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Medical Education and Medical Practice in Korea*

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Korean medical history goes back about 2,000 years and began with an introduction of oriental medicine, mainly from China, along with Confucian and Buddhistic cultures. Oriental medicine is based on a philosophical belief, the dualistic cosmic theory of the Yang and the Um. The Yang, the male principle being active and light, is represented by the heavens; the Um, the female principle being passive and dark, is represented by the earth. The human body is controlled by the Yang and the Um and the harmony of these two principles is essential for the maintenance of the individual health. According to the concepts of oriental medicine, the pathophysiology of all diseases is based on the disturbance of these two principles. Thus, diagnosis and treatment have been directed to the determination and restoration of the disturbed balance in diseased states. Diagnosis in oriental medicine is largely dependent upon the examination of the pulses and the treatment upon uses of herb medicine and acupuncture.

The scientific basis of oriental medicine, however, has never been clearly established, perhaps because of our social trend in old days, that learning of Confucian philosophy was greatly emphasized while study of natural science was degraded. Neverthelsse, oriental medicine prospered for many centuries and continued to maintain its popularity even after Western medicine was introduced to our country. Its puopularity has become gradually lessened with time in urban areas, but it is still favored in rural areas. The Korean National Assembly has been thus pressed to legalize a college of oriental medicine and pharmacy in spite of strong opposition by the Korean Medical Association as well as by the Government. This school presently admits 100 students every year. After completing four years of study at this college, one is granted a license to practice oriental meidcine. As shown in figure 1, there are 2,830 herb doctors throughout South Korea. Its ratio to the population is about 1 to 10,000(1).

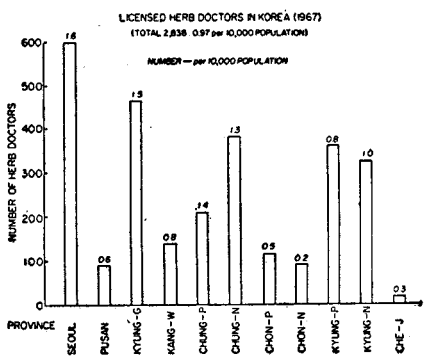

Fig. 1. Licensed herb doctors in Korea (1967)

At this day and age, oriental herb medicine, in my opinion, has little place in a modern health care program and it must be replaced by modern medical care. However, we cannot help but admit the fact that oriental medicine responds to the demand of a relatively large part of our population which has no access to modern medical care. It is, therefore,

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explicable that oriental medicine, unscientific as it is, will linger on in our society for some time and will continue to be a problem for modern haelth care programs. It will, however, gradually subside as our socioeconomic situation improves and modern medical care programs reach the entire population.

Western or modern medicine was introduced to Korea about the end of the 19th century along with Western culture. In 1884, Dr. Horace N. Allen, an American physician, came to Korea as a Christian missionary. He was summoned to the palace to treat a prince who was seriously stabbed by an assassin, since the herb doctors of the Royal Court had failed to cure him. Dr. Allen treated his wound and saved his life. This pleased the Emperor and he gave Dr. Allen a hospital in return where he could practice Western medicine. He also became a physician of the Royal household as well. This was the first hospital of modern medicine in Korea (2). Dr. Allen later was appointed as the United States Minister Plenipotentiary to Korea. Dr. O. R. Avison, another Presbyterian medical missionary, succeeded Dr. Allen as the Director of the hospital. Dr. Avison was interested in medical educzation and began to teach Western mdeicine to young Koreans. In 1899, Dr. Avison attended the World Missionary Conference held in New York and gave a speech on the necessity of medical education in Korea. Mr. L. H. Severance, a wealthy philanthropist of Cleveland, Ohio, impressed by Dr. Avison's speech, made a generous gift to build a medical school and its hospital. Thus, the first modern medical school was started in Korea and was named after Severance. It was renamed Yonsei University College of Meddicine in 1958. Some years later, in 1907, following the Japanese occupation of Korea, the Japanese Government founded the second modern medical school in Seoul This was called Keijo Imperial University Medical College and was renamed as Seoul National University Medical School after the end of the Second World War. By the end of the Second World War in 1945, the number of modern medical schools in Korea had increased to eight as shown in table 1. Two of them were in North Korea and all but two were supported by the Government. The total number of students enrolled then was 2,189 and there were 855 staff members. About half of the students and staff were Japanese. As you will note, the Government supported medical schools had many more Japanese students than Koreans. During the Japanese occupation, the medical profession was favored by Korean people because it offered political as well as financial security. Because of this fact, medicla science was the most advanced field among naturla sciences in Korea at the end of the second World War. During this period, the system of medical education was essentially the German system emodified by the Japanese. The medical curriculum was not far different from that we have now, but teaching methods differed considerably, emphasizing com-

