

Medical Education in Somalia: Issues and Challenges

Hassan Abdullahi Dahie

Faculty of Medicine and Health Sciences, SIMAD University

Mogadishu, Somalia

ORCID: 0000-0003-4493-7949

ABSTRACT

Background: Improving medical education has been a noble aim for the countries around the world over the past century to realize the universal health coverage. Through the continuous endeavors of the world countries and their learning institutions, tremendous advances have taken place in the field of medical education over the last five decades. However, being a low-resource and fragile country afflicted by protracted social conflicts and political fragmentation, Somalia faced difficulties in establishing its medical education institutions. Therefore, this study was intended to identify the issues and challenges of Medical education in Somalia. **Methods:** This cross-sectional study conducted in 2021 involved 384 teaching staff in medical and health science programs of public and private learning institutions in Somalia recruited through purposive sampling. Data were collected through participants administered questionnaire and key informant interview. The collected quantitative and qualitative data were analysed using SPSS and NVIVO software packages. **Results:** A sample of 384 participants (311 males and 73 females) was included in the study with mean age 33 years. Most of them had master's degree and average teaching experience of 5 years. Majority of medicine and health sciences institutions were private-owned operating in rented campuses. The study showed that there was a significant association between campus ownership, campus adequacy, student selection policy, staff employment type, employee satisfaction with current salary and the type of institution. The major challenges faced by the medical education in Somalia include: shortage of trained competent lecturers, lack of relevant medical curricula, shortage of teaching/learning resources, lack of government oversight & licensing and lack of higher education policies. **Conclusion:** There is a need to develop competency-based curriculum, train medical teachers on teaching approaches, avail teaching & learning resources, and invest in medical researches.

Keywords: Medical education, medical curriculum, learning assessments, teaching and learning resources, medical researches.

INTRODUCTION

Ensuring the quality of education and practice of health care workers has been a noble aim for the countries around the world over the past century to realize the universal health coverage. Through the endeavors of these countries and their learning institutions, tremendous advances have taken place in the field of medical education over the last five decades. As the result of these changes, the trained human resource for health have attained in-depth understanding of theories, concepts, principles and skills of critical analysis and problem solving in the provision of high-quality care to patients.

However, in general, Africa, especially sub-Saharan Africa, has been progressing very slowly and, as a result, has the worst health indicators in the world. According to WHO (2006), the poor quality of healthcare in sub-Saharan Africa is related, in large part, to its critical shortage of healthcare workers ^[1]. Although, in the past 20 years, the number of medical schools, as well as their respective student enrolments, has increased substantially in sub-Saharan Africa (SSA), still there is lack of adequate number of doctors, nurses, midwives, laboratory professionals and community healthcare workers ^[1, 2]. Sub-Saharan Africa has about 11% of the world's population, yet it bears over 24% of the global disease burden and 3% of the global health workforce, while spending less than 1% of the world's financial resources on health ^[3]. Medical educators have a key role to play in reducing inequities in global health by addressing the underlying doctor shortages that have reached crisis levels in some regions. The region in which these health inequities ^[4] and health workforce shortages are most stark is sub-Saharan Africa (SSA) ^[5-7].

The medical education in Somalia has been shaped by the country's unique history. During the colonial period, there was no medical education in the country. However, once Somalia gained its independence in 1960, there were few significant milestone achievements in the history of medical education in the country. In 1966, a nursing school was founded in Hargeisa, and another one in Mogadishu in 1970. In 1972, a faculty of medicine and surgery of SNU was set up in Mogadishu. Since then, these were the main learning institutions producing the country's health cadres from that time ^[8]. However, these gains were reversed by the economic slump and political upheaval of the 1980s and civil war of the 1990s.

In 1991, when Somalia's central government collapsed and a civil war erupted, all social services were severely disrupted. Hence, Somalia's medical education system has been completely decimated. The devastation of the sector extended far beyond the physical infrastructure. It is estimated that more than 80% of the educated elite left the country in the period since the conflict began. Over 20 years of state collapse and protracted conflict has left its healthcare system in a state of disarray ^[9].

