in touch with us at the site through e-mail			
The supervisor kept in touch with us at the site through skype			
I am satisfied that my complaints regarding COBERS were delivered to relevant authorities by my supervisor			
During COBERS report writing, the supervisor constantly gave us guidance			
The supervisor kept in touch with the site tutor to monitor our progress			
In my view, the supervisor performed his/her student supervisory duties well			
The supervisor kept in touch with us until we handed in the COBERS report			
Overall, am satisfied with the performance of my COBERS supervisor			

Appendix II: Focus group questions

Qn. 1. In your opinion, what do you think are the roles of COBERS from the college?
Qn. 2. How do you comment about the supervision you got from your supervisor while at the COBERS sites?
Qn. 3. What were the strengths of your COBERS supervisor?
Qn. 4. What were the weaknesses of the COBERS supervisor?
Qn. 5. How would you like faculty support supervision for COBERS to be improved to make it better experience for students?
Any other comments?