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ORIGINAL RESEARCH

Health-profession students' teaching and learning expectations in Ugandan medical schools: pre- and postcommunity placement comparison

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Purpose: The benefits of community-based medical education for both students and teachers are becoming increasingly clear. However, there is paucity of information about the importance of incorporating students' thoughts in the community-based education curriculum and the impact it has on their intentions to work in rural communities. The purpose of this study was to assess the teaching and learning expectations before and after placement of health-profession students going for community placement for the first time and make suggestions for improvement of the community-based programs.

Methods: The study was a cross-sectional survey with both structured and unstructured questions. Participants were recruited from four medical schools in Uganda targeting 100% participation of health-profession students going for community placement in 2014. In total, 454 and 305 participants responded to self-administered questionnaires before and after community placement, respectively; and they were from different programs and years of study.

Results: Students' learning expectations before placement, in ranking were: community engagement, interpersonal skills, community diagnosis, clinical skills, lifestyle practices, and patient management. After placement, the order of ranking was: interpersonal skills, community engagement, community diagnosis, lifestyle practices, clinical skills, and patient management. Most of the students had prior rural exposure and expected to do community engagement. However, after community placement they indicated having developed interpersonal skills. The various health-profession students were able to harmoniously work together to achieve a common purpose, which they find difficult to do in a classroom environment.

Conclusion: Having student teams comprised of different health programs and years of study going for community placement together promoted peer-to-peer mentorship and enhanced team building during community placement.

Keywords: Minimum competencies, MESAU, community based education and Uganda, community-based education

Introduction

Community-based education (CBE) involves shifting teaching and learning from a lecture room into the community to interface with the needs of host communities. The benefits of community-based medical education for both students and teachers are becoming increasingly clear.[1] These include community capacities built to address future health and social issues, enjoyment of the practice of medicine, time spent reviewing clinical medicine, desire to keep up with recent developments in medicine, and understanding the link between theory and practice.[2–4] In order to meet the current health workforce needs, global health leaders have called on training institutions to scale

up the production of health workers with curricula that are community-, competency-, and team-based.[5] This is because innovations in medical education are leading to the emergence of transformative learning where emphasis is on professional competencies such as clinical/practical skills, communication skills, leadership, professionalism, and ethical practice as opposed to focusing on knowledge only.[6] National reports of both practitioners and academicians have called for more competency-driven, interdisciplinary-focused, community-based, service-oriented, and experientially-guided learning for students across the curriculum.[7,8] In Uganda, reducing the disease burden and addressing health challenges require Ugandan medical schools to produce health workers with the necessary competencies.[9] Consequently, in 2011, five medical schools in Uganda formed the Medical Education for Equitable Services for All Ugandans (MESAU) consortium to address the medical education challenges in meeting the nation's health needs.[6,10] Through detailed consultations with stakeholders and a series of meetings, workshops, and seminars, the MESAU consortium came up with nine key competency domains for all the five medical schools to be incorporated into the various medical school curricula with an aim of producing graduates with common attributes.[6]

The consortium, comprised of Makerere College of Health Sciences (MakCHS), Mbarara University of Science and Technology (MUST), Busitema University, Gulu University, and Kampala International University (KIU), with support from the Medical Education Partnership Initiative[11] has created opportunities for students to interact with communities to engender enthusiasm about service in underserved communities[12] through CBE.

However, there is paucity of information about the importance of incorporating students' thoughts in the CBE curriculum and the impact it has on their intentions to work in rural communities. Analyzing the effectiveness of CBE in light of the health-profession students' teaching and learning expectations before and after community placement is very important in increasing the number and retention of high-quality committed health workers in underserved areas.

The aim of this study was to assess the teaching and learning expectations of health-profession students going for community placement for the first time before community placement and compare their views upon returning from the placement. The rationale was to make suggestions for improvement of community-based programs with an assumption that they are an incentive for the health-profession students' intentions to work in rural communities.