Nevertheless, in the late 1990s, some Somali intellectuals and academicians re-established higher education institutions in the country. This initiative inspired many other scholars & academicians to courageously establish plethora of private-owned universities offering medical education disciplines. However, enthusiasm for reform needs to be tempered by a more measured approach to avoid unintended consequences. Movement from novice to master in medicine cannot be rushed. Likewise, medical education has evolved and will continue to evolve in response to scientific advances and societal needs. Thus, Somalia's medical education needs to be improved so that it can be instrumental in solving complex problems in country's health system. As recommended by Dahie (2021), successful medical education needs a conducive learning environment that consists of ten integral components such as medical education regulations, competency-based curriculum, facility infrastructure, instructional media, trained medical educator, library facilities, skills lab and demonstration facilities, simulated patients, teaching hospital and learning assessments.

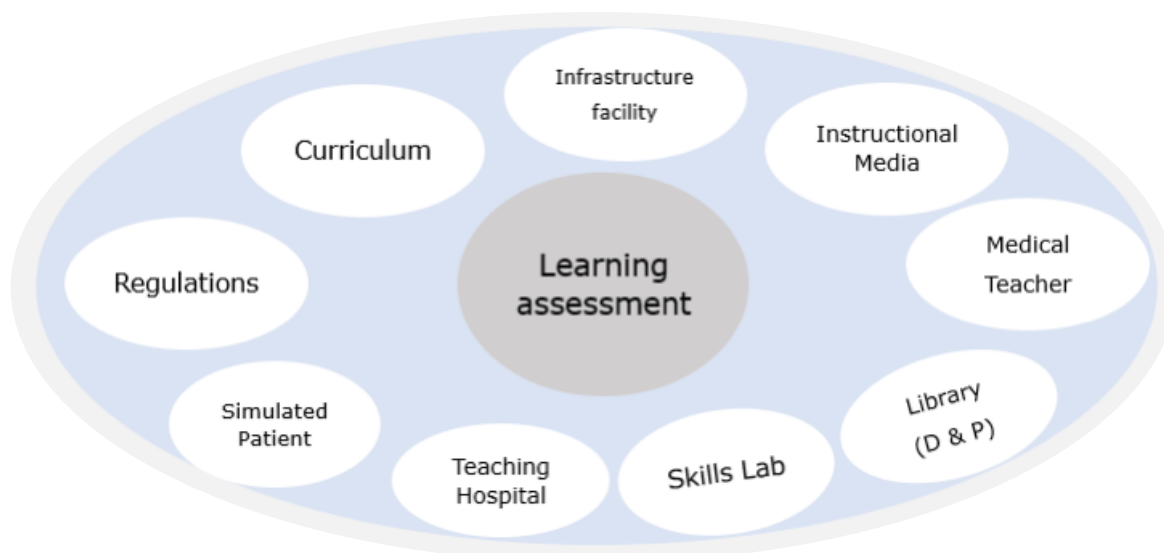


Figure 1: Integral components of medical education (adopted from Dahie, 2020)

Therefore, this study was intended to identify the issues and challenges of Medical education in Somalia.

METHODS AND MATERIALS

Design and data collection

The study has been conducted in Medical Universities & Colleges in Somalia between February to April 2021 using a cross-sectional study design. This author has opted this design as it can give a snapshot picture of the medical education in Somalia at a given point in time. The study also employed an author-developed questionnaire and interview guide as data collection tools. The questionnaire was designed for the teaching staff who were involved in medical teaching and learning process to address the demographic characteristics, education qualifications, teaching strategies employed of the facilitators, while the interview guide was developed for medical education managers and policy makers to identify administrative challenges in medical education. The sample size was computed using a 95% confidence level, a 5% margin, and a 50 percent unknown prevalence, yielding a final sample size of 384. The respondents of the study were selected through purposive sampling. Data were collected through participants administered questionnaire and key informant interview. The collected quantitative and qualitative data were analyzed using SPSS and NVIVO software packages, respectively.

Data analysis

A descriptive analysis was undertaken using frequency and percentages for the categorical variables with SPSS version 25.0 while thematic analysis was employed with NVIVO version 12 for non-categorical qualitative variables.

