CHAPTER II

THE DEVELOPMENT OF MEDICAL EDUCATION AND RESEARCH
1947 - 1990
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AND RESEARCH 1947 - 1990

Once the great Luminary Dr. A. Lakshmanaswamy Mudaliar observed ‘India presents one of the most inviting centres for Medical Research. In fact in no commodity are we self-sufficient and even in a position to export lavishly to other countries than in the commodity of preventable disease’.1 The study of Medicine is a continuous process in the life of a physician and therefore the so called ‘Postgraduate study’ is only another milestone in the whole process of learning. However, the term ‘postgraduate student’ conventionally denotes, that part of a physician’s career where he equips himself with his speciality and makes life long friendship with it.2

Medical Education in India was regulated by the Indian Medical Council Act of 1956 as amended in 1964. Postgraduate Medical Education is regulated by the Postgraduate Committee of the Medical Council of India. Although the scope for research worthy of the name was practically non-existent in the nineteenth century, there was no regular organization to promote research nor did the Government

1 Gupta, S.P., Modern Indian and Progress in Science and Technology, New Delhi: P-89.

2 Chandy, J., ‘The Postgraduate Student’. Postgraduate Medical Education in India, (ed.), Viswanathan, R., and paintal, A.S., proceedings of the Fifth Annual Conference of the Indian Association for the Advancement of Medical Education held under the Auspices of the University of Delhi, New Delhi: 1965, P-18.
provide funds for creating even the basic infrastructure for research. Only individual Medical Officers on their own initiative and interest made researches and added significantly to the existing knowledge. Therefore research activity even in a small way, must find a place in the working of a teaching hospital, with the possible benefit of exposing young trainees to the methodology of research and enquiry. Training in Medical Education and Research cannot remain stagnant and static. It has to have a forward progress to keep pace from time to time with the latest advances in Medical Science. Postgraduate Medical Education comprehends (a) Medical Education of the graduate after full registration (b) Acquiring qualification either for a diploma or a degree enabling the practitioner for specialization (c) Continuing education either for a General Practitioner or a Specialist. The aims of postgraduate Medical education are to train Generalists and Specialists, to render a high standard of Medical care, to produce competent teachers for the rapidly increasing Medical Institutes and Research workers to do fundamental and applied research, and finally to provide continuing education.³

THE ADMINISTRATIVE SETUP OF MEDICAL EDUCATION

Since 1835, with the establishment of Madras Medical College, the world of Medicine and Medical education has grown enormously. There has been a mushroom growth of innumerable Medical, Para-Medical and Surgical Institutions, besides

³ Rao K.N., 'Organizational Pattern of the Postgraduate Medical Education', *Postgraduate Medical Education in India*, loc.cit., P-61.
Research Institutes for specialized research in every branch of Medicine along with Clinical and Non-clinical Institutes both Private and Government owned, which offers an ocean of degrees and diplomas at various levels for the Medical Man.

In order to provide an efficient administration a systematic set up management has been adopted.

The Institutional Setup of Medical Education in Tamilnadu

The administration of Medical Education was first placed under the Purview of the Director, the Head of the Directorate of State Health Services. In order to meet the requisites and demands of the concerned, a Manpower Committee was set up and on the basis of its report the budget allocation is made on an annual basis to Paraprofessional and Medical Institutions in the state.

The Central Government is the Apex Body in the administration of Medical Education in the country. Under its jurisdiction and control, the Directorate of State Health Service exercises the financial and management control over the Medical Institutions.

Role of Medical College Hospital in Postgraduate Medical Education

The role of a Medical College Hospital in postgraduate studies in the major subjects such as Medicine, Surgery, Obstetrics and other specialities, is undeniable.
While holding appointments of House Surgeon or Resident Medical Officer or House Physician, the postgraduate student examines the patients attending the hospital first as out-patients. He arrives at a diagnosis after clinical examination as well as by use of laboratory, X-ray investigations and chalks out a plan of treatment which is supervised by his chief. With regard to patients requiring hospitalization, he has to record their detailed histories. He is also concerned with the planning of treatment under the guidance of his seniors and is also responsible for execution of the regime planned. In Wards, he discusses with the seniors various aspects of diagnosis and progress of the patients.

He attends clinical and teaching sessions and on occasions is asked to teach the undergraduate students on the Ward service. He has the further advantage of actively organizing and participating in departmental seminars, clinical conferences and conferences on mortality. He also attends formal lectures arranged by the educational institutions or the University and undertakes research and investigative work under the direct supervision of his chief. All these activities give the Resident Medical Staff an excellent opportunity to obtain speciality training under expert supervision and guidance. In due course, he studies for his speciality examination and after passing becomes a specialist. The teaching hospital thus plays a very vital role in postgraduate education in all Medical disciplines.