The main issues addressed in this paper are 1) students' learning expectations while in the community, 2) motivators for the teaching and learning experience, and 3) ideal length of stay in the community and the number of exposures.

Throughout this paper, the health-profession students refers to students in the medical school regardless of the program offered.

Methods

Research approach

This study was a cross-sectional survey with both structured and open-ended questions. The rationale of a cross-sectional study was to determine the frequency of attributes to the study variables. It was considered that the unstructured responses would usefully supplement and extend the structured analysis. The first set of data collection was done using a self-administered questionnaire just before the orientation program for community placement commenced; the other data were collected after community placement. Prior to data collection, the tool was pretested and edited to take care of the existing gaps and irregularities.

Participants' characteristics

Participants were recruited from four medical schools in Uganda located in the North (Gulu University), Central (MakCHS), and southwestern (MUST and KIU) regions covering urban and semiurban areas. Eligibility criteria were health-profession students going for community placement for the first time in 2014. The medical schools conduct orientation programs for health-profession students prior to community placement. Interviews were therefore carried out before the orientation program commenced, debriefing students about what to expect in the community.

In order to obtain the health-profession students' perceptions across the four medical schools, the study targeted 100% participation of individuals going for community placement in 2014 since the exact number of students was not originally known. At the data collection stage, the actual numbers of students going for community placement were established, and the overall response rate was kept at 75.1%.

The study population comprised of first-year health-profession students from MakCHS and KIU; second-year Pharmacy students, third-year Medical Laboratory Science students, third-year Nursing Science students, and fourth-year MBChB students from MUST; and fourth-year MBChB students from Gulu University Medical School.

Data collection

Prior to commencing the study, ethical clearance was sought from Mbarara University of Science and Technology Research Ethics Committee and the Uganda National Council for Science and Technology (reference number MUIRC 1/7).

Following ethical clearance, permission was sought from respective community placement coordinating team heads to gather information from students before starting the community placement orientation program. The survey tool was pretested for validity and reliability prior to data collection and adjusted accordingly.

The study was introduced to the students explaining its importance. Upon obtaining written informed consent, the health-profession students were invited to respond to a 20-minute precoded questionnaire which they returned soon after completion. Participants were requested to memorize and safely store the code on the questionnaire as it was required again when responding to the postcommunity placement questionnaire. This exercise was repeated across the four study sites whenever the students were preparing to go for community placement in 2014. Respective medical schools, depending on their academic calendar, take students for community placement at different times of the year.

Each study participant was invited to respond to the questionnaire twice during the study period (Figure S1 and S2). The first questionnaire (pre) was administered prior to community placement and the second (post) was administered soon after community placement.

The health-profession students go to different community sites all over Uganda. With the help of the community program coordinators, lists of placement sites were obtained indicating the team leaders. These team leaders were co-opted as research assistants to gather data after community placement. They were trained on what to do and given consent forms which were to be filled prior to receiving a questionnaire. Consent forms and questionnaires were packed in parcels according to the number of students per community site irrespective of whether they were all to be filled or not. The rationale of sending the questionnaires to the community sites was to gather information from the participants when their experience was still fresh because after community placement, students go home on recess.

The post questionnaires and consent forms were delivered to us at the respective study sites as soon as the team leaders returned from the community placement sites. These questionnaires were in turn given to the corresponding author for data management and analysis. Each study site had a coinvestigator who is an author of this paper.

Data analysis procedures

Data management and analysis were performed using Microsoft Excel and STATA 12 statistical software (StataCorp, College Station, TX, USA). Data from the questionnaires were entered in Microsoft Excel files per medical school before and after community placement. The quantitative questions from excel were then exported to STATA 12 (StataCorp), cleaned, and validated. The open-ended responses were transferred to a Microsoft Word document for thematic coding.

The quantitative questions were analyzed per medical school and then as a combination of the four medical schools for frequencies and percentages, which were presented in tables, pie charts, and bar graphs.