Ethics

Ethical approval for this study was obtained from the Ministry of Health, Somalia. Moreover, written or oral informed consent for participation was obtained from all subjects.

RESULTS

Socio-demographic characteristics

A sample of 384 participants was included in the study whose majority 311(81%) were males. In regard to respondents age, majority 265(69%) of them were in the age group of 30-39 years, while 21.4%, 4.8%, 2.4%, 2.4% and were in the age groups of 20-29 years, ≥50 years, <20 years, 40-49 years, respectively. With respect to respondents' education attainment, majority (78.8%) had master's degree, while 20.6%, some 20.6%, 2.0% of the respondents had bachelor's and doctoral degrees, respectively. There were a few respondents (1.6%) who were at diploma level. The study has established that the respondents had an average teaching experience of five (5) years. The study also revealed that more than one-third (42.4%) of the respondents had studied abroad as shown in (Table 1).

Table1: Socio-demographic characteristics

Variables	N	%
Gender		
Male	311	81
Female	73	19
Age		
<20 years	9	2.4
20-29 years	83	21.4
30-39 years	265	69.0
40-49 years	9	2.4
≥50 years	18	4.8
Educational status		
Diploma	6	1.6
Bachelor	79	20.6
Master	291	75.8
Ph.D	8	2.0
Country of study		
Somalia	221	57.6
Abroad	163	42.4
How long have you been teaching?		
< 1 year	77	20.0
1-5 years	196	51.0
6-10 years	84	22.0
>10 years	27	7.0

The study has found out that majority (96.9%) of the respondents worked for private learning institutions. It was revealed that most (68.5%) universities operate in rented premises whose majority (81%) were not adequate and conducive learning environment. The study has demonstrated that majority teaching staff were private employees (74.2), had no teaching methodology course (78.6%), had academic rank of lecturer (60.5%). With respect to the institution's medical curriculum, less than one-third (23%) of the universities have adopted competency-based curriculum that was designed and developed by the relevant stakeholders, while 42%, 19% and 16% used skeleton of a transcript as a curriculum, adopted curricula developed by other countries or international bodies and had no standard curriculum, respectively. However, further analysis showed that more than one-third (67.1%) of the respondents had no idea the design of the curriculum that their institutions have adopted.

Regarding the student enrollment process, the study has shown that more than half (51%) of respondents responded that the institutions had no standard student selection policies for recruiting the new students. Concerning teaching and learning resources, the study indicated that majority of the institutions had shortage of teaching aids (68%), had no teaching hospitals (81%). Similarly, the research has determined that 74.8% of the respondents reported that their respective institutions haven't allocated budget for research and developmental issues and as argued by the respondents, that lack of budget allocation for research activities has led that more than 95% of the teaching staff had no research publication (Table 2).

Table 2: Features of Medical Education in Somalia

Variables	N	%
Type of the learning institution you work for		
Public	12	3.1
Private	372	96.9
If private, what type of campus does your institution operate on?		
Institution-owned campus	98	25.5
Rented campus	263	68.5
Other	23	6.2
Is the campus sufficient for operations?		
Yes	73	19
No	311	81
Have you had formal training in teaching methodology?		
Yes	82	21.4
No	302	78.6
Employment type		
Fulltime employee	87	22.7
Part-time employee	285	74.2
Other	12	3.1
Academic rank		
Assistant lecturer	11	2.8
Lecturer	232	60.5
Senior lecturer	124	32.4
Associate professor	6	1.5
Professor	4	1.0
Other	7	1.8
Are you satisfied with your current salary?		
Yes	38	9.9
No	346	90.1
What is the source of the medical curriculum that your program has adopted?		
Transcript skeleton	161	42
Adopted curriculum developed by another country/body	73	19
Our curriculum was developed by relevant stakeholders	88	23
Have no standard curriculum	62	16
Which design is your curriculum based?		
Flexer Model	11	2.9
SPICES Model	30	7.8
PRISMS Model	19	5.0
Mixed Model	51	13.3
Other	15	3.9

