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Review Article

The impact of Flexner's report on medical education in Sub-Saharan Africa Sudan as an example

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ABSTRACT

Flexner's Report 1910 is one of the most important and influential events in the history of medicine worldwide that led to the emergence of modern medical education. reforms of medical education took places as results of this report leading to the establishment of the biomedical model as the gold standard of medical training. Objectives: to identify the impact of Flexner's Report on Medical Education in Sub-Saharan Africa taking Sudan as an example more than 100 years after the report. The health system and medical education in Sub-Saharan Africa during the colonial era and after independence were studied. Conclusion: Medical education in Sub-Saharan Africa has not yet received a holistic review, reforms, and standardization and the health system needs more educational strategic planning. Multiple factors play a role in preventing the modernization of medical education in Sub-Saharan Africa, such as the poor economic status of these countries, inadequate infrastructure, equipment, and educational standards, large annual students intake, and lack of appropriately qualified teaching staff.

Keywords: Flexner's report, Medical education, Sub-Saharan Africa, Sudan

INTRODUCTION

Flexner's Report is one of the most important and influential events in the history of medicine worldwide that led to the emergence of modern medical education. The Report identified the areas that need reforms, particularly the standards, organization, and curriculum.[1] Based on Abraham Flexner's educational report on "Medical Education in the United States and Canada" in 1910, reforms in medical education took place worldwide and resulted in the "elimination of proprietary schools and the establishment of the biomedical model as the gold standard of medical training." Throughout history, this report constituted a critical turning point in health professional education (HPE). Flexner's ideas gained a consensus, but not without opponents, on its precise impact on HPE not only locally in America but also at the cosmopolitan level.[2] Despite the influence of this report on the HPE, there is a brilliant debate about the advantages and disadvantages of this report.[3] No doubt, HPE changed steadily after the Flexner report and kept on changing under the outlines of this report, and "the objective of medical education became that of producing problem solvers and critical thinkers who knew how to discover and evaluate the information for themselves".[4] As expected, we continuously hear calls to reform HPE, responding to the desires of the communities and progressive advances in the health professional field.[5] Curricular reform of medical education of today and the last four decades has been accelerated and augmented in addition to the impact of Abraham Flexner's report, by

other factors and situations such as rapid advances in technology and sciences, accreditation standards, internationalization, student diversity, changing governing principles of educational institutions and increased societal demands and needs. However, despite these factors and the fact that Flexner's report is over a hundred years old, many of his ideas, observations, and recommendations regarding medical education are as pertinent and timely today as they were in 1910.

CRITICAL DISCUSSION OF FLEXNER'S REPORT IMPACT

Flexner's report has several recommendations. However, this discussion will concentrate more on those that have extreme effects on our present HPE in Sub-Saharan Africa.

Firstly, the health system and medical education in Sub-Saharan Africa during the colonial era and after independence were connected and dependent on the colonial health system (British and French). Until now, medical education has not received a holistic review, reforms, and standardization as it is teacher-centered, subject-based, and hospital-based in most of its planning, design, and delivery. Also, the health system in Sub-Saharan Africa needs more educational strategic planning. Some countries witnessed a sudden rise in the number of medical schools during and after the so-called Higher education revolution, such as in Sudan in the 1990s when the number of medical schools jumped from three to sixty-six.[6] Multiple factors play a role in preventing the modernization of medical education in Sub-Saharan Africa, such as the poor economic status of these countries, inadequate infrastructure, equipment, and educational standards, large annual student intake, and lack of appropriately qualified teaching staff.

The curriculum reform was promoted by redefining the basic sciences in a fitting, broader definition pertinent to the patient's clinical care.[7] This appropriate definition of basic sciences also encourages expanding experimental research in the basic and clinical sciences. Following Flexner's report, medical education was subdivided into preclinical sciences (basic sciences) and clinical disciplines (clerkships). Although the evolution of basic medical sciences and its role in clinical reasoning and medical education took a rapid step in research, amount of knowledge, and instruction, medical education in Sub-Saharan Africa remains lagging despite being connected with medical education and the health system of colonial countries.[8] Significant progress had been achieved in the health professional field research shortly after Flexner's report.[3] Many studies have stated that evidence-based medicine (EBM) and the advancement of investigations are not comparable between basic sciences and patients' clinical care, as Flexner's report advised.[9] Moreover, detrimental effects in some disciplines like psychiatry and alternative medicine were reported by some researchers.[2] However, recent experiential data did not bolster these suggestions; thus, their plausibility is debatable. The empirical evidence supports the integration of basic sciences and clinical care, which took a long time. Although the importance of basic medical sciences for medical reasoning and diagnosis is of no doubt, some think that clinical knowledge is the basis of clinical diagnosis.[10,11] This concept led to the loss of the scientific foundation of clinical medicine as it is happening in some African countries where several commercial schools provide medical education that lacks adequate laboratories and training using experimental teaching and learning activities, which is reflected in medical curricula as an imbalance in content and time allocated for basic and clinical sciences and early steps taken for integration.[8]

Since the inception of HPE before independence in Sudan, medical education has passed through periods of advancement and regression, suffered various challenges throughout these eras, and has been weakened by internal wars, political conflicts, and poor economic development. As a result, many researchers and university teachers emigrated, searching for better financial and scientific conditions. Therefore, we rarely find a solid assessment of HPE and a well-established integration of basic and clinical sciences. As in other sub-Saharan countries, the curriculum is hybrid, sequential, or parallel. However, throughout the ages, medical education in Sudan remained hostage in many HPE institutes to the British model, which undoubtedly has effectively met societal requirements to an acceptable extent. In this era, we expect that during this transitional period (a descriptive name was given to the governing system after the Sudanese Revolution in 2019) and beyond, the field of HPE and scientific research will flourish to improve the situation.[12] More studies boost the recent findings than the judgment that "the EBM and the expansion in research are not comparable between basic sciences and the clinical care of patients"; thus, it manifests as an unconvincing idea.

