Medical Education in the Republic of Korea*

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한국은 1962 년 부터 시작된 경제개발계획의 성공으로 국민생활수준이 향상됨에 따라 의료 수요가 폭증하게 되었고 이 수요를 충족시키기 위해 1961 년에 8 개 의과대학에서 1987 년에 31 개 대학으로 증설하였으며, 같은 기간에 졸업 정원은 650 명에서 2,880 명으로 증가되었다. 갑자기 늘어난 의과대학에 교수 요원의 부족으로 의학교육의 질적인 저하를 우려하게 되었다. 또한 급속히 발전하는 의학을 의과대학 4 년동안에 주입식 강의를 통해 가르치고 있어 의대 졸업생들은 문제해결 능력이 부족하다는 비판이 일고 있다. 세계 여러 나라에서 의학교육에 대한 비판과 개선을 위한 노력이 일어나고 있는 가운데 우리나라에서도 1970 년대 부터 의학교육에 대한 세미나 또는 workshop 을 개최하기도 하고 불특강의를 도입하는 학교도 있다.

1986 년 11 월 서울에서 23 개 의과대학장을 비롯한 의대교수, 문교부와 보건사회부의 관계 공무원, 병원협회와 대한의학협회의 대표자 등 73 명이 참가한 의학교육에 대한 전국 회의가 열렸다. 이 회의에서는 세계의학교육 연맹에서 제안한 6 개 주제에 대한 토의가 있었는데 토의 결과를 요약하면 다음과 같다.

- 1) 의대 교육은 의료서비스 보다 의과학에 더 큰 비중을 두어야 한다. 왜냐하면, 의료서비스에 대하여는 졸업후 수련과정에서 가르치기 때문이다. 그러나 의료윤리, 사회과학, 보건의료 서비스 연구 등을 보강할 필요가 있다.
- 2) 의학교육은 단순히 의학지식 전달에만 치중할 것이 아니라 전문인으로 필요한 수기와 태도를 연마하고 가치관을 확립하는 데도 힘을 써야 한다.
- 3) 의학교육을 위해 최소한 학생 10 명당 임상교수 2 명과 기초교수 1 명, 교수 2 명당 조

교 1명, 각 교실마다 기사 2명과 사무원 1명을 갖추어야 하며 강의실, 도서관, 실험실, 해부실, 임상실습 학생 1인당 2개 병상이 할당될 수 있는 규모의 교육병원 등이 갖추어져야 한다.

- 4) 의대학생 선발 정책은 그 나라의 의사 수요를 감안해야 하나 의과대학의 자율성이 존중되어야 한다. 학업 성적만으로 학생을 선발하는 것은 타당하지 못하며 의사로서의 적성과 인성을 고려해야 한다.
- 5) 의과대학의 교육과정은 졸업후의 수련을 대비하는 방향으로 짜여져 있으나 변화하는 시대적 요구에 부응하고 있지는 못하다. 보수교육은 의료인의 자질향상을 위해 필요하다고 인식하지만 대한의학협회의 보수교육 프로그램으로는 불충분 하다.
- 6) 의과대학은 보건의료 서비스 체계와 밀접한 관계를 맺고 학생들이 지역사회에의 현장에서 체험을 할 수 있도록 해야 한다.

의학교육의 개선을 위한 노력으로 의사국가고시를 지식 수준의 시험에서 문제해결 능력을 시험하는 방향으로 개선할 계획이며, 1988년 1월 국립의과대학장과 대학병원장 연석회의에서 합동 교과과정위원회를 구성하여 문제해결 지향적 교과과정을 개발하기로 하였다.

I. Medical Schools and Medical Education in Korea

As the standard of living of the people in Korea improves on account of a remarkable success of economic and social development plans since 1962, the demand for the medical services has been increased rapidly and it was boosted further by the implementation of medical insurance system in 1977. To meet the snowballing demand for medical services, 5 medical colleges were established during the second five-year economic development plan period(1967~1971), 8 colleges during the fourth period(1977~1981), and 6 colleges during the fifth period(1982~1986). Three more medical colleges were approved by the government in 1987 to make a total of 31 medical colleges. Also, the class size of existing colleges was expanded. Consequen-

tly, authorized number of the graduates of medical colleges per year increased from 650 in 1961 to 2,860 in 1986. (Table 1)¹⁾

Table 1. Number of medical colleges and the authorized maximum number of graduate per year