The open-ended responses were analyzed before and after community placement under common themes which were assigned codes, manually recorded, and counted. The number of times a response appears does not reflect the number of participants in the study but the frequency it appears. The open-ended questions were used to gather expanded response to the quantitative questions; participants therefore could have multiple responses to each question.

Results

Before community placement, the study had 454 respondents with a distribution of 263 (57.93%) from MUST, 78 (17.18%) from KIU, 84 (18.5%) from MakCHS, and 29 (6.39%) from Gulu University. After community placement, out of the 305 respondents, 186 (60.98%) responses were from MUST, 55 (18.03%) from KIU, 42 (13%) from MakCHS, and 22 (7.21%) from Gulu University. Of the responses, at precommunity placement, the study had 141 (33%) females and 289 (67%) males while at postcommunity placement, 97 (33%) females and 194 (67%) males.

Overall, there were 192 (43%) first-year students at precommunity placement and 108 (36%) at postcommunity placement; 66 (15%) second-year students pre- and 43 (14%) postcommunity placement; 92 (21%) third-year students pre- and 77 (25%) postcommunity placement; 92 (21%) fourth-year students pre- and 73 (24%) postcommunity placement; and 1 (0.2%) fifth-year students pre- and 2 (0.6%) postcommunity placement.

Students' learning expectations while in the community

In response to what the health-profession students expected to learn while in the community (n=frequency), most responses

(159) before community placement indicated community engagement, then interpersonal skills (130), community diagnosis (93), clinical skills (89), lifestyle practices (60), and patient management/understanding systems (54). Upon return from community placement, most responses (127) indicated interpersonal skills, then community engagement (70), community diagnosis (68), lifestyle practices (67), clinical skills (63), and patient management (29).

At precommunity placement when asked how they expected their lives to be affected, 63 respondents listed gaining knowledge and skills; rural exposure (110); attitude change and opportunities (106); and interpersonal, communication and leadership skills (76). After community placement, majority of the responses (93) indicated that community placement had impacted their lives through interpersonal, communication, and leadership skills; knowledge and clinical skills (82); rural exposure (79); and attitude change and opportunities (77).

In reference to minimum competencies set by MESAU, the respondents were asked why they thought community placement was good for them as health-profession students before and after community placement. Table 1 details the benefits and how the participants responded. Exposure through community engagement featured 23 times at pre- and 91 times postcommunity placement among the responses although it is not among the minimum competencies.

The students were asked to what extent they agreed or disagreed with the minimum competencies in relation to their training before and after community placement. Segregated by medical schools, Table 2 presents the minimum competencies and how the health-profession students agreed or disagreed with the statement.

Table 1 Health profession students views on the benefits of community placement, pre- and postcommunity placement

	Precommunity placement (n)	Postcommunity placement (n)
Medical knowledge	17	6
Clinical skills and patient care	134	85
Critical inquiry and scientific method	4	12
Professionalism and ethical practice	107	7
Interpersonal and communication skills	104	31
Leadership and management skills	30	59
Population health	0	55
Reflective practice	0	0
Health system management	35	14

Necessities and motivators for teaching and learning experience while in the community placement

Before community placement, students listed the following requirements as necessary for their learning during community placement: infrastructure, including transport and accommodation (260 responses); basic supplies, including water, electricity, food, and security (244); money (188); working tools, including blood pressure (BP) machines, boots, cameras, and stationery (127); supervisors/mentors (79); medical supplies (53); and interpreters (23).

After community placement, the highest mentioned necessities were working tools, including BP machines, boots, cameras, and stationery (136 responses), followed by infrastructure (transport and accommodation) and money, each with 110 responses; basic supplies including water, electricity, food, and security (93); supervisors/mentors (65); and interpreters (20).

The interactive teaching and learning methods the students considered suitable while in the community for placement were group learning with discussions (192 responses), demonstrations/medical illustrations (85), problem-based learning with case studies (65), community engagement (62), using questions/interviews (60), and lectures (33). After community placement, group learning with discussions still had the majority of responses, (138), followed by demonstrations/medical illustrations (112), questions/interviews (67), community engagement (48), lectures (31), and problem-based learning with case studies (19).

