



(REVIEW ARTICLE)



## Assessment of faculty development programs in African Medical Schools: A systematic review

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### Abstract

**Background:** Faculty development is a critical component of medical education, playing a pivotal role in enhancing the quality of teaching, research, and clinical practice. In the context of African medical schools, where unique challenges exist, the effectiveness of faculty development programs becomes crucial. This systematic review aims to evaluate and analyze the existing literature on faculty development programs (FDPs) implemented in African medical schools.

**Aim:** The primary focus was to assess the effectiveness, impact, and key characteristics of these programs in enhancing the teaching, research, and professional development of faculty members.

**Method:** A comprehensive search strategy was employed to identify relevant studies published in peer-reviewed journals, conference proceedings, and grey literature databases. Inclusion criteria encompassed articles reporting on faculty development initiatives within medical schools across the African continent. The search was not restricted by publication date, ensuring a broad scope of evidence. The initial search yielded a substantial number of studies, and after screening for eligibility, a final set of articles was included in the systematic review. The identified faculty development programs varied in their structure, duration, and focus areas, encompassing pedagogical training, research capacity building, and leadership development. The outcomes assessed included changes in teaching methodologies, research productivity, and overall job satisfaction among faculty members.

**Conclusions:** This review suggests that there is need to invest in faculty development program, create a better learning policy, by implementing these strategies, the quality of teaching, research, and clinical practice will be improved In African medical schools.

**Keywords:** Faculty; Development; Program; African medical schools

### 1. Introduction

Faculty development programs in medical schools play a crucial role in advancing the quality of education, research, and clinical practice. These programs aim to enhance the skills, knowledge, and professional competence of faculty members, ensuring they are well-equipped to meet the evolving demands of medical education. While faculty development is a global concern, the context of African medical schools presents unique challenges and opportunities that necessitate a focused assessment of the effectiveness of such initiatives.

This systematic review seeks to fill this gap by critically examining existing faculty development programs in African medical schools. By synthesizing the available literature, the review aims to provide a comprehensive understanding of the types of faculty development initiatives implemented, their structure, content, and the outcomes achieved.

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Additionally, the review explored the contextual factors that influence the effectiveness of these programs, shedding light on the unique challenges and opportunities in the African medical education landscape.

The significance of this review lies in its potential to inform the development and improvement of faculty development programs in African medical schools. Through a thorough analysis of the strengths and weaknesses of existing initiatives, this review aims to contribute evidence-based insights that can guide policymakers, educators, and institutions in designing and implementing effective faculty development strategies tailored to the specific needs of the African context.

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## 2. Methods

[39]Richardson et al. proposed the use of our-part model to facilitate searching or a precise answer, they stated that a clinical question must be formulated and well-articulated for all our parts of its anatomy: a patient, population or problem (P), an intervention or exposure (I), a control and clinical outcome of interest (O). The PICO population, intervention, control and outcomes format is considered a widely known strategy for framing a foreground research question. The following electronic databases were used for the primary literature search relevant to the subject to be reviewed: (a) PubMed; (b) Research gate, Medline, Zandy, web of science, Cochrane, Pubmed central, Pyscheinfo, all 2010 - present. Medical subject headings and keywords were used relating to 'faculty', 'development', 'African medical schools'.

[40]These databases were used because they are medical databases. Inclusion and exclusion criteria were utilized in the screening and selection of literature in addition to the PRISMA process (Page et al., 2021). [41]The CASP program according to CASP (2023) was used to analyze a selection of the literature, and Microsoft Excel was used to retrieve the data for each article. According to Lisy et al. (2016), narrative synthesis was employed to extract data.

### 2.1. Search strategy & inclusion & exclusion criteria

[55]The systematic review in this study employed the PICO (population, intervention, comparison and outcome) framework, The *Cochrane Handbook for Systematic Reviews of Interventions* specifies using PICO as a model for developing a review question, thus ensuring that the relevant components of the question are well defined, (Higgins et al., 2008). The following are the search keywords for this component: Population: The search words used for this component determine location that will be investigated. The location, group, and other characteristics of this population may or may not be present. [56]The cohorts being investigated in this instance are the faculty development in medical schools in Africa. Intervention is the phrase used to define the treatments or strategies work best to improve outcomes and making a difference. It was thus claimed that with a PICO-based research question, one can only generate study designs that detect correlations between a treatment and a desired outcome (Andreas Nishikawa-Pacher, 2022).The intervention in this study is the improved attitude of the faculty members, restructure of the faculty and emphasis of the duty specifics etc.