I don't know its design	258	67.1
Does your institution have student selection policy?		
Yes	188	49.0
No	196	51.0
Does your institution own teaching hospital?		
Yes	73	19.0
No	311	81.0
Is there a scarcity of teaching and learning materials?		
Yes	261	68
No	123	32
Does your institution allocate budget for research & development?		
Yes	97	25.3
No	287	74.8
Do you have research publications?		
Yes	19	4.9
No	365	95.1

In multiple response analysis, the study has established that all (100%) the learning institutions employed written examinations as learning assessment strategy, while less than half (48.7%), 34.4% and 18% use some form of objective structured clinical examination (OSCE), objective structured practical examination (OSPE) and viva voce in combination with the written examinations, respectively (Table 3).

Table 3: Student learning assessments

Student assessments employed	N	%	% of cases
Written examinations	384	37.5	100.0 %
OSCE	187	18.3	48.7 %
OSPE	69	6.7	18.0 %
Viva voce	132	12.9	34.4 %
FQE	63	6.1	18.0 %
Licensing Exams	18	1.8	4.7 %
Others	171	16.7	44.4 %
Total	1024	100%	268.20%

Besides the descriptive statistics, a chi-square test was performed to examine the relation between medical education characteristics and the type of the institution. Regarding the ownership of the institution premises, the study showed that there was a significant association between campus ownership and institution type, $X^2 (1, N = 384) = 21.78, p = .0001$. Similarly, the study revealed that institution is associated with campus adequacy, $[X^2 (1, N = 384) = 25.220, p = .00001]$, student selection policy, $[X^2 (1, N = 384) = 9.04, p = .00264]$, employment type, $[X^2 (1, N = 384) = 18.270, P = .00325]$ and employee satisfaction with current salary $[X^2 (1, N = 384) = 7.631, p = .0057]$. See table 4 below.

Table 4: Association between medical education characteristics and institution type

Variable	N(%)	Institution type		X ²	P value
		Public N= 12	Private N= 372		
Campus ownership					
Owned	98(25.5)	10 (83.3)	88 (23.7)	21.780	0.0001
Not owned	286(74.5)	2 (16.7)	284 (76.3)		
Campus adequacy					
Yes	73 (19.0)	9 (75.0)	64 (17.2)	25.220	0.0001
No	311 (81.0)	3 (25.0)	308 (82.8)		
Student selection policy					
Yes	188(49.0)	11(91.7)	177(47.6)	9.041	0.00264
No	196(51.0)	1(8.3)	195(52.4)		
Educational level of teaching staff					
Undergraduate	85 (22.1)	4 (33.3)	81 (21.8)	0.901	0.3424
Graduate	299 (77.9)	8 (66.7)	291 (78.2)		
Teacher Training					
Yes	82(21.4)	4 (33.3)	78 (21.0)	1.058	0.3035
No	302(78.6)	8 (66.7)	294 (79.0)		
Employment type					
Fulltime employee	87(22.7)	7 (58.3)	80 (21.5)	18.270	0.0001
Part-time employee	285(74.2)	3 (25.0)	282 (75.8)		
Other	12(3.1)	2(16.7)	10(2.7)		
Employee satisfaction with current salary					
Yes	38(9.9)	4(33.3)	34(9.1)	7.631	0.0057
No	346(90.1)	8(66.7)	338(90.9)		
Availability of adequate teaching & learning materials					
Yes	123 (32.0)	4 (18.3)	119 (32.0)	0.6468	0.4212
No	261 (68.0)	8 (46.9)	253 (68.0)		
Allocation of research & development budget					
Yes	97 (25.3)	2 (16.7)	95 (25.5)	0.485	0.4846
No	287 (74.7)	10 (83.3)	277 (75.5)		
Lecturer's publication work					
Yes	19 (21.6)	1 (18.3)	18 (23.5)	0.302	0.5827
No	365 (44.7)	11 (46.9)	354 (43.4)		

Challenges facing the medical education in Somalia

The study has found a number of challenges which hinder the progress of effective medical education in Somalia. The major challenges and obstacles that respondents raised more frequently include: shortage of trained competent lecturers, lack of curriculum review, poor student selection techniques & strategies, shortage of teaching hospitals, scarcity of

teaching/learning resources, lack of government oversight & licensing, lack of higher education policies, lack of problem-based learning approach and shortage of instructional media designs.