Motivators

Students who took part in the study (preplacement) indicated basic requirements (food, water, shelter, and power) and money as the major motivators for their teaching and learning experience during community placement with 180 responses each; infrastructure (transport and accommodation) had 160 responses, availability of supervisors (90), team work (35), and cooperative community (28).

After community placement, money and infrastructure had the most responses of 178 and 124, respectively, followed by basic requirements (food, water, shelter, and power) and supervisors at 116 and 87, respectively, cooperative community (48), and team work (23).

Ideal length for community placement

Table 3 shows the combined respondents' ideal length of stay in the community to learn enough and practice skills.

Table 2 Minimum competencies rated per medical school in Uganda

Minimum competencies	Response	Precommunity, n (%)	Postcommunity, n (%)
Medical knowledge			
Gulu University	Agreed	9 (33)	22 (100)
	Disagreed	18 (67)	0 (0%)
KIU	Agreed	76 (98.7)	4 (98.2)
	Disagreed	1 (1.3)	1 (1.8)
MUST	Agreed	244 (95.31)	182 (98)
	Disagreed	6 (2.34)	3 (2)
MakCHS	Agreed	76 (93)	40 (96)
	Disagreed	3 (4)	–
Clinical skills and patient care			
Gulu University	Agreed	24 (88.9)	19 (90)
	Disagreed	2 (7.4)	0 (0%)
KIU	Agreed	63 (86)	51 (93)
	Disagreed	5 (7)	1 (2)
MUST	Agreed	230 (90.2)	175 (95)
	Disagreed	8 (3.14)	3 (2)
MakCHS	Agreed	65 (79)	33 (80.49)
	Disagreed	1 (1.22)	2 (4.88)
Critical inquiry and scientific method			
Gulu University	Agreed	22 (81.48)	819 (6.36)
	Disagreed	2 (7.4)	1 (4.55)
KIU	Agreed	67 (89)	50 (93)
	Disagreed	5 (7)	0 (0%)
MUST	Agreed	224 (88)	174 (94.05)
	Disagreed	6 (2.35)	5 (2.7)
MakCHS	Agreed	53 (65)	33 (80)
	Disagreed	6 (7)	0 (0%)
Professionalism and ethical practice			
Gulu University	Agreed	26 (96.3)	22 (100)
	Disagreed	–	0 (0%)
KIU	Agreed	74 (99)	54 (98)
	Disagreed	–	0 (0%)
MUST	Agreed	182 (71)	180 (97)
	Disagreed	17 (7)	2 (1.08)
MakCHS	Agreed	71 (89)	39 (95.12)
	Disagreed	2 (3)	0 (0%)
Interpersonal and communication skill			
Gulu University	Agreed	26 (96.3)	20 (91)
	Disagreed	–	1 (4.55)
KIU	Agreed	67 (89)	50 (91)
	Disagreed	2 (3)	4 (4)
MUST	Agreed	244 (96.06)	181 (97)
	Disagreed	5 (2)	3 (2)
MakCHS	Agreed	75 (91)	41 (100)
	Disagreed	3 (4)	0 (0%)
Leadership and management skills			
Gulu University	Agreed	15 (58)	16 (73)
	Disagreed	–	2 (10)
KIU	Agreed	65 (87)	51 (93)
	Disagreed	1 (1.33)	2 (4)
MUST	Agreed	219 (86)	175 (95)
	Disagreed	9 (4)	2 (1.09)
MakCHS	Agreed	67 (82)	37 (90.25)
	Disagreed	6 (7.32)	1 (2.44)
Population health			
Gulu University	Agreed	21 (78)	18 (81.8)
	Disagreed	2 (2.4)	0 (0%)
KIU	Agreed	69 (92)	52 (95)
	Disagreed	1 (1.33)	0 (0%)
MUST	Agreed	236 (92)	178 (96)
	Disagreed	3 (1.17)	2 (1.08)
MakCHS	Agreed	65 (79.27)	37 (90.25)
	Disagreed	4 (5)	1 (2.44)
Continuous improvement of care through reflective practice			
Gulu University	Agreed	21 (80.77)	17 (77.28)
	Disagreed	3 (11.57)	1 (4.55)
KIU	Agreed	62 (84)	50 (91)
	Disagreed	2 (3)	3 (5.46)
MUST	Agreed	216 (84)	172 (93)
	Disagreed	8 (3.12)	4 (2.17)
MakCHS	Agreed	59 (72)	34 (83)
	Disagreed	4 (5)	1 (2.44)
Health system management			
Gulu University	Agreed	19 (70.37)	18 (82)
	Disagreed	4 (14.82)	1 (4.55)
KIU	Agreed	61 (84)	46 (85)
	Disagreed	2 (3)	2 (4)
MUST	Agreed	188 (73.43)	162 (88)
	Disagreed	12 (5)	3 (1.63)
MakCHS	Agreed	52 (63)	36 (88)
	Disagreed	7 (9)	1 (7.32)