The Outcome is the predicted result that should be visible, measurable, or detectable in the population under observation. In this study, the outcome is enhanced faculty outcome seen on students and knowledge discharge.

Relevant literature in all of the EBSCO e-bases (PubMed, research gate, Cochrane, web of science, psycheInfo, zandy, pubmed central and medline etc.) sought for. [58]The Boolean Algebra, word truncation, and categorization of search terminology based on the PICO framework were used to optimize the search (Bramer et al., 2018)

Database result filters were also employed to further limit the search results in addition to the inclusions/exclusions.

For the screening process, the title/abstract were read and then read the full article. The screening and selection process were utilized once the record was collected to make sure that only studies that matched the inclusion/exclusion criteria were included. [40] In order to make sure that the studies were pertinent to the research issue, [the PICO framework was employed in conjunction with the screening and selection process (Page et al., 2021). This reduced reviewer bias and made it possible to include those papers that had a direct bearing on the research issue (Page et al., 2021). [40]PRISMA, the preferred reporting item for systematic reviews and meta-analyses, served as the basis for the article screening and selection procedure (Page et al., 2021).

**Table 1** Inclusion/Exclusion Criteria

S/N	PICO	Inclusion Criteria	Exclusion Criteria
Population (P):	Faculty boards members of medical schools in Africa	Studies conducted with faculty Development in medical schools in Africa	Studies conducted on faculty development outside Africa
Intervention (I):	The intervention is any strategy, program, or initiative aimed at improving faculties in medical schools.	Studies that investigate interventions, strategies, or programs explicitly designed to develop faculties in medical schools	Studies that do not focus on interventions explicitly designed to improve faculties in medical schools.
Comparison (C):	No comparison	Study Design: Peer-reviewed primary research studies, including randomized controlled trials (RCTs), quasi-experimental studies, observational studies, and other study designs reporting quantitative or qualitative data.	Study Design: Non-peer-reviewed studies, conference abstracts, reviews, editorials, and commentaries. Studies with a high risk of bias or methodological flaws.
Outcome (O):	Enhanced faculty outcome seen on students and knowledge discharge.	Outcome Measures: Studies that report on outcomes related to faculty development	Outcome Measures: Studies that do not report relevant outcomes related to staff retention
Time (T):	While not always included, you may also consider specifying a time frame for the intervention and outcome	Publication Language and Date: Studies published in the English language. Studies done in the last 10 years, to capture a comprehensive range of studies.	Publication Language and Date: Studies published in languages other than English. Studies published before the last 10-15 years

