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Review Article

Faculty development program for general medicine in Taiwan: Past, present, and future

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ABSTRACT

General medical training programs are aimed at promoting competency in general practice skills with a holistic perspective of patient-centered medicine for the new generation of physicians. The faculty development program was implemented to promote learning and application of the six core competencies established by the Accreditation Council for Graduate Medical Education. This article describes the implementation and outcome of the current faculty development program. Additional assessment tools of the faculty development program are recommended to evaluate different perspectives of outcome. Our experience suggests that OSTEs are a realistic and well-received approach for faculty development that merits further investigation. According to the clinical instructors' response, our faculty development program effectively increased familiarity with various teaching and assessment skills needed to teach PGY 1 residents and ACGME competencies, and these clinical instructors also then subsequently applied these skills.

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1. Introduction

Medical education reform is a continuous process in response to advances in medical care and increased demands from patients and the medical environment. Therefore, medical schools have adapted new methodologies in the admission process, curricular design, educational strategies, and assessment [1].

The World Federation for Medical Education divides medical education into three phases: undergraduate, graduate, and continuing medical education. Nurturing of the physician starts during the undergraduate phase, with the focus shifting to passing medical licensure examination upon graduation. It is not until entering specialist training (such as internal medicine, surgery) that the medical education program is integrated and collaborated into a complete modern medical education system that meets the changing needs in health care provision, delivery, and patient

expectations. In many countries, postgraduate general medical training programs are implemented during the 1st-year residency training program, with emphasis on patient centered medicine.

The process of medical education reform in Taiwan is ongoing, and is not yet in line with Western medical education. This article will address the history of the medical education reform process, the implemented faculty development programs, and future perspectives.

2. Medical education reform in Taiwan

Since the 1990s, our country has undergone a series of medical education reforms: newly designed curriculum in 1992 and development of a general medical training program in 1998 by Taiwan National University; the establishment of a medical school accreditation system by the Ministry of Education in 2000; implementation of a postgraduate general medicine training program by the Department of Health in 2003; and a new accreditation system for teaching hospitals by the Taiwan Joint Commission on Hospital Accreditation in 2005 [2,3].

The severe acute respiratory syndrome (SARS) epidemic in August, 2003 had a significant impact on medical education reform,

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as it exposed the flaws in both health care and the medical education system in Taiwan. Following SARS, the initial phase of reform took place in medical schools where curricula and teaching methods were modified. The Department of Health, Executive Yuan initiated the second phase of reform by implementing the postgraduate general medical training program, which intended to alter the traditional process of physician training.

3. Undergraduate curriculum

As new knowledge of medicine rapidly expands, basic science and clinical courses become highly specified. Many medical students are not highly motivated to study basic science, due to lack of relevance to clinical application in medicine. A recent American medical education reform initiative emphasizes the integration of basic science and clinical courses to enhance correlation and continuum of courses. The problem-based curriculum utilizes clinical scenarios with emphasis on problem solving. Each session of discussion is based on a patient's clinical records and involves integration of basic science knowledge and clinical management. The National University of Taiwan was the first university in Taiwan to introduce the problem-based curriculum into its own curriculum in 1990 and other universities subsequently followed. The integrated courses are either based on organ systems or a patient's clinical problem. In addition, medical education on ethics and humanity has also gained importance in our country, with implementation of courses to explore related issues such as euthanasia and surrogate mothers [2,4].

4. The postgraduate general medical training program

Previous training programs in our country consisted of rotation between different specialties, where training was focused on a single organ system, with its related disease and treatment. Such a clinical education training program was considered to be premature and over specialized. Although this system offered adequate specialty or subspecialty training in medical knowledge, pathophysiology, clinical diagnosis, medical treatment or surgical procedures, it did not emphasize caring for the patient's psychological and social issues. In addition, due to the lack of interaction and cooperation between different specialists, it was difficult for each physician to be aware of the patient's overall condition; hence, patient-centered medicine and integrated medical care were not achieved. As a result, the general medical training program emerged and offered a model for training program reform [5]. Faculty development programs were developed and implemented to prepare clinician-teachers for transition in medical education.

5. Evolution of the faculty development program

The aim of the faculty development program is to empower the competencies of faculties in teaching six core competences proposed by the Accreditation Council for Graduate Medical Education (ACGME). The ultimate goal of faculty development is to promote change in individuals, curriculum, and institutions (medical school or teaching hospital). At the individual level, a good faculty development program facilitates knowledge acquisition, attitudinal change, and skill development in medical education, especially for novice clinician-teachers or clinician-teachers with suboptimal teaching skills. For those who already excel in clinical teaching, the program can enhance the quality of teaching and introduce new effective teaching behaviors and concepts of medical education. At the curriculum development level, clinician-teachers trained in small groups are more prone to modify teaching behavior while providing a variety of teaching skills or attitude. This helps the

promotion of general medical training in the future. At the institution level, the faculty development program brings change to the teaching atmosphere and leads to quality improvement in the whole organization [6].