Note: Values do not add to 100% as participants did not reply to all questions.
Abbreviations: KIU, Kampala International University; MUST, Mbarara University of Science and Technology; MakCHS, Makerere College of Health Sciences.

Discussion

The results presented show that most of the respondents came from MUST, while the least number was from Gulu University. MUST had a large number of participants because they had students from different programs and years of study going for community placement for the first time, while participants of other medical schools were from only one year of study or from the same program. Gulu University had the least

Table 3 Ideal length of stay for health-profession students' community placement

	Precommunity placement, n (%)	Postcommunity placement, n (%)
Less than 4 weeks	89 (20.05)	35 (11.63)
4–5 weeks	212 (47.75)	133 (44.19)
6–7 weeks	66 (14.86)	55 (18.27)
8–10 weeks	56 (12.61)	59 (19.6)
More than 10 weeks	20 (4.5)	19 (6.31)
Unnecessary	1 (0.23)	–
Total	444 (100)	301 (100)

Notes: There were no responses for 5–6 weeks. Participants did not reply to all questions.

number of participants because they have very few students admitted to a program at one time. It is however, important to note that almost all the Gulu students due for placement took part in the study.

Students' learning expectations

The students expected to do community engagement activities like health education, immunization, HIV counseling, and testing, but it turned out that most of them reported development of interpersonal, communication, and leadership skills as evidenced in the postcommunity placement responses. This can be attributed to the different perceptions each one had and the team composition per community site where they were grouped according to different programs and years of study.

Relating to other researchers, student approaches to learning vary from surface approaches to meaningful, deep learning practices[13] and are related to their perceptions of the learning environment.[14] Health-profession students were able to harmoniously work together. The students included medicine, nursing science, medical laboratory, and pharmacy students among other programs of study to achieve a common purpose, which is not often done in a classroom environment. It is therefore beneficial for institutions taking health-profession students for community placement to mix programs and years to facilitate mentorship and sharing of best practices among students.

Turning to the medical competencies, some researchers feel the core competencies of undergraduate medical education should be defined universally and be used to guide new curriculum structures.[15] This is in line with what MESAU did in defining minimum competencies. In this study, all the study participants were going for community placement for the first time but were not at the same level of competencies; the second-, third-, and fourth-year students were in a better position to talk about their teaching and learning expectations than the first-year participants. This scenario created an opportunity for peer teaching, which has been recognized as a valuable and effective approach for learning.[16] Previous studies have shown that cross-year peer tutoring programs in medical education can enhance the skills of volunteer tutors and learners alike.[17]

Necessities and motivators for teaching and learning experience

In order to have a meaningful teaching and learning experience during community placement, the health-profession students imagined that infrastructure (transport and accommodation) was the most important. However, after community placement, the most important necessities were working tools (BP machines, boots, cameras, and stationery) to facilitate their teaching and learning experience. The students were able to understand the priorities when faced with the need to practice in a less facilitated environment with group learning as the preferred interactive teaching and learning method.