**Table 2** Summary of Database Query Strategy

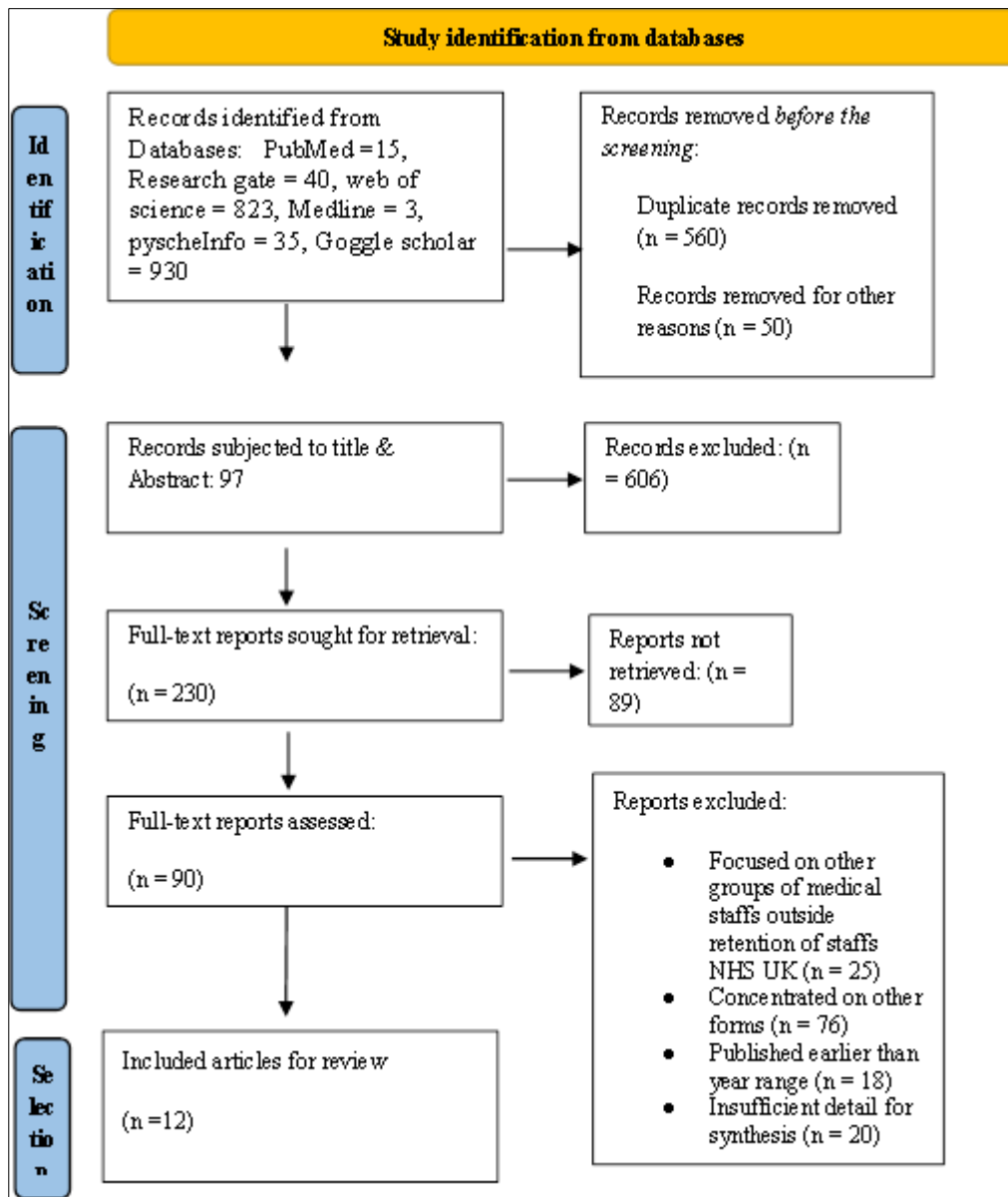
SS/N	PICO	Research Definition	Search Terminology
#1	Population	Improving faculty develop program in medical schools in Africa	"Improving faculty develop program in medical schools in Africa" OR "faculty develop program in medical schools"
#2	Intervention	Improved attitude of the faculty members; restructure of the faculty and emphasis of the duty specifics etc.	"improving faculty development" OR "faculty restructuring in medical schools"
#3	Outcome	Improved staff retention, a more skilled workforce, innovation, cost savings, an enhanced reputation, advanced health care and a positive impact on healthcare.	"a positive impact on knowledge discharge" OR "quality clinical in medical schools in Africa"
	Comparison	There is no comparison against.	none
s4	PICO		#1 AND #2 AND #3

## 2.2. Data Extraction and Analysis

[60]After being chosen, pertinent data was retrieved using Microsoft Excel from the chosen literature. Extracting pre-defined information from chosen articles and structuring it for additional analysis and synthesis is known as data extraction (Aromataris& Pearson, 2014).[60] The categories of data extraction include: Basic information such as author, year of publishing, and title of publication, study features which include the methodology, the aim, and the design. Study population and sampling such as sample traits, selection standards, and sample size, strategy for gathering data and finally research analysis, study findings, limitations and recommendations for more research (Aromataris& Pearson, ,2014)

## 3. Results

### 3.1. Database Query and Literature Selection



**Figure 1** Prisma Flow Diagram

**Table 3** Summary of Details from Selected Articles

Author(s)	Title	Aim	Study Design	Country	Key Findings
Matsika A, Nathoo K, Borok M, Mashaah T, Madya F, Connors S, Campbell T, Hakim JG (2018).	Role of Faculty Development Programs in Medical Education at the University of Zimbabwe College of Health Sciences, Zimbabwe. <i>Ann Glob Health</i> .	This article describes the implementation of faculty development at the University of Zimbabwe College of Health Sciences (UZCHS), a recipient of a MEPI award.	Qualitative	Zimbabwe	Different faculty development activities were implemented such as workshops, exchange visits, visiting professors program, advanced leadership training and curriculum development. The implementation of the activities brought positive developments to the college as confirmed by faculty and students. The majority of faculty interviewed (96%) confirmed that faculty development programs were very helpful in enhancing their expertise and skills. A similar number, i.e. 96%, also reported satisfaction with the training.
Elsayed Abdelkreem, Seham A. Abo-Kresha, Emad A. Ahmed , Doaa Ibrahim , Shimaa B. Hemdan, Mostafa A. Abdellah (2020)	Needs assessment for faculty development at an Egyptian medical school: a triangulation approach		Mixed-methods research	Egypt	Perceived FD needs are affected by accreditation standards, academic reward systems, and socioeconomic factors. The present study provides a transferrable model for conducting FD needs assessment, and the findings are important for planning effective and economically sound FD programs within the complex structure of today's medical schools.
Abdulaziz I Alhassan, 2022	<i>Implementing Faculty Development Programs in Medical Education Utilizing Kirkpatrick's Model</i>	to demonstrate how the Kirkpatrick model can be used as a framework for the development, implementation, and management of a comprehensive faculty development program	Literature review	Saudi Arabia	The discussion included in this article serves to begin the process of filling that gap within the academic literature by demonstrating that the Kirkpatrick model can be used to implement and manage faculty development programs in which there is an institutional focus rather than an individual focus. By