Table 1. Medical schools in South and North Korea at the end of second world war (1945)

Medical Schools	Location	No. of Students			No. of Staffs			Founded year
		Kor.	Jap.	Total	Kor.	Jap.	Total	
Keijo Imperial (seoul National)	Seoul	100	273	473	245	226	471	1 9 2 4
Keijo College	Seoul	91	323	413	96	106	202	1 9 0 7
*Severance (Yonsei)	Seoul	285	2	287	121	4	125	1 8 9 9
*Kyungsung Woman (Woo-Suk)	Seoul	224	86	310	87	10	97	1 9 3 8
Taeku (Kyjng-Puk)	Taeku	90	200	290	32	16	48	1 9 3 9
Kwangju (Chon-Nam)	Kwangju	140	60	200				1 9 4 5
Pyung-Yang	North Korea	166	199	365				1 9 3 9
Ham-Hung	North Korea	140	60	200				1 9 4 5
Total		1,236	1,236	2,538				

*Private medical schools
( ) indicates the name of the schools at present.

pulsory didactic lectures with few laboratory and clinical hours during the undergraduate years. The postgraduate training then differed entirely from the present system of internship and residency training program in the United States. It existed mainly in the form of a prolonged apprenticeship through which specialty training was accomplished. During the apprenticeship one was required to do research, mainly animal experiemtns, and write a thesis. Upon approval of the thesis the degree of Doctor of Medical Science was granted. The apprenticeship usually took five or more years.

Following the end of the Second World War our country was divided into South and North Korea. South Korea went through social reform adopting Democracy as a form of Government. Along with the social change, all the educational systems were altered in the direction of the American System. Attempts were also made to adopt the American medical educational system. Unfortunately, the Korean War broke out before the change was well underway, and everything remained at a standstill during the war. A real change in our medical education took place after the Korean War as my country was recovering from the tragedy of war. The system of medical education which we have now is very similar to that in the United States. After 12 years of elementary and high school education, one becomes eligible for admission to the two pre-medical college. The admission is solely determined by competitive, written entrance examinations given by the University. The curriculum of the pre-medical college at the Yonsei University is shown in table 2 as an example. As you note, it has perhaps too many compulsory subjects and lacks elective courses for individual development. The curriculum of the pre-medical college is determined by the College of Liberal Arts and Science according to the requirement laid down by our Ministry of Education. After completing the two years of college, one is automatically admitted to the medical school. Thus, the pre-medical college is, in fact, an integral part of the medical school in Korea, yet it is not guided or controlled by the latter.

Table 2. Curriculum requirement for the premedical course

	First Semester (hours a week)			Second Semester (hours a week)		
FIRST YEAR	Lecture	Lab.	Credit	Lecture	Lab.	Credit
Korean	3		3	3		3
English	3	1	3	3	1	3
German	2		2	2		2
Cultural history				3		3
Sociology				3		3
Athletics	2		1	2		1
General mathematics	4	2	4	4	2	4
General physics	3	2	3	3	2	3
General chemistry	4	2	4	4	2	4
General zoology	2	2	2	2	2	2
General botany	2	2	2			
	25	11	24	29	9	28
SECOND YEAR						
English	3	1	3	3	1	3
Christianity	2		2	3		3
Philosophy	3		3			
Psychology				3		3
Latin				2		2
Athletics	2		1	2		1

