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EDITORIAL VIEW **EDUCATION & TRAINING**

Faculty development in low- and middle-income countries – Part I

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***Editor's Comments**: Faculty development in anesthesia around the world is a matter of discussion due to problems with funding and time allocation by the trainers to train. LMICs have extra burden of diseases and insufficient resources to put effective healthcare systems in place, which require prioritization of education and training. An editorial on holistic development of anesthetist through career progress by the same pair of authors was published by Apicare Journal (October 2021 issue). This is a continuation of the same in two parts. The first editorial has captured the LMICs strengths, limitations, and barriers to overcome obstacles in installing faculty development programs through teaching, training, and research systems. (Tariq H. Khan)*

Summary

Medicine is a dynamic subject, in the sense that the medical practitioners can never seize to learn; the new discoveries, new therapeutic agents, new diagnostic and interventional procedures and new knowledge continuously evolve with the passage of time. Similarly, teaching and training of new entrants into the specialty and grooming of the existing practitioners is a perpetual task. One of the prime duties of the educators and trainers of today is to prepare educators and trainers for the next generation. In this context, faculty development has gained much importance and is now known to be established in the developed world. However, this concept has not gained its due priority in low and middle income countries due to various reasons. This invited editorial sheds light on this vital issue.

Key words: Faculty; Faculty development; Faculty development program; Low and Middle-Income Countries

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In a recent editorial, the anesthesiologist's multiple roles, as a clinician, scholar, teacher, researcher, as well as an administrator were discussed.[1] It was observed that all the attributes might not be present from the start in everyone, but seem to develop over a period of rigorous education and training, followed by a formal or informal faculty development program (FDP). Nonetheless, several professional bodies responsible for developing the faculty of trainers and teachers has helped anesthesiologists to become all in one through formal, structured and well supported FDPs. While many isolated competency and outcome-based programs are being offered, the need to develop and train teachers, scholars, researchers, and educational leaders has now become a necessity.

Although faculty development (FD) in the developed world is a mature, relatively well-organized concept through structured programs, but it is not known to exist in the Low and Middle-Income Countries (LMICs). Even in the high income, developed countries provision of *funds* and *time* remains a challenge and has emerged as a barrier. LMICs generally struggle to provide the basic healthcare to their populations through financial and academic support, but provision of a standard FDP would be a greater challenge.

The barriers and challenges in the way of developing a robust *research informed* teachers' training and FDP is

not limited to the specialty of anesthesiology, but remains a universal phenomenon in LMICs. Several healthcare systems are undertaking research programs to identify disparities between the developed world and the LMICs, thus help achieve the goal of health equity between and within countries. Their research concluded that the selection of *focused research priorities* to improve access to high-quality healthcare services, financial protection to the disadvantaged populations in LMICs and building research capacity to run such programs independently, ethically, and contextually is vitally important.[2] The findings of Pratt et al [2] suggest that health systems consortia may be well organized to promote health equity, but still have scope for improvement, particularly in terms of achieving *inclusive priority-setting*. In LMICs, faculty or physicians' education system development is the prerequisite to an effective healthcare system based on distributive justice for the wellbeing of their population.[2]

Disparities in socioeconomic status of the countries is one factor, however Aslam et al.[3] identified an ageing population with increased life expectancy, changing disease pattern and prevalence of non-communicable diseases as an additional burden on an already weak healthcare system in LMICs. The researchers suggested developing strong primary and secondary care structures as well as strengthening tertiary care hospitals with an adequately trained healthcare workforce. This is where the proponents of FD consider putting up a robust educational training program to develop a faculty equipped with teaching and training skills. In LMICs, where delivery of safe healthcare to the local population continues to be a serious issue, expecting a budget allocation for non-patient based educational activities is somewhat over-optimism, but worth securing for the FD in the long run. The authors seemed skeptical that FDP implementation may not be possible with local budgets alone and may require major input from international organizations such as the World Bank and the World Health Organization as well as a chain of local donor networks.[3] Not only training or the FD is required desperately but strong measures to retain local trained workforce with improved training and living conditions and greater financial security. This may be achieved by mobilizing financial models, manipulating healthcare economics to provide insurance and security to the underprivileged population of LMICs to achieve universal health coverage available to the developed world. Edmonstone[4] proposed that ***action learning*** and capacity building within the cultural context in which leadership and management develops in LMICs, must reflect needs and nuances of local cultures for wider local population and trainers' acceptance.

As mentioned earlier that the FD issue in LMICs is not independent of their socioeconomic cultural and educational aspects at all levels. On a broader scale the global efforts are continuing to promote equitable access to quality education for all children and the focus is on LMICs. The mention of children education here is important as studies in two low-income countries, Bangladesh, and Tanzania, and one middle-income country, Jamaica utilized *Inclusive pedagogy* approach to provide learning experience in classrooms by creating opportunities for everyone to participate with the help and knowledge of support teachers, therapists, or rehabilitation workers to achieve greater social and academic inclusion.[5] The pedagogical learning continued in continuing adult learning processes of any new knowledge and skill acquisition in the healthcare settings.