					focusing on faculty development that is aligned with larger institutional goals, medical schools can be more competitive and better serve the future healthcare professionals they are training.
Do-Hwan Kim, JinyoungHwang ,Seunghee Lee and Jwa-Seop Shin. (2017)	Institutional factors affecting participation in national faculty development programs: a nation-wide investigation of medical school		Qualitative	South Korea	This study adds to existing knowledge on factors affecting attendance at faculty development programs by identifying related institutional factors that influence attendance. While the variations depending on the basic characteristics were minimal, the organizational environment surrounding medical education significantly contributed to attendance. Addressing institutional as well as individual factors could contribute to improving participation by faculty members in faculty development programs.
Khan, K., Ramzan, P. D. M. Ahmed, D. S. & Nadeem, D. S. (2021).	Need Assessment for Faculty Development in Wah Medical College.	To determine the needs assessment for faculty development.	Cross sectional study	Pakistan	We concluded that the wah Medical College faculty is in need of faculty development programs that should be conducted by the medical education department within the college. The college should facilitate the faculty in the best possible way especially considering the limitations and responsibilities of the female faculty.
Dr. Jolly Bhattacharjya, Dr.Bobyjeet Goswami 2023	Faculty Development Programs (FDP) - as perceived by faculties of medical colleges of Assam	To evaluate the perception of faculties of various medical colleges of Assam towards faculty development programs of medical education technologies these theories thereby highlighting	Qualitative	India	This can be concluded that FDPs are useful in acquiring new knowledge, concept, and skills. Most of the faculties agreed that they are willing to attend FDPs, but are not getting opportunity. So FDPs should be conducted in every medical college on regular basis.

		any persistent gaps in understanding.			
Karine Angélica Cintra <sup>1</sup> , Marcos Carvalho Borges, Maria Paula Panúncio-Pinto, Luiz Ernesto de Almeida Troncon and Valdes Roberto Bollela, (2023).	The impact and the challenges of implementing a faculty development program on health professions education in a Brazilian Medical School: a case study with mixed methods	to evaluate the impact of this Essential Skills Module on the educational practices of participants two years after attending the module and the challenges faced during the process.	Mixed method approach	Brazil	This first in-depth evaluation of the long-term effects of a faculty development intervention in a Brazilian Health Profession Education school showed that participation positively changed participants' teaching & learning
Adkoli, KU Al-Umran, MH Al-Sheikh, KK Deepak, (2010)	Innovative Method of Needs Assessment for Faculty Development Programs in a Gulf Medical School.	To examine the Method of Needs Assessment for Faculty Development Programs in a Gulf Medical School.	Qualitative	Saudi Arabia	We demonstrated a participatory approach to needs assessment by identifying the gaps between "perceived importance" and "self-rated performance", as criteria for determining priorities. Findings also demonstrated the need for adopting a comprehensive approach to faculty development in which both departmental and organizational initiatives are required. Our findings are applicable to the Gulf Region context and our methodology can be applied anywhere.
Mahla Salajegheh, (2021).	Organizational impact of faculty development programs on the medical teacher's competencies	The aim of present study was conducted to study the organizational development for faculty development programs at Kerman University of Medical Sciences	Cross-sectional study	Iran	Specific characteristics of the organizational development process for faculty development programs in health profession education were recognized. The findings emphasized on the importance of these interventions on creating developments in the broader community system
Fatemeh Keshmiri (2023)	The effect of the Educational Scholar Program as a longitudinal faculty development program on	to assess the effect of the ESP on educators' capabilities to undertake SoTL activities	Qualitative	Iran	The creation of practical learning and supportive mechanisms influenced on the results. The outcomes of ESP indicated that the educators prepared

	the capability of educators as scholars	associated with their scholar role.			to conduct SoTL activities in their educational community
Danielle Bivanco-Lima, Giselle Burlamaqu, Klautau, José Knopfholz (2022)	Faculty development in medical school: how can it be improved?	To evaluate the needs of faculty development, reported educational practices and the view on teaching and learning from medical teachers' perspectives	a cross-sectional design	São Paulo	Teachers are motivated to engage in faculty development actions, with several needs regarding educational practices being identified, with differences being observed between genders. Although they reported a dialogic view of the teaching-learning process, this concept is not yet implemented in the reported practice in their disciplines.
Bilal, Salman Y. Guraya, Songsheng Chen, (2019)	The impact and effectiveness of faculty development program in fostering the faculty's knowledge, skills, and professional competence		A systematic review and meta-analysis		This article reiterates the incorporation of FDPs in all healthcare institutions for improving the academic performance of faculty with resultant enrichment of learners' knowledge and skills.