Differential calculus	3	2	3			
Physics	3		3			
Organic chemistry	3	2	3	3	2	3
Qualitative analysis	2	2	2			
Quantitative analysis				2	2	2
Physical chemistry	2	2	2	2	2	2
Comparative anatomy	2	2	2	2	2	2
Embryology	2	2	2			
Cytology				2	2	2
Genetics				3	3	3
TOTAL TOTAL	27	13	26	27	13	26

For undergarduate medical education, we have followed closely the American system. At the present time there are 12 University Colleges of Medicine as shown in table 3. Seven out of 12 medical colleges are in the Seoul area. It may be noticed that a total of 2,679 students are enrolled in medical schools and every year about 700 students are graduated. The medical curriculum of Yonsei University College of Medicine Medical School is shown in table 4 as an example. As you note, this is very similar to that of the American medical school.

Having adopted the curriculum and teaching methods, we needed proper funds, facilities and trained personnel to implement them. To our regret, we did not have them. Endowments, foundation grants, and government support of research and teaching, which play such an important part in the achievements of American Medical Schools, are either completely lacking or of very meager extent in Korea. Consequently, most of the medical shcools, particularly private schools have to depend on hospital income and student tuition for their operation. Medical staffs at the schools are strictly salaried and are not allowed to do private practice. Thus, as you may imagine, it is not possible for most medical schools to provide adequate teaching facilities and materials.

Fortunately, we had outside aid which came in

Table 3. University College of Medicine in Korea (1968)

Colleges	Location	Premedical Admission	Admission	Medical Student Graduates	Total
Seoul National	Seoul	100	120	103	413
Yonsei	Seoul	80	80	71	284
*Catholic	Seoul	75	78	67	293
*Weha Woman's	Seoul	60	65	41	214
Woo-Suk	Seoul	80	160	113	527
Kyung-Puk National	Taeku	80	80	65	278
*Pusan National	Pusan	80	85	81	328
Chon-Nam National	Kwangju	80	85	82	342
*Kyung-Hi	Seoul	70	—	—	—
*Chosun	Kwangju	80	—	—	—
*Choong-Nam National	Taejon	80	—	—	—
*Han-Yang	Seoul	80	—	—	—
Total 12		945	753	623	2,679

*established after the end of second world war (1945).

Table 4. Curriculum for the medical school

(1967—1968)

Subjects	Freshmen Hrs.	Cred.	Sophomore Hrs.	Cred.	Junior Hrs.	Cred.	Senior Hrs.	Cred.	Total Hrs.	Cred.
1. Gross Anatomy	334	10	—	—	—	—	—	—	334	10
Histology/Embryology	238	7.5	—	—	—	—	—	—	238	7.5
Neuroanatomy	80	2.5	—	—	—	—	—	—	80	2.5
2. Biochemistry	232	7	—	—	—	—	—	—	232	7
3. Physiology	240	8	—	—	—	—	—	—	240	8
Biophysics	16	1	—	—	—	—	—	—	192	1
4. Pharmacology	—	—	192	6	—	—	—	—	192	6
5. Pathology	—	—	296	9.5	—	—	—	—	296	9.5
Clinical Pathology	—	—	16	1	—	—	—	—	16	1
C.P.C.	—	—	—	—	33	1	33	1	66	2
6. Microbiology	—	—	204	6	—	—	—	—	204	6
7. Parasitology	—	—	102	4	—	—	—	—	102	4
8. Preventive Medicine	—	—	50	2	32	1	78	2	160	5
Medical Statistics	32	1	—	—	—	—	—	—	32	1
9. Medicine	—	—	32	1.5	262	7.5	312	8	606	17
Physical Diagnosis	—	—	85	3	—	—	—	—	85	3
Orientation to Clinics	—	—	—	—	24	1	—	—	24	1
10. Psychiatry	—	—	33	1.5	78	3	78	2	189	6.5
11. Surgery	—	—	32	1.5	98	3.5	156	4	286	9
12. Neuro-Surgery	—	—	—	—	33	1.5	78	2	111	3.5
13. Orthopedic Surgery	—	—	—	—	44	2	78	2	122	4
Physical Med. & Rehab	—	—	—	—	17	1	—	—	17	1
14. Obstetrics & Gynecology	—	—	16	1	66	2	156	4	238	7
15. Pediatrics	—	—	32	1.5	92	4	156	4	280	9.5
16. Ophthalmology	—	—	—	—	63	2	78	2	141	4
17. E.N.T.	—	—	—	—	61	1.5	78	2	139	3.5
18. Dermatology	—	—	—	—	32	1	78	2	110	3
19. Urology	—	—	—	—	32	1	38	1	71	2
20. Anesthesiology	—	—	—	—	16	1	39	1	55	2
21. Radiology	—	—	32	1.5	34	1	—	—	66	2.5
22. Dentistry	—	—	—	—	16	1	—	—	16	1
23. I.D.C.	—	—	—	—	132	4	132	4	264	8
24. Athletics	66	2	66	2	—	—	—	—	132	4
25. English Bible	17	0.5	—	—	—	—	—	—	17	0.5
Medical English	16	0.5	—	—	—	—	—	—	16	0.5
Medical Clinical Eng.	—	—	—		16	—	—	—	16	—
26. Legal Medicine	—	—	—	—	17	1	—	—	17	1
27. Elective Course	—	—	—	—	99	1	—	—	99	1
28. Country Clerkship	—	—	—	—	—	—	156	4	156	4
Total	1,271	40	1,188	42	1,297	42	1,725	45	5,481	169