Shortage of Trained medical teachers

It is generally acknowledged that promoting teachers' quality is a key element in improving the quality of medical education in any country. Teaching is a skill that requires learning. It is really different to know the subject you are teaching and how to teach a subject. Hiring untrained teachers is very common, but the quality of students is determined by the teacher and is very dangerous in the medical field. The study has found that most teachers were trained on medical education.

"Teaching is a skill that must be acquired. Knowing a subject and knowing how to teach a subject are two very different things. Therefore, it is necessary to train teachers on teaching methods & learning assessments".

Respondent 1, from public institution.

Lack of Competency-based medical curriculum

A course's curriculum is critical to its success. Teaching medical-related subjects, in particular, necessitates a curriculum that reflects the country's culture, values, and ambitions. It should also address the country's emerging and re-emerging diseases.

The study identified that most institutions don't have standard & competency-based curriculum.

"In most cases, the institutions I have seen use only a transcript skeleton which shows the course names & their respective credits".

Respondent 2, from private institution.

Student selection policies & procedures

Student selection is critical to the quality of students being selected as future health cadres, who will be trusted in the life of human beings. As identified by the study, most medical & health science schools don't have student select policies, thus candidates who are incapable of pursuing medical education are enrolled who are more likely to drop out from the course or be incompetent health cadres. According to the study, most medical and health science institutions lack student selection rules, which means that applicants who are unable to pursue medical education are enrolled, and are more likely to drop out or become incompetent health cadres. According to some of the key informants of this study, entry requirements and admissions in general for the private health training institutions are lax. Historically, admission to medical education in Somalia was an arduous task but also prestigious and free. Fees were introduced only after the collapse of state institutions.

"In reality, we notice that students select universities to join, but universities have no standard student selection policy & procedures, and most of them admit students blindly".

Severe shortage of teaching & learning resources

The impact of learning resources in promoting medical and health science students' educational development is indisputable. Besides the audio-visual aids, physical & digital libraries, teaching

at any level of medical education requires that the students be exposed to some form of simulation either at skills labs and at hospitals.

"By having the opportunity to learn through multiple purposes, students can learn faster and easier. The use of materials motivates learners to learn more, providing teachers with an interesting and compelling platform for communicating information."

Respondent 5, owner of private university.

Lack of higher education policies

There are no governing regulations or accreditation to ensure quality training for institutions, despite the government's recent initiatives to establish a minimum standard for higher education. Their rapid increase in an unregulated manner has raised serious quality problems. Lack of medical education policies and regulations was one of the most common issues raised by the key informants of the study.

"If there were higher education policies, especially those in medicine & health sciences, we would follow them and apply them".

Respondent 8, dean of private university.

DISCUSSION

Medical education has always been challenged to keep pace with advances in science and technology, and this is certainly true for the current era, when these advances are arguably more rapid than ever before ^[10]. But, in the face of several years of civil war, political fragmentation and poorly performing health care delivery system, medical education in Somalia is poised for disruption. Over quarter century of state collapse and protracted conflict has left its medical education system in a state of disarray and dishevel. But the efforts of Somali scholars have led to the re-establishment of medical education in the country.

The study reveals that more than 80% of teaching staff were males, bearing in mind that majority of the learners in medical and health science discipline are females. In that regard, the findings of the study contradict the reality in the neighboring countries which reported around fifty percent of female participation ^[11]. The study has also shown that 93% of the teaching staff were below 40 years of age (with teaching experience of 5 years), 73% had master's degree in medical-related disciplines, 42% studied from abroad and only 21.4% had teaching methodology course. Most of these figures are in line with the countries in sub-Sahara Africa ^[12].

On the other hand, the study discovered that the majority of the respondents (96.9%) worked for private learning institutions, with more than two-thirds of these institutions operating in rented campuses, the majority of which (81%) were not sufficient or conducive to learning. This is a reality in most Sub-Saharan African nations, and it is thought to pose a serious danger to the existing health-care educational infrastructure ^[12].