The developed world is appreciably supporting the LMICs health, education, and teacher's faculty training issues. The USA government through the Medical Education Partnership Initiative (MEPI) are funding to improve the quality of medical education and research capacity in sub-Saharan Africa to tackle the challenges that include emigration of faculty, infrequent curriculum review, inadequate training in medical education, poor investments in infrastructure and lack of FDPs.[6] Zimbabwe College of Health Sciences (UZCHS) is the recipient of MEPI funding program and implemented FD activities including FD workshops, exchange visits, visiting professors' program, advanced leadership training and curriculum development which helped develop their expertise and skills. However, limitation of this intervention was the inability to collect data on *students'* performance and the clear demonstration of changes in *teaching performance* of the faculty.[6]

Payment for performance (P4P) schemes may incentivize individuals and programs to strengthen health systems and make progress towards universal health coverage and achieve sustainable service delivery and impact health outcomes.[7]

The shortage of healthcare providers in LMICs including anesthesia providers is well documented especially throughout Sub-Saharan Africa. Under the circumstances, well-designed, context specific and need based support training programs and curriculum for physician and non-physician anesthetists in LMICs are required to provide sustainable, safe, and cost-effective anesthesia care. Local graduates of LMICs must be included into the program as educational leaders. The anesthesia educational and training program must ensure that region-specific teaching methods are developed using problem-based learning techniques and inculcate quality, safety, and professionalism amongst the healthcare providers.[8] Most visiting teachers including program administrators focus on *specific areas of expertise of visiting teachers*, inadvertently ignoring the needs of the recipient program and LMICs faculty.

Therefore, a close cooperation is required to assess local needs with the collaborators and bring clarity of purpose in the FDPs in LMICs.

The WFSA Global Anesthesia Workforce Survey found major disproportions in physician and non-physician anesthesia provider availability amongst the most vulnerable populations in LMICs. Improving Perioperative Anesthesia Care and Training (ImPACT) Africa program was introduced in 2014 to close this anesthesia education gap in East Africa. They recommended a high-level investment and partnership to achieve goals by focusing on four key areas of *capacity-building, learning resource development, training educators, health care simulation*, and *data collection*.[9]

Anesthesia Patient Safety Foundation (APSF) primarily focuses on improving anesthetic safety in the US, through safety research programs, campaigns and national and international exchange of information. APSF also performed an assessment of Anesthetists' Non-Technical Skills (ANTS) in LMICs like Rwanda and identified recurring factors preventing care providers from practicing safely.[10] Communication in Rwanda was found to be influenced significantly due to lack of resources and a formal hierarchical structure. Safer Anaesthesia From Education (SAFE) course of AAGBI UK, has 'Training-of-Trainers' (TOT) component embedded in it to prepare Rwanda local learners to run the course without outside support. The SAFE course has a major obstetric component to teach, with active hands-on learning components, to encourage the practice change.[10]

Travel restrictions during COVID-19 pandemic impacted face to face learning and visits to LMICs from the academically established countries, so the relationships between high income countries (HICs) and partner organizations in LMICs changed predominantly in sub-Saharan Africa.[11] One of the examples is of 'Urolink', which represents the British Association of Urological Surgeons (BAUS) globally and delivers face-to face (F2F) teaching, training, and mentoring by UK urologists. BAUS 'Urolink' had to develop virtual online live webinars, and made archived recordings package accessible, and available to trainees in the UK, Zambia and Lusaka, at low cost; a system which was considered educationally durable and applicable to a wider population, even in the post COVID-19 era.[11]

Post-pandemic era brought some positivity into the initial gloomy outlook for the LMICs ongoing healthcare and FDPs, funded and supported by the developed world; developing distance learning, online teaching and training and evolving novel ways of using technology to outreach LMICs for swift, effective, and stable engagement on education and training fronts. The evidence to demonstrate effectiveness of online FDP for health professions educators in LMICs is limited. Nevertheless, *online HPE faculty development initiatives* through formal partnerships with LMICs to facilitate learning through engagement, benefitted LMICs participants with professional and career development. Community of Inquiry—a theory for designing online learning environments is recommended for Health professions educators in LMICs,[12] to develop professional and interpersonal skills through a well-designed, specifically constructed online community that prioritizes active discussion amongst the stakeholders.

Pakistan is one of the forty-seven countries amongst the designated LMICs worldwide. Higher Education Commission in Pakistan (HEC) has a very well-designed FDP for Pakistani Universities with plenty of support for scholarships and acquiring new qualification in Pakistan or abroad. Additionally, HEC encourage collaboration, opportunities to develop research projects and capacity building in the education system of both the partner countries. HEC claims to provide centralized leadership and instructional support for enhancing the effectiveness of teaching and enhance quality of learning in Pakistan. HEC project will help in achieving goals identified in VISION 2025 and MTDF 2010-15 of HEC.[13]

The purpose of the FDP offered by HEC is to encourage and reward existing faculty for developing their teaching skills in key areas of their expertise, and improve facilities by providing funds, if justified, to the Universities for upgrading their research facilities particularly small laboratory equipment, chemicals, IT equipment to establish up to date research laboratories to meet the international standards.[13]

Medical universities and schools, each has its own teaching and FDP, training future trainers for a number of years. In anesthesia, continuing medical education activities, collaboration and exchange of knowledge and information with the neighboring countries in Southeast Asia and beyond is well established.

FDPs must be designed to teach, train and support faculty members to adopt new teaching methods, underpinned in educational principles and theories and prepare them to perform in challenging situations where resources are sparse, low growth and low per capita income with political uncertainties and possible on-going conflicts. Although we strive for a learner-centered approach in our day-to-day teaching and adopt small group discussions, pros and cons debates, role plays through simulation techniques and project-based assignments to develop critical thinking, creativity, and problem-solving skills for the students, traditional didactic *non interactive lecture-based approach predominates* even in higher education institutions across the world.[14] It is about time we change the methods of delivering educational material for training our future generation and utilize

technology to convert contact based teaching methods to an effective interactive online method of teaching. Remember online teaching via zoom, MS teams and other e-platforms are a new normal, a tool to access better with LMICs on training issues.

Conflict of interest

Authors did not declare any conflict of interest. Both authors have been actively engaged in faculty developing programs in many of the developed countries, and have a research background encompassing over twenty years.

Authors' contribution

Both authors took part in the concept, data searching, manuscript preparation and final approval.

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