handy in time of our acute need. Yonsei University Medical School, for instance, received financial aid mainly from the China Medical Board in New York and also from the United States 8th Army in Korea

and the United Board for Christian Higher Education in Asia. Assisted by these organizations, we were able to rebuild a modern Medical Center including a basic science medical building, as 500-bed hospital, a 100-bed chest clinic and service building. A numbr of American medical educators also joined our faculty and contributed a great deal to the medical education.

Seoul National University Medical School, on the other ahnd, received an aid from the University of Minnesota Medical School through the International Corporation Administration program. Many faculty members of the Seoul National University Medical School went to the Minnesota Campus under the program for advanced studies, and a number of staff in the University of Minnesota came to Korea to assist them. Dr. Gault, former Associate Dean of the University of Minnesota Medical School, stayed on at the Seoul National Medical School for two years and acted as an advisor for overall development. Seoul National Univeersity Medical School is presently building a 1,000 bed hospital which is to be completed in 1970.

The developments in the two medical schools, just mentioned, namely Yonsei and Seoul National Medical Schools, have been reflected, to varying degrees in the other medical colleges in the city and throughout the country. In addition, the China Medical Board in New York continues to support the Korean Medical Schools by offering research grants and by financing re-education of faculty members through the U.S. exchange program. Along with the improvement of our socioeconomic situation our medical education has rapidly progressed during the last decade and we have been able to modernize our medical education and improve the quality of individual physicians.

Although our undergraduate medical education has been improved substantially in recent years, our postgraduate training has lagged behind. There are three types of postagraduate training at present in Korea. One is specialty training in the form of the internship and residency which is similar to that in the United States. After completing five years of internship and residency, usually at University hospitals and a few other accredited hospitals, one becomes eligible for the specialty qualification examination given by our National Board. There are 17 specialty boards at present and the total number of specialists in various fields is 3,725, approximately one-third of the total number of physicians(5). The second type is a degree course which is patterned after the graduate Ph. D. degree programs in the United States. This consists of 4 to 5 years of course work and research. After two foreign language examinations and written and oral preliminary examinations, and upon approval of a theiss, one is granted the degree of Doctor of Medical Science. The third type of postgraduate training is the old fashioned Japanese style-degree course in the form of apprenticeship. This requires three or more years of experimental research. Upon approval of a thesis one is granted the degree of Doctor of Medical Science. It is, therfore, rather confusing to maination the latter two types of degree systems. The second type similar to the Ph. D. degree program in the United States has become gradually more favored. Because of the shortage of funds, facilities and experts in various fields, our postgraduate training suffers more than the undergraduate training. Therefore, many of our recent graduates, 20 to 30 per cent of them, go to the United States for their graduate training. At present, about 1,400 Korean medical graduates are either receiving training or staying permanently in the United States. I am certain that the majority of these will return to Korea as our socioeconomic situation improves and political stability is accomplished.