Secondly, Flexner endeavored to make HPE institutions affiliated with universities rather than being sole proprietorships or affiliated with for-profit institutions. Ultimately, this idea resulted in an acceptable improvement in HPE institutions.[13] Further, insufficient evidence against private HPE institutions supports these faculties' closure or merging. Therefore, the privatization of HPE is steadily increasing in Sudan and the surrounding region. For instance, there needs to be more HPE institutions in East and West African countries, which force the students of these countries to go to neighboring countries for their HPE. Therefore, the privatization of HPE is beneficial for solving many of the challenges HPE faces in countries like this. It helps fill the shortage of professionals in the health professional workforce.[14] In Sudan, after the higher education revolution in 1990, higher education authorities encouraged privatization in HPE, leading to an increase in the number of new medical schools, up to 33 colleges nowadays. Still, some of them are not affiliated with universities. Moreover, a private section was created within the governmental medical schools to improve its financial status. However, most of

these colleges were established in the country's national capital (Khartoum), which promotes the inequity distribution of graduates of these colleges over the various states of Sudan.[15]

In addition, most of these colleges are profitable in origin; hence, the higher education authorities must stress the licensing of such colleges and guarantee the application of the acceptable criteria.[13] Bearing in mind that private HPE institutions can play an essential role in providing health personnel and medical services to the citizens, it would be better to make more efforts to apply the standards required for HPE institutions in these faculties and support them fit for the college model. In contrast, the former idea was deemed more valid due to its empirical support that HPE should be university-based. Therefore, HPE institutions should belong to universities.

Flexner's report deepened some ethical troubles regarding racism in the body of HPE. The information strengthens the tumefaction of racism in how it views blacks and their education in medicine. The impact of this report became more evident recently in America and the developed world throughout the COVID-19 pandemic.[16] White healthcare workers ignore that racism significantly affects their healthcare practice or influences their outcomes. This decreased the number of black and colored students in HPE institutions.[17] The conclusion derived from Lett E's study was not widely accepted as the methodology can be decidedly criticized due to the weak study design and data collection method. Without a doubt, deliberate failure to stand up to the problem of racism in HPE will lead to disastrous vestige in the long run toward colored patients.[18,19] In Sudan and its surroundings, there is not enough information to guide discussion about racism and anti-racism approaches in HPE. During the colonial period and the first two decades following independence in Sub-Saharan Africa, inequity existed in all levels of education, including medical education. However, it was not racial but between the center and the periphery, the towns, and the rural areas. In addition, socioeconomic status, gender, and geographical origin were the most important determining factors in application and students' enrolment in medical school. In Sudan, the situation was similar as there was a single medical school located in the capital, Khartoum (Kitchener School of Medicine lately Faculty of Medicine, University of Khartoum established in 1924), till 1978 when two governmental universities were established, Gezeira and Juba universities in Wad Medani and Juba towns respectively. This was followed in 1990 by establishing the Ahfad University Medical School as the first private for-profit school for women. Since the 1990 higher education revolution in Sudan, at least one or more universities have been established in all Sudanese States, and the criteria for new students' intake and enrolment were modified to secure a percentage for the local population (regional acceptance).[20] These changes led to ameliorating inequity to some extent in medical education.

REMEDIATION OF MEDICAL EDUCATION IN SUB-SAHARAN AFRICA

Abraham Flexner developed his report on principles still valid in Sub-Saharan medical education more than a hundred years after the report. To improve Sub-Saharan medical education and, after that, the health system service, the following actions need to be looked at as priorities: Medical education should be a continent and national concern. Policy and decision-makers should consider medical education a social, humanitarian, and economic priority. Acknowledge the ill status of medical education. Study of the peculiarities of Sub-Saharan African Nations and their health system needs. Study and use the experience of other countries with similar socioeconomic status that achieve high standards of medical education. Strategic planning to identify the needs for health and medical manpower to fill current health and medical personnel gaps and maintain future needs country-wide. Review the existing medical schools to decide their future and fate. A secure budget is needed to safeguard adequate infrastructure, equipment, and staff. Apply curriculum reform that led to the modernization of Sub-Saharan medical education to meet the needs of modern health systems. Develop policies, standards, and directives that govern and regulate medical education. Develop a system for accreditation of medical schools and programs to ensure satisfaction of national and international medical education requirements and standards. Integration of Sub-Saharan Medical schools and health system.

CONCLUSION

Abraham Flexner developed his report on principles that are still valid in Sub-Saharan medical African education. Medical education in Sub-Saharan Africa is lagging compared with other areas in terms of organization, planning, curriculum, staffing and resources. Important measures need to be taken to modernize medical education in Sub Saharan Africa in particular planning, allocation of enough budget and availability of well trained teaching staff.

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