

## REVIEW ARTICLE

# REVISITING THE FLEXNER REPORT: OPPORTUNITIES FOR IMPROVING SUDAN'S HEALTHCARE THROUGH MEDICAL EDUCATION

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## ABSTRACT

This article offers an overview of Abraham Flexner and the influential Flexner Report, which significantly impacted medical education in the United States and Canada. The report, written by Flexner, criticized the prevailing medical education system guided by financial motives and proposed reforms. The article discusses the Flexner Report's historical context, recommended medical education standards, and consequences. It acknowledges the report's positive aspects, such as enhanced educational standards and the emphasis on biomedical sciences and clinical training. However, it also highlights the report's negative features, including biased recommendations to close black medical schools and female-only institutions. Despite these limitations, the report continues to shape contemporary medical education. The article concludes by examining how the positive elements of the Flexner Report can be implemented nationally and internationally to improve the quality and value of medical education, with specific considerations for Sudan.

**KEY WORDS:** Flexner Report; Medical Education; Educational standards; Impact; Medical schools.

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## INTRODUCTION AND BACKGROUND

**Background about the Abraham Flexner and Flexner Report:** Abraham Flexner was an American teacher (1866-1959); he was not a physician. He was a secondary school teacher and administrator in Louisville, Kentucky. Before joining the Carnegie Foundation for the Improvement of Teachings,

Flexner worked at Harvard University and Berlin University. In 1910, Flexner investigated, wrote, and published a paper for the Carnegie Foundation titled "Medical Education in the United States and Canada." The Flexner Report is the new name for the report. Abraham Flexner was a remarkable educator of the twentieth century. He attributed significantly to medical education and medicine in the United States and Canada.<sup>1,2</sup> Flexner Report was a critique of medicine in the early 19th century that paved the way for advanced medical education. It is the most significant event in the history of medical education in the United States and Canada.<sup>3</sup>

The Flexner Report produced much-needed improvements in healthcare educational standards, infrastructure, and curriculum in the United States. However, at the time of the Report, many medical institutions were private, having a business motive rather than an educational one. According to

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Flexner, these institutions are a disorganized and unprofessional apprenticeship training system with no defined criteria or aims other than financial gain. Locally, Flexner suggested medical schools in the German tradition of outstanding biomedical sciences combined with hands-on clinical training.<sup>1</sup> As a result of the Flexner Report, many medical educational institutions were forced to shut down. Nevertheless, most remaining institutions were reformed to meet the Flexner framework and model or framework.<sup>4</sup>

Flexner also performed several significant educational studies, including comparing universities in the United States, England, and Germany. He was the first director of Princeton's Institute for Advanced Study, which he established in 1930.<sup>2</sup>

**Medical education standards design and implementation:** The Flexner Report formulated a series of medical education criteria that were used to analyze and evaluate existing medical institutions. This was not the first time a similar procedure had been employed. The Illinois State Board of Health and the American Medical Association Council, in addition to the Association of American Medical Colleges (AAMC), medical education have all conducted earlier evaluations for various objectives. For example, the Illinois State Board of Health published an extensive report on medical colleges in the United States and Canada in 1891. A concise assessment of the deficiencies in medical education at the time was presented in the report.<sup>5</sup>

This report contained the following: due to a lack of preliminary schooling, students are unable to understand scientific fundamentals; also, it reported that the instructors are doing too much instructive activity. Correspondingly, the students are not doing enough clinical training, insufficient actual job assessments and insufficient time for job and study.<sup>6</sup>

## METHODOLOGY

In this study, a comprehensive review of the literature supplements a descriptive study, drawing upon the historical context and recommendations found in the Flexner Report authored by Abraham Flexner in 1910, which remains crucial in the field of medical education. The analysis centres on the report's impact on medical education in the United States and Canada, focusing on the report's role in setting demanding standards, emphasising scientific rigour, and promoting clinical training. Building on the foundation established by the Flexner Report, the study proposes the implementation of key positive aspects to enhance medical education, both nationally and internationally, with specific attention directed toward the Sudanese context. The methodology includes adapting admission criteria, expanding faculty development, optimising resource allocation, upgrading facilities, integrating technology, and fostering collaborations between medical institutions and hospitals.