It is now obivous that our medical education in the last two decades has been fundamentally oriented toward improving its standards and producing techincally better physicians. The extent to which these objectives have been achieved has resulted from a cordial and close cooperation between Korea and America. We now find our medical gradates in recent years to be more knowledgeable and better prepared in clinical medicine than they used to be in the past. There has also been a marked increase in number of specialists in various fields of medicine. The specialists comprise one-third of all physicians as I men-

tioned earlier. As a result of the higher standards of medical education, individual medical care for patients has been remarkably improved. This in turn has brought modern medicine and the population closer, and psychological barriers against modern medicine among our population have progressively been on the wane.

Having mentioned all the achievements of South Korean medical education, I must now point out what our medical education has failed to accomplish. Since our adoption of the new system of medical education, the number of medical graduates who seek their career in basic science fields of medicine has progressively decreased. Under our old system of medical education, the basic science fields attracted many good students because teaching and research in those days carried remarkable prestige. Professors in basic science fields used to enjoy higher prestige than those in clinical fields. With social change taking place, values in life have also been changed. A lofty idealism and sense of mission no longer arouse young graduates. These words appear to belong to the past. Young graduates naturally see no prestige where there is no money in it. If this trend continues, we will have very few who will undertake the job of teaching in basic sciences, and it will, sooner or late, threaten our medical education. This situation, in my opinion, cannot be altered by curricular modification alone but requires some change in our attitude toward the basic medical sciences.

Our medical education has not adjusted itself to the needs of society. As you all are aware, my country's socioeconomic situation is far different from that in the United States, and only a small portion of our population can afford to pay for private medical service. Consequently, a large part of the population, particularly in rural areas, has no access to modern medical care.

As of April, 1967, the number of physicians, herb doctors, dentists, pharmacists and nurses are shown in figure 2. The total number of medical doctors is 11,456. The ratio of medical doctors to the population is 1 to 2,500 for the entire country. This figure, however, does not give the exact distribution of physicians because the majority of physicians are

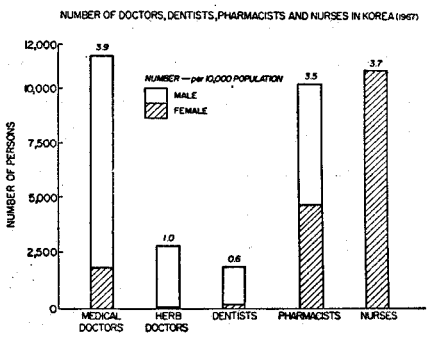

Fig. 2. Number of doctors, dentists, pharmacists and nurses in Korea (1967)

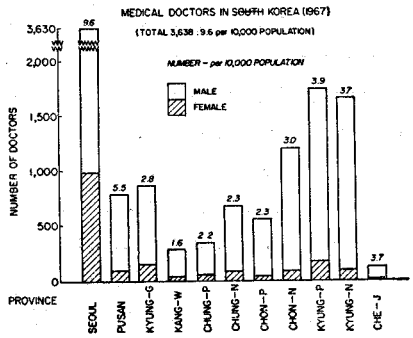

Fig. 3. Medical doctors in Korea (1967)

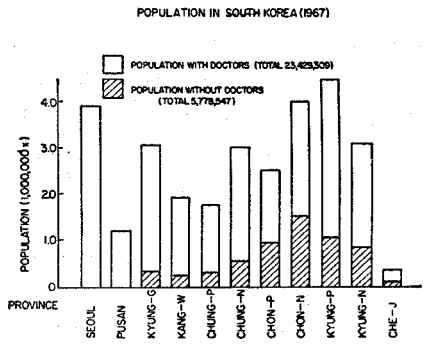

Fig. 4. Population in Korea (1967)

concentrated in the urban areas. Figure 3 shows the geographical distribution of physicians in my country. There is one physician for every 1,000 people in Seoul, whereas in the rural areas, the ratio is 1 to 10,000. As shown in figure 4, approximatly 40 per cent of rural districts, 5 to 6 million, population wise, has no access to modern medical care. It is, therfore, apparent that what our society needs at this time are sufficient numbers of physicians and general practi-