The databases assessed for literature search include PubMed, Research gate, Medline, web of science, PsycINFO, PubMed central and Google scholar. The search strategy outlined above was used in the database query process, which yielded: 3 from Medline; 15 articles from PubMed, 40 articles from research gate, 823 from Web of Science, 930 from Google scholar and 35 articles from PsycINFO. The retrieved articles were further subjected to a careful selection process which comprises various stages.

A total of 12 articles, which meet the inclusion criteria for this review, were finally selected and included in this review. A graphical illustration of the screening and selection procedure is shown in the PRISMA flow diagram (Figure 4.1). The flow chart shows the selection process, as well as the retrieved number of articles, articles excluded at each stage and the number finally selected.

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#### 4. Discussion

The prioritization of faculty development activities involves the identification of gaps between perceived importance and current performance, considering faculty suggestions for enhancing FD initiatives [35]. Despite funding shortages and a lack of technological equipment and upgraded laboratories, medical schools have experienced an influx of students over the years [64] (Adkoli BV et al., 2010).

Since 2011, Steinert (2011) has challenged the perception of Faculty Development (FD), urging a broader perspective due to significant changes in faculty roles and the increasing importance of FD in medical education. Assuming positive impacts of Faculty Development Programs on faculty performance, leading to improved student learning, numerous workshops and seminars have been conducted in Medical Colleges [27]. However, various barriers hinder the successful implementation of FD Programs, including faculty work overload, negative attitudes toward programs resulting in poor participation, and constraints related to resources and infrastructures [27] (Jolly Bhattacharjya and Bobbyjeet Goswami, 2023).

In health professions education (HPE), FD remains a challenge for universities and higher education institutions in developing countries, particularly in Brazil. The 2014 Brazilian Curricular Guidelines (BCG) for undergraduate medical programs emphasized the need for schools to maintain permanent FD programs to promote and value undergraduate teaching and learning aligned with medical school transformation. Despite this recommendation, limited changes have occurred in the past eight years. Significant obstacles such as work overload affecting teachers and health professionals, adverse cultural contexts, and a lack of financial investment have contributed to low advancement in this field and negligible scientific production in Brazil.

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#### 5. Conclusion

Findings from this systematic review have established that assessment of Faculty development programs (FDP) in medical schools has a significant impact on Medical Advancements and Innovation in education, health practices in areas like Disease Prevention and Public Health, Drug Discovery and Development and general advancement in medical education in Africa. The relegation of health education recently has become a norm and its beginning to affect the output and future of medical education health practices input and medicine advancement and this requires urgent intervention through elaborate enlightenment on the short- and improvement on long-term impact of Faculty development programs (FDP). Therefore, more research is needed for elaborate understanding of this topic, while effective measures may be put in place to forestall decline or dying Faculty development programs (FDP) in African medical schools.

##### *Recommendations for Further Studies*

In this study, the literature analysed needed more adjustment for other cofounders in the assessment of Faculty development programs (FDP), particularly as there is increase in health issues in Africa with limited funding of health sectors. In order to establish how long and the extent of impact of assessment of Faculty development programs (FDP) in medical schools, A more elaborate study that monitors achievements of faculty development programs in African medical schools, need to be worked on.

This will improve understanding on the impact faculty development programs in African medical schools that will provide answers to many areas with unanswered recent challenges in medical faculties.

### *Limitations of the study*

Only the available data from the literature used for this study, which were accessible and available at the time of research was used. Data from these articles needed to be more comprehensive for a more concrete assessment on the current impact of assessment of Faculty development programs (FDP) in Africa. Most of other studies screened did not conform to the objectives of this study and thus were not eligible for inclusion. This therefore calls for more uniform methodology in further studies on this subject. This restricts the generalizability of our findings. Evaluating faculty development programs in other context and universities is recommended. Furthermore, we did not measure the faculty development participant's perceptions, which could be a source of inclusion.

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### **Compliance with ethical standards**

#### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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