Another issue raised by the study is the medical curriculum, in which only about a third (23%) of universities have adopted competency-based curriculum that was designed and developed by relevant stakeholders, while the rest used either a skeleton of a transcript as a curriculum,

adopted curricula developed by other countries or international bodies, or had no standard curriculum. Worryingly, the study revealed that more than a third of the teaching staff (67.1%) had no knowledge of curricular designs or the ones that their institution had implemented. Similar studies conducted in some African countries such as Zimbabwe and Nigeria have yielded almost similar results [13].

Furthermore, regarding the student enrollment process, the study has shown that more than half (51%) of respondents responded that the institutions had no standard student selection policies for recruiting the new students, suffered from grave shortage of teaching and learning resources and had no budget allocated for research and development issues. Although slight improvement was reported in the neighboring countries, these challenges are common in African countries [14].

CONCLUSION

From the study, the researcher was able to identify a number of challenges which hinder the progress of effective medical education in Somalia. The major challenges and obstacles that respondents raised more frequently include: shortage of trained competent lecturers, lack of curriculum review, poor student selection techniques & strategies, shortage of teaching hospitals, scarcity of teaching/learning resources, lack of government oversight & licensing, lack of higher education policies, lack of problem-based learning approach and shortage of instructional media designs.

Reference

- [1]. The World Health Report 2006: Working Together For Health." 2006. World Health Organization. http://www.who.int/entity/whr/2006/whr06_en.pdf?ua=1.
- [2]. Chen C, Buch E, Wassermann T, et al. A survey of sub-Saharan African medical schools. *Human Resources for Health* 2012;10:4
- [3]. Anyangwe, S. C., & Mtonga, C. (2007). Inequities in the global health workforce: the greatest impediment to health in sub-Saharan Africa. *International journal of environmental research and public health*, 4(2), 93–100. <https://doi.org/10.3390/ijerph2007040002>
- [4]. World Health Organization. The Health of the People. 2008. http://whqlibdoc.who.int/afro/2006/9290231033_rev_eng.pdf. [Accessed 25 May 2011.]
- [5]. High Level Forum on the Health MDGs. Addressing Africa's Health Workforce Crisis: an avenue for action. 2004. <http://www.hlfhealthmdgs.org/Documents/AfricasWorkforce-Final.pdf>. [Accessed 25 May 2011.]
- [6]. Gukas ID. Global paradigm shift in medical education: issues of concern for Africa. *Med Teach* 2007;29 (9):887–92.
- [7]. Omer MI. Can medical education rise to the challenge of the African crisis? *Ann Trop Paediatric* 2005;25 (4):227–41.
- [8]. Qayad, MG (2007) Health Care Services in Transitional Somalia: Challenges and Recommendations: <https://digitalcommons.maclester.edu/bildhaan/vol7/iss1/>
- [9]. WHO, UNICEF, UNFPA (2015), Joint Partners Position Paper: Health Prioritization a <http://somaliangoconsortium.org/download/578571d68e830/>
- [10]. Wartman, Steven A. MD, PhD The Empirical Challenge of 21st-Century Medical Education, *Academic Medicine*: October 2019 - Volume 94 - Issue 10 - p 1412-1415. doi: 10.1097/ACM.0000000000002866

- [11]. Hatem, D. S., Barrett, S. V., Hewson, M., Steele, D., Purwono, U., & Smith, R. (2007). Teaching the medical interview: methods and key learning issues in a faculty development course. *Journal of general internal medicine*, 22(12), 1718–1724. <https://doi.org/10.1007/s11606-007-0408-9>
- [12]. Manyama, M, Mshana, SE, Kabangira, R, Konje, E (2013), Shortage of faculty in medical schools in Tanzania: A case study at the Catholic University of Health and Allied Health Sciences
- [13]. Kiguli-Malwadde et al. BMC Medical Education (2015) Medical education departments: a study of four medical schools in Sub-Saharan Africa
- [14]. Ibrahim, M (2007) Medical education in Nigeria, *Medical Teacher*, 29:9-10, 901-905, DOI: 10.1080/01421590701832130