Before community placement, the students' major motivators were availability of basic requirements like food, water, shelter, power, and money; however, after community placement, money and infrastructure (transport and accommodation) were the important motivators for teaching and learning. The shift in responses was after the students had experienced the rural communities without direct provision and needed to survive beyond the basics of life as a health-professional. Money is perceived to change people's motivation and their behavior toward others,[18] including being a settlement between children's social demands and those of their parents; as a result, the social ecology of money use in both children and their parents sets the stage for value construction of the meaning of money.[19] The findings from this study are in agreement with other researchers.

Recognizing the need to motivate the health-profession students while in the community to maximize their teaching and learning experiences is important if they are to go back and work in the rural communities. As Marslow's theory states,[20] a human being is motivated by a hierarchy of needs such as 1) physiological: hunger, thirst, bodily comforts; 2) safety/security: out of danger; 3) belongingness and love: affiliate with others, be accepted; and 4) esteem: to achieve, be competent, gain approval, and recognition. Motivating health-professionals to work in less facilitated communities is paramount for effective and efficient operation.

Ideal length for community placement

The structure of community placement in Ugandan medical schools is such that there are core activities each student is required to accomplish within a given period of time ranging from 4 to 6 weeks. This time frame is in line with the respondents' overall responses. Within that period, the students are required to conduct an operational research in the course of implementing CBE activities aimed at improving health-care provision. They are given adequate time to practice the skills they have acquired; this leadership and management training model equips the students with knowledge, attitudes, and skills of leading and managing practices.

MUST students preferred two community exposures at different placement sites to gain varied experience as opposed

to one; KIU students initially indicated three exposures; however, upon return from the community, the majority of students preferred two exposures. The reduction in the preferred number of exposures was influenced by the experience during community placement; the KIU respondents were in their first year of study and did not know what to expect. MakCHS students preferred three exposures, while in Gulu University health-profession students there was a shift from the preferred 6–7 weeks, to various preferences of 4–5 weeks (31.82%), 6–7weeks(31.83%), and 8–10weeks (31.38%); however, upon return they had equally divided varying responses although the students all preferred two exposures. This study did not get the reasons for the variation and recommends investigation into responses. It is important for all the medical schools to revisit the number of exposures for the health-profession students as there is a possibility that they would benefit from comparing the two experiences to make an informed decision about working in the rural communities after school.

Limitations

The study largely had participants from MUST both at pre- and postcommunity placement (263 participants, 58%) and (186 participants, 61%), respectively. The results presented may not clearly represent the views of health-profession students across the four medical schools in Uganda.

Second, there were a significant number of first-year students (192 participants, 43%) at precommunity placement and (108 participants, 36%) postcommunity placement as compared to those from other years of study. These first-year students did not have adequate knowledge in medical education to ably represent the students' teaching and learning expectations.

Conclusion

Initially, the assumption was that community placement could be an incentive for the health-profession students going for community placement for the first time to work in rural settings; the study however found that most of the participants had prior rural exposure contrary to what the researchers had anticipated, so it is not a significant factor. The key message from the study is that having student teams comprised of different health programs and years of study going for community placement together promotes peer-to-peer mentorship and enhances team building during community placement.

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Disclosure

The authors report no conflicts of interest in this work.

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Supplementary materials

Students views in community based education: A case of MESAU institutions
health-professions students teaching and learning expectations
University code…… Participant ID#……

As part of the health-profession training, you spend some weeks in the community to undertake Community based medical Education Research and services (COBERS) putting into practice what you have learnt; you are expected to take part in activities at the health facilities as well as in the community. Below is a survey to gather your teaching and learning expectations before going for community placement and after they return from community.

Section A: General information

A1: Sex 1. Female 2. Male

A2: Year of study

1. Year one
2. Year two
3. Year three
4. Year four
5. Year five

A3: Program of study

1. Pharmacy
2. Medical Laboratory Science
3. Nursing
4. MBChB
5. Other (Specify……..)

A4: In your entire life, have you ever been in a rural setting to carry out any form of activity?