This study aims to improve medical education and its alignment with contemporary healthcare needs.

## Consequences and impact of the Flexner Report:

The conclusions and consequences of the report contain both positive and negative aspects. In 1910, the report had positive results, which we may still see in practice today. First, it began by advocating for more severe entry and graduation criteria at medical schools. Second, it argued for a four-year medical school because there were so many two-year medical schools at the time.<sup>7</sup> Third, it advocated eliminating two-year medical schools, several of which did not include laboratory practice. Fourth, it made a point of saying that medical colleges should actively monitor and follow current science norms in both teaching and research. Regrettably, many American medical school colleges failed to obtain this requirement, and nearly half of them partnered with other institutions or closed their doors after the study was issued. Finally, it gave governments the authority to control medical colleges. You can argue for or against the rule; nevertheless, medical education has grown more uniform due to the regulations, notably in the United States.<sup>3,8,9</sup> On the downside or negative side, the report came up with several alarming results and suggestions of solutions and recommendations. It stated that the United States had too many medical schools, doctors and professionals. Given the current shortages of primary care physicians, the evaluation may have been a short-sighted perspective. At the time, the report was also plainly subjective in addition to discriminatory based on gender and racism. It branded Chicago's medical schools at the time as "a shame to the state whose laws allowed its existence, undesirably foul, the plague-spot of the nation" in an editorial.<sup>8</sup>

**Negative points noted in the Flexner Report:** The report has a biased front, and it essentially campaigned for the closure of as many black medical schools and female-only schools as possible, which is both racist and anti-female. It was proposed that black-only institutions focus on teaching hygiene rather than other medical sciences to black students. Consequently, the report includes sections on medical women's education and medical education for teaching minorities. It is important to educate the race to understand and practice essential sanitary principles and develop schools in which the highly promising of the races might agree to obtain a significant education where cleanliness, rather than surgery, for example, is greatly emphasized, according to the report.<sup>4</sup> Flexner's results also limited black-American doctors' opportunities in the medical field. Following the report, even the Howard and Meharry schools battled to keep it open, required to match the institutional criteria of white medical schools, revealing a difference in healthcare access between whites and African Americans. The black student institutions

raised a file to the court after the report, attacking the standard created by *Plessy v. Ferguson*. Those students, however, were confronted with criticism from schools that remained dedicated to separate medical education fields.<sup>9</sup> As a result of the findings of the report, men-only institutes and medical programs were established in the United States. It also led to some prejudice in medical schools. According to Castle and others, the Flexner Report limited medical practitioners' supply and drove down prices for medical school and medical services in general. From this, it can be concluded that when you spend a lot of money on medical school, you will charge a lot for services. Charges may be greatly increased if there is a shortage of doctors. The American Medical Association and the Association of American Medical Colleges are paying close attention to the future as they commemorate the foundation of the Flexner report.<sup>3,4</sup>

**Positive points noted in the Flexner Report:** Flexner's report on the positive side encourages us to consider several points, especially in forming new doctors. There are multiple factors to consider as we focus on the future: we must continue to rely on the goal of current research, scientific evidence medicine, and evidence-based in the undergraduate medical curriculum. Although the report also recommended that students in the undergraduate stage be appropriately qualified and educated, we must also explore how we can bring doctors closer to the healthcare professional team and with patients. Furthermore, while still in medical school, we must aid young doctors in preparing for what they may face in practice tomorrow.<sup>10</sup>

It is worth noting that Flexner took a close look at the problem and challenges. Then, he made the following recommendations, using the Johns Hopkins School of Medicine as an illustration<sup>3,4</sup>:

- Reduce the number of medical schools, especially the unqualified ones, in addition to the number of physicians with insufficient training.
- Increase the required qualifications for medical school.
- Medical faculty should be involved in research and should be trained to practice in a scientific way.
- Place clinical education in hospitals under the administration of medical schools.
- State medical licensing regulations should be strengthened.