Year of establishment	Number of medical colleges		Authorized Maximum number of graduate per year		
	Newly established colleges	Cumulative number	Index of Increase	Number	Index of increase
-1961	8	8	100	650	100
1962-1966	1	9	110	1,020	157
1967-1971	5	14	175	1,500	230
1972-1976	0	14	175	1,650	236
1977-1981	8	22	285	2,500	375
1982-1986	6	28	350	2,860	440
1987-	3	31	388	2,880	443

Nevertheless, the government projects that there will be a shortage of doctors²⁾ while the medical society protests that there will be problems of overproduction.³⁾ It is not

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clear whether M.D. manpower will be short or excessive because it varies according to the criteria for assessment and according to the method for estimating the need for doctors and variables included in the estimating formula. However, it is clear that the faculty resource for the medical colleges is in

serious shortage for too many medical colleges were established in a short period without any faculty development plan in advance. The shortage of faculty is much more serious in the basic science than in clinical science. (Table 2)¹⁾ Increased number of medical colleges, increased class size of

Table 2. Number of teaching staffs by medical school, March 1986.

Medical Colleges (Year of establishment)		Authorized number of graduate per year	Minimum requirement by law	Basic Science		Clinical Science		Recruitment rate (%)
				No. of staffs recruited	Recruitment rate (%)	Minimum requirement by law	No. of staffs recruited	
National school	Seoul (1946)	200	44	50	113.6	77	164	213.0
	Kyungpook (1923)	160	38	23	60.5	67	71	106.0
	Chonnam (1944)	160	38	34	89.5	67	70	104.5
	Pusan (1955)	160	38	23	60.5	67	65	97.0
	Chungnam (1967)	120	32	17	53.1	57	46	80.7
	Chonbuk (1971)	120	32	18	56.3	57	51	89.5
	Kyeongsang (1981)	80	26	22	84.6	47	24	51.1
	Chungbuk (1987)	60	23	-	-	42	-	-
Private school	Yonsei (1885)	150	37	43	116.2	65	208	320.0
	Chosun (1967)	140	35	17	48.6	62	55	88.7
	Korea (1937)	120	32	30	93.8	57	144	252.6
	Kyunghee (1965)	120	32	16	50.0	57	82	143.9
	Hanyang (1968)	120	32	34	106.3	57	118	207.0
	Catholic (1954)	100	29	54	186.2	52	353	678.8
	Yonsei Won Ju (1977)	100	29	9	31.0	52	49	94.2
	Soonchunhyang (1978)	100	29	24	82.8	52	147	282.7
	Inje (1979)	100	29	17	58.6	52	125	240.4
	Chung-ang (1971)	90	28	16	57.1	49	60	122.4
	Ewha (1945)	80	26	16	61.5	47	50	106.4
	Keimyung (1979)	80	26	16	61.5	47	85	180.9
	Yeungnam (1980)	80	26	15	57.7	47	75	159.6
	Kosin (1981)	80	26	15	57.7	47	57	121.3
	Wonkwang (1981)	80	26	9	34.6	47	47	100.0
	Hallym (1982)	80	26	19	73.1	47	155	329.8
	Inha (1985)	60	23	1	4.3	42	-	-
	Keorukuk (1986)	60	23	-	-	42	-	-
	Dongkuk (1986)	60	23	1	4.3	42	-	-
	Dong-A (1986)	60	23	1	4.3	42	3	7.1
Total		2,920	831	540	65.0	1,486	2,304	155.0

existing colleges, and shortage of educational resources have made the medical educators as well as the practitioners concern about the quality of medical education.

Medical education in Korea consists of two-year premedical course and four-year medical course. The premedical course is for general education in the liberal arts. The curriculum of medical course consists of two parts; basic sciences in the first two years and clinical sciences in the third and fourth year. The curriculum is almost the same across all the medical colleges with some variations. Variations are part of the basic sciences was transferred to the premedical course, part of the clinical sciences was transferred to the second year of medical course, part of the basic sciences was transferred to the third year of medical course, and combination of these.

Nearly all of the medical colleges have statement on the goals and objectives of their medical education but there is no common objective upon which all of the medical colleges have agreed.¹⁾ Most of the goals and objectives are stated in an ambiguous and abstract philosophical terms and only a few colleges expressed the specific educational objectives and the roles after graduation. Primary health care concept is explicitly mentioned in the educational objectives of 6 medical colleges, implicitly in 10 colleges, and not mentioned in the rest of colleges.