6. Recent faculty development programs

Clinician-teachers are considered an important part of medical education as well as the learning environment and atmosphere. Studies across many countries in Europe and the United States revealed challenges and difficulties in the traditional apprenticeship teaching method and recommended promoting essential teaching skills, enthusiasm, and professionalism through faculty development programs [4]. In addition, the role of faculty development also included policy updates, adult education theories, and education trends [7].

Recent faculty development programs mainly consist of curriculum design, implementation of teaching programs, educational methods, and introduction of resources, assessment, and feedback. The most commonly used novel teaching methods include problem-based learning, clinical skills training, objective structured clinical examination (OSCE), mini-clinical evaluation exercise (mini-CEX), medical informatics, evidence-based medicine (EBM), health care matrix, and problem solving. The purpose of incorporating these educational formats into clinical medicine was to facilitate promotion of academic excellence and innovation [8].

7. Faculty development program for general medical training

The Taiwan Joint Commission on Hospital Accreditation Advancement started faculty development programs for general medical training in September 2003, to synchronize with the implementation of postgraduate general medical training. The purpose of the workshop was to recruit physicians and enhance their teaching skills so that they would become more effective clinician-teachers. At first, the selection of the physicians was recommended by accredited teaching hospitals in Taiwan. The workshop consisted of small group discussions followed by demonstrations of teaching in actual clinical settings. The courses were classified into beginner and advanced levels and were conducted via workshops or panel discussions. The content in the beginner's level included introduction to general medical training, establishment of the postgraduate general medicine training program, EBM, community medicine, medical ethics and laws, health care quality, patient safety, and teaching evaluation. Advanced courses included patient-centered health care, community health care, EBM, ethics, and laws [4].

At first, the postgraduate general medical training program was 3 months only, with monthly rotation in general internal medicine, surgery, and community medicine, as well as a total of 36 hours of lectures on core topics of general medical practice. The program was extended to 6 months in 2006 and to 1 year in 2011. Since 2011, more than 4000 faculty members have completed these courses.

The Taiwan Association of Medical Education (TAME) assisted in the establishment of the General Medical Training Demonstration Centers in various teaching hospitals in 2006, in order to enhance clinical teaching for medical students, residents, and clinician-teachers. In 2009, the Department of Health (DOH) launched a faculty development program entitled the Training Program for Clinical Instructors, to provide updated concepts and teaching skills on medical education to help prepare clinician-teachers for teaching postgraduate year 1 residents [8].

8. Training program for clinical instructors

The content and design of the program proposed by TAME was based on Hewson's education theory, which states that a variety of teaching activities are needed to enhance efficacy and promote behavioral change in clinician-teachers [9].

The program consists of two parts: (1) ACGME competencies-based seminar: a 1-day seminar composed of seven 45 minute sessions of lectures and workshops to teach the six ACGME core competencies and related teaching skills. The seminar was co-organized with the board of Medical Education of Taiwan; and (2) ACGME competencies-based practical teaching in clinical medicine: a total of 40 hours training. The content of the course included demonstration by faculty development instructors followed by onsite coaching of teaching in ambulatory teaching, inpatient teaching, case-based discussion, EBM, OSCE, and mini-CEX. A portfolio was designed by each training hospital and was filled up by participating clinical teachers [8].

The essence of the postgraduate medical education reform was based on the six core competencies established by the ACGME [10]. The competencies included: (1) patient care: the ability to provide patient-centered medical care, collect accurate data necessary for diagnosis, use precise clinical judgment to develop preventive, diagnostic and therapeutic treatment options, fully inform and provide disclosure, and implementation of the diagnosis and treatment procedures; (2) medical knowledge: ability to search new knowledge using an evidence-based approach, categorize based on level of evidence, and apply such knowledge to clinical use; (3) practice-based learning and improvement: ability to make the best judgment based on prior experience, constant self-reflection, and continuous improvement by life-long learning; (4) interpersonal communication skills: ability to communicate with patients and their families, colleagues, and other members of the health care team; also to listen attentively and possess humanity; (5) professionalism: ability to demonstrate respect, compassion, integrity, commitment to ethical principles, sensitivity to patient culture, sex, age, preferences, and disabilities; and (6) system-based practice: at the personal level, it includes logical thinking and systemic approach, such as competency of integrating different organ systems in clinical patient care. It also applies to the larger context and system of health care in order to provide optimal health care.

These six core competencies are the goal of residency training among medical educators on promoting medical education reform in Taiwan [10]. The connotation of the ACGME six core competencies taught in the faculty development program of Taiwan are in line with the expectations of the society for physicians [8].