**Implementation of Flexner report to improve the quality and value of medical education in Sudan and at the international level:**

Considering the report's favourable aspects that can be implemented at both the international and national levels to improve the quality and value of medical institutions, several factors warrant attention. Firstly,

it is important to incorporate necessary adjustments to admission requirements for students and ensure their effective implementation. However, this may involve reevaluating the criteria for student selection, emphasising academic achievement, aptitude for medical sciences, and commitment to patient care.<sup>11</sup>

Secondly, efforts should be made to increase the number of faculty members and enhance training and education within medical institutions; this can be accomplished by recruiting highly qualified and experienced educators, providing professional development opportunities for faculty members, and encouraging a culture of continuous learning and innovation. Additionally, promoting research activities and encouraging faculty to participate in scholarly work and academic research can contribute to advancing medical education.<sup>12</sup>

Government funding and contributions play a crucial role in supporting medical education institutions. It is essential to allocate sufficient funds and resources to ensure the smooth functioning of these institutions. Maintaining transparency and accountability in utilising financial resources is crucial, focusing on optimizing the allocation of funds for various aspects of medical education, including infrastructure, equipment, and research initiatives.<sup>13</sup>

The effectiveness and Sufficiency of laboratories used for instruction in the early years of the curriculum should be evaluated. Upgrading and modernizing these facilities and ensuring access to state-of-the-art technologies and equipment can significantly enhance the practical learning experience for students. Additionally, attention should be given to the qualifications and training of basic medical science instructors to ensure their expertise and ability to deliver high-quality education.<sup>14</sup>

Furthermore, In today's world of medical education, it's crucial to weave technology into the fabric of learning. Nonetheless, this begins with providing the necessary resources, such as cutting-edge infrastructure and software, to empower our educators. Equally important is investing in comprehensive training programs and mentorship initiatives, which enable our faculty to confidently and adeptly incorporate technology into their teaching methods. For genuine success in this endeavour, we must cultivate a culture that values and rewards faculty engagement in experimenting with new technologies.<sup>15,16</sup> This approach benefits our educators by enhancing their teaching toolkit and enriches our students' learning experiences, more effective assessment methods, increased collaboration opportunities, staying abreast of the latest medical developments, and expanding the reach of our educational activities. Medical schools can create vibrant and effective learning environments by dedicating resources, offering training, and fostering a culture of innovation

among our faculties. These environments go beyond the confines of the classroom, encouraging deeper connections between instructors and students and equipping our future healthcare professionals to thrive in the ever-evolving landscape of medicine.<sup>17,18</sup>

Finally, improving the relationship between medical schools and hospitals is vital. This involves facilitating access to bedside teaching, where students can directly interact with patients and learn from real-life medical scenarios. Collaborative efforts should be made to establish strong partnerships between medical institutions and hospitals, enabling faculties of medicine to recruit experienced hospital physicians and surgeons as adjunct faculty members. Integrating clinical expertise and practical knowledge into the curriculum can enhance the educational experience, providing students with a more enriched learning environment.<sup>19</sup>

By addressing these factors and implementing the positive aspects of the Flexner Report, medical institutions can enhance their educational programs, promote excellence in medical education, and ultimately contribute to the delivery of high-quality healthcare services. These measures, when tailored to the specific context of each country, including Sudan, have the potential to transform medical education and improve the overall healthcare system positively.