Traditional teaching method in medical colleges has been highly structured, discipline-oriented lectures by individual departments aiming for primarily cognitive development. However, about one-half of medical colleges have adopted block lectures in part of their curriculum since mid-1970s. Progressive

medical educators have criticized that indiscriminate cramming education of rapidly growing medical knowledge has produced many knowledgeable but not clinically competent doctors and more medical colleges started to concern about improving the medical education in recent years. Most of the medical colleges have a faculty seminar or workshop annually and the prevailing topic is the issues related with medical education.

II. National Conference of Medical Education

A national conference on medical education was held on November 14, 1986 at Sheraton Walker hill Hotel in Seoul with 73 participants including 23 deans and 46 professors of medical colleges and delegates of Ministry of Education, Ministry of Health and Social Affairs, Korean Hospital Association, and Korean Medical Association.⁴⁾ The conference was sponsored by the Deans Council of Korean Medical Colleges and addressed six themes⁵⁾ set out by the World Federation for Medical Education. Answers to the specific questions pertaining to each of the six themes drawn at the conference are summarized hereunder.

1. Educational priorities for medical schools.

(1.1) In medical school education, the science of medicine should be more emphasized than the medical services. The medical services will be taught mainly in the postgraduate training course. The curriculum of medical school, however, should contain more of humanities, ethics, social sciences, and health services studies.

The minimum acceptable competences upon graduation from a medical school are :

(1.2) In preparation for further learning, the graduates should have the abilities of self-learning and self-discipline which require basic knowledge of medicine and capabilities of self-development, self-evaluation, and creative research.

(1.3) In individual diagnosis and management of illness, the graduates should be able to diagnose and treat the prevalent and important diseases and injuries in their community. To be able to do these, they should have basic knowledge of illness, capability to practice the basic medical and surgical procedures, and attitude and capability to maintain a good doctor-patient relationship.

(1.4) In promotion of health and prevention of disease, the graduates should be able to assess the health status of individuals as well as a community and to practise the basic preventive measures against specific illnesses and the general health promotive measures.

(1.5) In collaboration with other health worker, the graduates should have the attitude to understand the role and responsibility of other health workers and capability to cooperate with other health workers as a team member.

2. Educational strategies for medical schools

(2.1) Medical school education should not be dominated by the effort to transmit biomedical knowledge but should pay an equal attention to the acquisition of professional skills, attitudes, and values as these are essential for a good medical care.

(2.2) The instructional process should be

dominated by active learning opportunities through which students develop the ability of self-learning. It is important because medical education is a life-long education.

(2.3) Examination and other evaluation procedure should cover equally the knowledge students have acquired, their ability to use knowledge and their proficiency in a broader range of professional competences.

(2.4) Medical schools need to require or encourage or reward the teaching staff members to become increasingly familiar with and skilled in the use of a wide range of educational strategies and tactics.

(2.5) The primary setting for clinical education in a medical school might be a hospital but non-hospital setting, e.g., community and private clinics, should be utilized.

(2.6) The mechanisms to monitor and record the implementation of the strategies that have been agreed upon by the medical schools might be exchange of curriculum, standardization of curriculum, and accreditation of medical schools.

3. Supporting resources

(3.1) A sound program of medical education is required for the nucleus of teaching staff who have full-time appointments.

(3.2) Minimal requirement of full-time teacher is two clinical and one basic science teachers for each ten students of all grades.

(3.3) The acceptable supporting person-neles are one teaching and research assistant per two teachers, two technicians per department, and one secretary per department.

(3.4) About 30 per cent of the operational support to the students should be derived from the tuition charges to students and the

rest should be supported by the government or other public sources.

(3.5) Minimum acceptable facilities were suggested as following :

a. For basic sciences

- i) Lecture room-capacity : 1 seat per student of each grade
- ii) Multidisciplinary laboratory-capacity : 1 seat per student of each grade
- iii) Gross anatomy laboratory-capacity : 1 seat per student of gross anatomy class

b. For clinical sciences

- i) Lecture room-capacity : 1 seat per students of each grade
- ii) Conference room-capacity : 1 seat per 10 students of each grade
- iii) Teaching hospital-bed : 2 beds per student of clinical course

(3.6) A suitable library resource was defined as sitting capacity of greater than 20 per cent of the total number of students with collection of more than 30 books per student and more than 15 journals per department.

(3.7) Medical school needs to develop affiliated health center, private clinics, and secondary care hospitals within the catchment area and rotate the students to these facilities.