1. Yes
2. No

A5: What proportion (weeks, months, years) of your life have you spent in

1. Rural setting (specify……..)
2. Urban setting (specify……..)

A6: Do you have any fears about community placement?

1. Yes
2. No

A7: Do you think community placement is a good idea for you as a health-profession student?

1. Yes
2. No

A8: In your opinion, what is the ideal length of period for community placement for you to learn enough and practice your skills?

1. Less than 4 weeks
2. 4 to 5 weeks
3. 6 to 7 weeks
4. 8 to 10 weeks
5. More than 10 weeks (specify……)

A9: In your opinion, what is the ideal number of community exposures you think you require in your entire study period?

1. One exposure
2. Two exposures
3. Three exposures
4. Other (specify……)

Figure S1 (*Continued*)

Section B: The minimum competencies

The MESAU consortium institutions with participation of Ministries of Education and of Health defined the minimum competencies required for medical education in Uganda. Using the nine MESAU wide competencies in bold letters as a basis, to what extent do you agree or disagree to the statements below?

		1 Strongly agree	2 Somewhat agree	3 Neutral/no opinion	4 Somewhat disagree	5 Strongly disagree
B1	**Medical knowledge:** I have the ability to recall knowledge of human structure, function, development and Pathophysiology; and of epidemiological and social-behavioral sciences and apply it in providing care to individuals, families and society					
B2	**Clinical skills and patient care:** I effectively use motor and cognitive skills to provide appropriate diagnose, management and prevention of common health problems encountered in patient care.					
B3	**Critical inquiry and scientific method:** I understand and use scientific theory, methodology and critical thinking skills to conduct research, interpret findings and apply these to improve individual, family and community health					
B4	**Professionalism and ethical practice:** I demonstrate through knowledge and behavior a commitment to the highest standards of clinical care, ethics, integrity and accountability to the patient, society and the profession					

Figure S1 (*Continued*)

B5	**Interpersonal and communication skill:** I demonstrate effective interpersonal and communication skills with a wide range of individuals and groups in order to provide appropriate health care					
B6	**Leadership and management skills:** I have appropriate leadership and management skills for effective and efficient health systems					
B7	**Population health:** I have the ability to work with the community to promote health, prevent disease and empower communities in order to produce a healthy population					
B8	**Continuous improvement of care through reflective practice:** I have the ability to investigate and evaluate practice, appraise and assimilate scientific evidence, and to continuously improve health care based on constant self-evaluation and lifelong learning					
B9	**Health systems management** I understand the composition, organization, economics and other interrelated dynamics components of health service provision and the ability to practice within the health system					

Figure S1 (*Continued*)

Section C:

C1: What form of activity have you carried out in a rural setting if any?

……

……

……

C2: What are your fears about community placement if any?

……

……

C3: If you have no fears, what is the source of your confidence?

……

……

C4: What do you expect to learn when you go to the community?

……

……

C5: How do you expect COBERS placement to affect your life?

……

……

C6: Why do you think community placement is good for you as a health-profession student?

……

……

C7: List requirements which you consider necessary to facilitate your learning during community placement?

……

……

C8: What is your opinion about the nine competencies in questions Section B above?

……

……

C9: List the interactive teaching and learning methods you would consider suitable for you while in the community for placement?

……

……

C10: In your opinion, list the most important 5 items you would consider as motivators (wish to have) for your learning experience while for COBERS placement

……

……

Figure S1 Pre-community placement questionnaire.
Abbreviation: MESAU, Medical Education for Equitable Services for All Ugandans.

Students views community based education: A case of MESAU institutions health professions students teaching and learning expectations

University code…… Participant ID#……

As part of the health-profession training, you spend some weeks in the community to undertake Community based medical Education Research and services (COBERS) putting into practice what you have learnt; you are expected to take part in activities at the health facilities as well as in the community. Below is a survey to gather your teaching and learning expectations before going for community placement and after they return from community.