## DISCUSSION

The Flexner Report, composed by Abraham Flexner in 1910, remains an influential document that has left a permanent mark on global medical education. This discussion delves into the implications of the Flexner Report, considering its historical context, its positive and negative aspects, and its potential for shaping medical education in Sudan and other regions.<sup>20</sup>

The historical significance of the Flexner Report lies in its critique of the existing medical education system, which was often driven by financial motives and lacked a standardized curriculum. Flexner's insights and recommendations have significantly influenced medical education, stressing the importance of stringent standards, scientific strictness, and clinical training. The report prompted significant reforms, resulting in the closure of subpar institutions and an elevation in the quality of those that remained operational.<sup>21,22</sup>

However, the report's historical impact is not devoid of limitations. The biased recommendations to close black medical schools and female-only institutions underscore the deeply ingrained racial and gender disparities of the time. Nevertheless, the Flexner Report continues to be a cornerstone of contemporary medical education, accelerating the evolution of curricula, faculty training, and educational infrastructure.<sup>23</sup> Looking forward, the positive aspects of the Flexner Report offer valuable insights for enhancing medical education worldwide, with a particular fo-

cus on Sudan. By revisiting and implementing the report's recommendations, we can raise the quality and value of medical education in Sudan and other regions facing similar challenges. Modifying student admission criteria can ensure a robust foundation for prospective medical professionals, promoting excellence and diversity. Increasing and enhancing faculty numbers and fostering continuous professional development can empower educators to deliver cutting-edge instruction that reflects current medical advancements.<sup>21,23</sup>

Government funding and effective resource allocation are essential for ensuring the sustainability of medical institutions. Transparency in financial management can enhance accountability and optimize the utilization of resources, benefiting both educators and students. Upgrading instructional laboratories and enhancing the qualifications of instructors can establish an immersive learning environment that bridges theoretical knowledge with practical skills.<sup>24</sup> The report's emphasis on integrating medical schools with hospitals aligns with the need for practical exposure. Facilitating bedside teaching and engaging experienced physicians as adjunct faculty members can bridge the chasm between theoretical learning and real-world medical practice. Such collaborations can augment students' clinical understanding and prepare them for the challenges of medical practice.<sup>25,26</sup>

Translating the principles of the Flexner Report into action within Sudan's medical education landscape requires thoughtful adaptation to the local context. Sudan can harness the positive elements of the report to address its unique healthcare system challenges, such as enhancing healthcare access, reducing inequalities, and nurturing a new generation of proficient healthcare professionals.<sup>27,28</sup>

Ultimately, the Flexner Report's enduring influence on medical education is undeniable. Its impact extends beyond historical analysis, serving as a blueprint for ongoing improvement and transformation in medical education worldwide. By judiciously considering the report's recommendations, we can work toward a future where medical education is not only rigorous and evidence-based but also inclusive and equitable. Through collaborative efforts, Sudan and other nations can pave the way for a new era of healthcare education that upholds the values championed by Abraham Flexner over a century ago.

## CONCLUSION

The Flexner Report, despite its limitations and negative aspects, had a profound impact on medical education in the United States and Canada. It led to significant improvements in educational standards, curriculum, and infrastructure, emphasizing the importance of biomedical sciences and clinical training. However, the report also contained biased

recommendations that resulted in the closure of black medical schools and female-only institutions, perpetuating racial and gender disparities in healthcare access.

In an effort to enhance the quality and value of medical education on both national and international scales, various initiatives can be undertaken; it is important to consider and implement the positive aspects of the Flexner Report. However, this includes adjusting student admission requirements, increasing faculty numbers, strengthening training and education, focusing on government funding and resources, ensuring transparency in resource allocation, evaluating instructional laboratories and instructor qualifications, and enhancing the relationship between medical schools and hospitals.

By addressing these factors, medical institutions can enhance their educational programs, promote scientific rigour, foster a culture of continuous learning, and produce competent healthcare professionals. These measures should be tailored to the specific context of each country, including Sudan, to improve medical education and the overall healthcare system.

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The following authors have made substantial contributions to the manuscript as under:

Conception or Design: MHKA, AYE  
Acquisition, Analysis or Interpretation of Data: MHKA, AYE, AA, NMB, JMA, WAH  
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All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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