4. Admission policies, medical schools and medical manpower.

(4.1) Medical school admission policies in a country should reflect the national need for doctors. However, autonomy of the medical schools should be respected.

(4.2) Open admission policy was not considered as a reasonable practice in Korea.

(4.3) Academic performance data were not considered appropriate as the sole or major

criterion for selection or retention of medical students.

(4.4) The most important additional criteria for selection or retention of the medical students are the assessment of personality and the ability to devote oneself to the health services.

5. Educational linkages : the continuities between basic, postgraduate, and continuing medical education.

(5.1) The medical school curriculum is planned with appropriate attention to the training which follows and is needed after graduation, but it should be more flexible as it is very rigid.

(5.2) Although many medical schools have adopted the primary health care in the educational objectives, their curriculum does not reflect appropriately the new change.

(5.3) Medicine is not actually practised in accordance with the knowledge, skills, professional attitudes, and values which are advanced with the educational objectives of medical school curriculum.

(5.4) It was acknowledged that the continuing medical education(CME) is important in maintaining the competence of experienced doctors and ensuring their continuing fitness to practise. However, current CME program provided by the Korean Medical Association is not enough to meet the need.

(5.5) The medical school curriculum and postgraduate training programs are not aligned with the proper provision of health care to the population on an equitable basis. In fact medical schools in Korea do not aware of this problem.

6. Integration of medical education with the health care system.

(6.1) Medical school education should give greater attention to providing more learning opportunities in non-hospital ambulatory setting, i.e., primary medical care.

(6.2) More intimate links should be established between medical education and health service system. Changes of the government policies on medical manpower would require different types of medical doctor or different medical manpower-mix. Medical education should reflect the policy changes.

(6.3 and 6.4) Medical schools should assure the responsibility for a system of comprehensive health care and for some defined population group. In Korea, however, reformation of the health care system is required before medical schools take responsibility for the comprehensive health care system. Medical schools should be encouraged to expand their demonstration health projects and to present actively their opinions on health policy.

(6.5) Medical schools should establish closer links with other health professions in both education and services.

III. Changes of medical school curriculum and strategies to improve the medical education in Korea

The medical school curriculum had been modified in 1970s as the medical educators became aware of the problems related with the subspecialty-oriented medical education. Major modifications of curriculum and teaching method were adjusting the teaching sequence of various subjects(transferring some of the basic sciences to the premedical

course, transferring some of the clinical sciences to the second year of medical course, etc.), adopting community medicine and non-medical subjects(e.g., ethics, health economics, behavioral science, etc.) into the curriculum, and adopting the block lecture.

There has been substantial resistance to the modification of curriculum. To facilitate changes of the curriculum, medical schools have held faculty seminars or workshops on medical education. Beside the national conference to deal with the six themes proposed by the World Federation for Medical Education, the Korean Medical Association held a national seminar on strategies for changing community needs and future medical education on June 26-28, 1987 with 96 participants, including 28 deans of medical colleges, guest speakers from Japan, U.S.A., and Australia.⁶⁾ The issues discussed at the seminar were adequacy of the primary health care concept as an educational objective of the medical schools, the need for revision of the medical school curriculum, teaching medical ethics and attitude, and strategies for adopting innovative curriculum.

In 1986, the Board of National Medical Licensing Examination was established by the Ministry of Health and Social Affairs. The board consists of 16 senior medical educators of 13 medical colleges. The board has developed a plan to revise the licensing examination which in turn will influence on the medical education.⁷⁾ The direction of change in the medical education to which the board is aiming is from the discipline-oriented and spoonfeeding the knowledge to the problem-oriented and clinical competency development.

The latest development to improve the medical education was the joint conference of deans of 8 national medical colleges and directors of 8 national university hospitals on January 29-30, 1988.⁸⁾ Objectives of the conference were to define the causes of conflict and invisible barrier between the staffs of clinical departments at the university hospital and the staffs of basic science departments at the medical school and to develop the strategies to resolve the conflict and barrier and to promote the cooperation in both undergraduate medical education and postgraduate education and training, patient care, and research. It was decided to establish a collaborative curriculum committee consisted of delegates of 8 national medical colleges(one staff of clinical science and one staff of basic science from each college) and staffs of the National Trainer's Training Center. The committee will be tasked to develop the educational objective (community-oriented), a model curriculum (problem-based), and teaching methodology and materials. The model curriculum will be implemented at each college. It is expected that most of the private medical colleges

will also adopt the model.

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