9. Assessment of the “Training program for clinical instructors”

Based on Kirkpatrick's four-level model, various methods such as questionnaires, interviews, and objective structured teaching exercises (OSTEs) were employed to assess the outcome of the program [11]. A study by Lee et al [8] showed that participating clinician-teachers benefited most from activities such as bedside teaching and mini-CEX and reported improvement in understanding, teaching, and assessing the ACGME six core competencies.

One of the training hospitals not only performed the survey, but also invited clinician-teachers for presentations based on the training activities prior to completion of the training program. In addition, post-course meetings and onsite visits of clinician-teachers in clinical teaching were arranged a few months after

the program, to assess the application of the skills used in daily work. The impact of the program on the postgraduate year 1 residents and the training institute was assessed and evaluated by a routinely scheduled forum.

One recent tool that has gained popularity is the OSTE. It usually consists of multiple stations and can be used to both teach and evaluate teaching skills based on simulated scenarios. One of the main advantages of the OSTE was attributed to objective and immediate feedback from standardized learners and peers [12].

Through faculty training of clinician-teachers, improvement in the learning environment, and system transformation, the preliminary results of the ongoing medical reform were encouraging [4].

10. Challenge in medical reform

After these years, most clinician-teachers already had a basic concept of teaching in medicine. Therefore, the shortage of trained teachers was no longer a problem; however, the quality and competency of clinician-teachers became the most important issue [13]. For those clinician-teachers who were competent and enthusiastic, the pressure of academic promotion had a great impact on distribution of their time in teaching. In addition, the influence from policies stipulated by Taiwan's National Health Insurance system, the evolution of the medical education system, and the trend of globalization had a significant impact on students' clinical learning, selection of specialization, and meeting social expectations of the medical profession. The development of technology and internationalization also changed the learning behavior of medical students; therefore, clinician-teachers needed to be multifaceted, perceptive of society, and aware of students' learning rights, in order to cope with the rapidly changing society [2]. Consequently, it became vital to raise incentives for participation in faculty development training and establish a good reward system. Institutes should attend to clinician-teachers' needs and difficulties, create a good teaching environment, and promote motivation. In addition, additional training courses should be offered and more opportunities to pursue degrees in medical education should be provided [14,15].

11. Future perspectives

The strategies and the trend of the current international medical education in enhancing the quality of clinician-teachers include standardization, accreditation of training courses and medical teaching, authentication of clinical teachers, assessment and evaluation, exploration of theory of education, and establishment of specialized department in charge. These are important references for future policy establishment in faculty development programs in Taiwan [4,16].

Therefore, in order to foster a new era and to strengthen the ability of clinician-teachers, our country should refer to international trends of transformation in faculty development while incorporating the history and issue of medical education development in Taiwan. Future policy should be directed to a collaborative approach between medical institutions offering faculty development programs and medical education committees.

The progress of promotion in medical ethics and laws is influenced by factors such as lack of qualified teaching staff, scarce resources, and tight curricula in medical schools. In addition, it is difficult to find a clinician-teacher who is specialized both in general medicine and medical ethics. Therefore, faculty development should also incorporate teaching programs and evaluation in this aspect [17].

The school should ensure continuous improvement of teaching skills for clinician-teachers, while the clinician-teachers should be responsible for provision of educational objectives, content, models, and assessment. When clinician-teachers became competent, they were then able to offer courses, promote self-directed learning, and create a learning atmosphere for young medical students. Teachers were advised to review and modify curriculum content constantly based on social needs and patients' feedback. In addition, regular teaching quality assessment and peer assessment should be conducted. In addition to recruitment of competent clinician-teachers, teaching institutions should provide learners with library resources, research laboratories, clinical equipment, and adequate study space. In addition, schools should maintain an appropriate administrative system where its function should extend to provide a full range of education resources, and not just limited to the preservation of academic information. Teaching institutions were encouraged to create a positive learning environment in order to foster academic knowledge acquisition, good quality of care, and research. After completion of the faculty development program, clinician-teachers were encouraged to participate in the process of curriculum reform. Support from the teaching institutions was needed for clinician-teachers to remain motivated and enthusiastic in order to facilitate a smooth and successful medical education reform.

12. Conclusion

In the era of medical education reform, clinician-teachers need to be aware and up-to-date in medical education policies, novel teaching methods, ACGME competence goals, and evaluation tools. Various faculty development programs were implemented in different phases of medical education reform to empower clinician-teachers to become competent educators. Future design of a faculty development program should continuously be modified to attend the rapidly changing needs in medical education and to facilitate training of well-qualified clinician-teachers who are responsible for

establishing a vibrant academic environment in shaping physicians of the next generation.

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