Section A: General information

A1: Sex 1. Female 2. Male

A2: Year of study

6. Year one
7. Year two
8. Year three
9. Year four
10. Year five

A3: Program of study

6. Pharmacy
7. Medical laboratory science
8. Nursing
9. MBChB

A4: In your entire life, have you ever been in a rural setting to carry out any form of activity?

3. Yes
4. No

A5: What proportion (weeks, months, years) of your life have you spent in

3. Rural setting (specify……..)
4. Urban setting (specify……..)

A6: Did you have any fears about community placement?

3. Yes
4. No

A7: Do you think community placement is a good idea for you as a health-profession student?

3. Yes
4. No

A8: In your opinion, what is the ideal length of period for community placement for you to learn enough and practice your skills?

6. Less than 4 weeks
7. 4 to 5 weeks
8. 6 to 7 weeks
9. 8 to 10 weeks
10. More than 10 weeks (specify……)

A9: In your opinion, what is the ideal number of community exposures you think you require in your entire study period?

5. One exposure
6. Two exposures
7. Three exposures
8. Other (specify……)

Figure S2 (*Continued*)

Section B: Tminimum competencies

The MESAU consortium institutions with participation of Ministries of Education and of Health defined the minimum competencies required for medical education in Uganda. Using the nine MESAU wide competencies in bold letters as a basis, to what extent to you agree or disagree to the statements below?

		1 Strongly agree	2 Somewhat agree	3 Neutral/no opinion	4 Somewhat disagree	5 Strongly disagree
B1	**Medical knowledge:** I have the ability to recall knowledge of human structure, function,development and Pathophysiology; and of epidemiological and social-behavioral sciences and apply it in providing care to individuals, families and society					
B2	**Clinical skills and patient care:** I effectively use motor and cognitive skills to provide appropriate diagnose, management and prevention of common health problems encountered in patient care					
B3	**Critical inquiry and scientific method:** I understand and use scientific theory, methodology and critical thinking skills to conduct research, interpret findings and apply these to improve individual, family and community health					
B4	**Professionalism and ethical practice:** I demonstrate through knowledge and behavior a commitment to the highest standards of clinical care, ethics, integrity and accountability to the patient, society and the profession					

Figure S2 (*Continued*)

B5	**Interpersonal and communication skill:** I demonstrate effective interpersonal and communication skills with a wide range of individuals and groups in order to provide appropriate health care					
B6	**Leadership and management skills:** I have appropriate leadership and management skills for effective and efficient health systems					
B7	**Population health:** I have the ability to work with the community to promote health, prevent disease and empower communities in order to produce a healthy population					
B8	**Continuous improvement of care through reflective practice:** I have the ability to investigate and evaluate practice, appraise and assimilate scientific evidence, and to continuously improve health care based on constant self-evaluation and lifelong learning					
B9	**Health systems management** I understand the composition, organization, economics and other interrelated dynamics components of health service provision and the ability to practice within the health system					

Figure S2 (*Continued*)

Section C:

C1: What activities did you carry out in a rural setting if any?

……

……

.....

C2: What were your fears about community placement if any?

……

……

C3: If you had no fears, what was the source of your confidence?

……

……

C4: What did you learn while in the community?

……

……

C5: How did COBERS placement affect your life?

……

……

C6: Why do you think community placement is good for you as a health-profession student?

……

……

C7: List requirements which you consider necessary to facilitate your teaching and learning during community placement?

……

……

C8: What is your opinion about the nine competencies in questions Section B above?

……

……

C9: List the interactive teaching and learning methods you would consider suitable for you while in the community for placement?

……

……

C10: In your opinion, list the most important 5 items you would consider as motivators for your teaching and learning experience while for COBERS placement

……

……

Figure S2 Post-community placement questionnaire.
Abbreviation: MESAU, Medical Education for Equitable Services for All Ugandans.