tioners in rural areas. Despite the demands of our society for general practitioners, the majority of new medical graduates go into a specialty of one type or another and the shortage of general practitioners is becoming more and more acute. General practice at present is mainly undertaken by older physicians. Unfortunately, the important mission of medical education to respond to the real needs of the society has thus been neglected, while all our effort has been made to promote the standard of medical education. It appears that our medical education has outran our socioeconomic development, and it has failed to develop personnel who can provide care for the entire population. Since we cannot expect our socioe conomic development to catch up with our medical education, we must find some way to be able to adjust our medical education according to the social needs. With an increasing demand by our society for many more doctors, four now medical schools have been built in the last several years. Unless these schools are properly funded and staffed, the numerical increase of medical schools may result in lowering scientific standards. We must now, therefore, find some way to increase the number of physicians as well as to keep the high standard of education under our socioeconomic situation. Realizing this mission before us, our medical educators must prepare to change the entire attitude twoward medical education which should be based on the needs of our society.

Our Government has been increasingly assuming its responsibility to provide health care for the underprivileged, particularly in rural areas. In recent years, 189 rural health centers have been created and distributed widely, as the first step of promoting health care of the population. Each center has one physician, one health administrator, one sanitarian, and two nurses. This gives one center in each county having 150,000 population. For the next step it is planned to establish 7 or 8 subcenters under each of of the health centers totaling 1,400 subcenters. However, our financial resources are far from reaching this goal at this time. Despite many difficulties a remarkable improvement in the health of Korean people has been achieved in the last two decades. The infant mortality rate has declined from 8 to 5 per cent, the overall death rate has dropped from 13 to 9 per 1,000 population, the life expectancy has increased from 50 to 61 years. The control of communicable diseases has been also achieved as shown in table 5. Cholera, small pox, epidemic typhus, relapsing fever, scarlet faver and epidemic meningitis have been eradicated. Dysentery, paratyphoid faver, poliomyelitis, and measles have also been practically eliminated. On the other hand, typhoid faver, diptheria and Japanese B encephalities are still a problem every year in our country. As to chronic communicable diseases, tuberculosis and leprosy are the major national medical problems. The total number of

Table 5. Reported cases of communicable diseases in Korea (1967)

Group I		Group II		Group III		
Diseases	Number	Diseases	Number	Diseases	Number	Z per% Population
Cholera	—	Whooping Cough	1,327	T.B.	1,250,000	4.0
Dysentery	139	Poliomyelitis	198	Leprosy	36,000	0.12
Typhoid Fever	4,230	Measles	982			
Paratyphoid Fever	33	Mumpus	1,297			
Small Pox	—	Malaria	1,443			
Epidemic Typhus	—	Rabies	—			
Relapsing Fever	—					
Scarlet Fever	—					
Diphtheria	1,070					
Epidemic Meningitis	—					
Japanese B. Encephilitis	2,673					

patients with tuberculosis is now estimated at about one and a quarter million which is approximately 4 per cent of the total population. We have 130,000 new patients annually, about 50 patients per 10,000 population. The mortality rate from tuberculosis has, however, declined, from 89 in 1952 to 49 per 100,000 in 1967. We have 36,000 patients with leprosy, approximately 0.21 per cent of the population. We have nine leprosy santaoriums with a capacity of 10,000 beds which are not enough to take care of all of these patients(1). A variety of parasitic diseases is still widespread, largely because of poor control of drinking water supplies and sanitation. With improvement of socioeconomic standards, the rates of these diseases has also been declining.

Another significant problem in our country is the uncontrolled growth of population which affects all aspects of our life. We have set up ambitious programs for family planning which have been undertaken by the Government and been aided by international agencies. During the last few years, the family planning programs have been successful and more than one-quarter of women of childbearing age have been cooperative in the program.

Finally, I would like to conclude by saying that our medical education has rapidly improved in recent years but it's standards have not yet reached those in the United States. We must, therfore, continue to strive for further achievement. At the same time we must plan to change our attitude toward medical education which should be adjusted to our own socioeconomic condition. Before undertaking this mission, we realize that undesirable traditions die hard, money is difficult to come by and serious effort brings little reward in my country. However, we have not yet lost our courage and are determined to undertake the mission impossible.

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