4 Joglekar, S.V., 'Role of Medical College Hospital in the Postgraduate Medical Education', Postgraduate Medical Education in India, loc.cit., PP.29-30.
The introduction of a research bias in postgraduate education is likely to play an important part in all fields of Medical Education including teaching, research, general and specialist practice. It would help to emphasize, that Medicine is a lifelong study.

Many National and International organizations have contributed significantly for the growth and promotion of higher Medical Education at the postgraduate and research levels during the initial stages in India. Though Medical Research has its beginnings even in the later part of the nineteenth century and the early twentieth century, it took a definite shape only after Independence due to the enormous incentives and encouragement rendered by the Union Government of India. Many Medical Councils and Committees were formed, Conferences were held to study the prospects of higher education in Medicine and various measures were suggested for its improvement for the present and future.

In Pursuance of the recommendations of the Bhore Committee in 1946, a number of conferences and committees were organized to promote Medical Education and Research in every possible way.

On 1st January 1949, under the auspices of the Inter University Board and the Government of India, a Conference of representatives of the faculties of Medicine of Indian Universities, the Vice Chancellors of the Universities and certain nominees of the Government of India was held at the Madras Medical College and it passed an important resolution to constitute an All-India Council of Postgraduate Medical
Education, which shall be responsible for laying down standards for training of all those who wish to undergo any postgraduate training in the fields of Medicine, Surgery, Obstetrics, Gynecology and in the specialities pertaining thereto.\(^5\)

No time was lost after this in implementing the important resolutions arrived at the conference and the recommendations made by the Bhide Committee of 1946. To begin with the Indian Research Fund Association was redesignated as the Indian Council of Medical Research in the year 1949.\(^6\)

In the first instance it became a major concern of the I.C.M.R. to create opportunities for the training of research workers by a system of Fellowships and other grants.

Secondly, the I.C.M.R. indicated the areas of research which had to be sponsored on an emergency basis for finding out solutions in the fields of Medicine and Public Health.

Thirdly, in order to maintain the tempo of research in these fields, the Council had to examine the question of creating new institutes for the promotion of research in specific fields.

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Fourthly, the Council made deliberate attempt to strengthen the facilities that were already available for research in certain institutions in the country which were particularly suited for tackling a certain regional problem.

Fifthly the Council gave high priority for creating conditions by which young and promising workers could be attracted to a career in research and by which they could be induced to remain in research for a considerable period of time.

And lastly, the Council took great pains to see that in the overall plan of Medical Research, promotion of fundamental research did not suffer.7

The I.C.M.R. is an important body which acts as a bridge between the Medical College and Research Institutes. Between 1950 and 1960 the main development in the field of research included many changes in the Central and Provincial research institutes which were carried out as far as possible to facilitate the development of research there. Certain I.C.M.R. funds were spent on research at the Medical colleges in 1955.8

7 Ibid.,
The Indian Association for the Advancement of Medical Education

It is one of the pioneering voluntary organizations comprising - Medical Professors and Educationists. The Association was the brain child of Dr. A.L. Mudaliar who mooted this idea at Hyderabad in 1960. This organization worked effectively for the progress of Medical Education propagating new ideals through seminars, conferences and many publications.

THE MUDALIAR COMMITTEE OF 1961

A Committee under the stewardship of the great Luminary Dr. A. Lakshmanasamy Mudaliar was constituted by the Government of India in 1961 to study, analyze and assess the existing conditions of health services and the state of Medical Education in the country and to suggest reforms for the further improvement and expansion of the graduate and postgraduate Medical Education in India.

The Mudaliar Committee surveyed the whole field of Medical Education and Research and stated, 'Looking at the whole background of research in the country, we are convinced that India can claim to have taken a leading part in Medical Research among the Asian countries and to have contributed substantially in certain definite fields. Thus, it could be stated that the research work that had been done in India has been outstanding in respect of certain of the communicable disease like Plague, Malaria, Cholera, Kala-azar, Leprosy and other Tropical diseases, although more work was still needed concerning some aspects of these diseases.'
It was however necessary to realize that as things were progressing in the world, the part that India would be expected to play in the field of research was very much greater than has been the case in earlier periods. Research, therefore should form a prominent part in the nation's activities in the field of Medicine. We feel that the time has come when great importance should be given to research and the manner in which facilities may be made available for carrying out research.⁹

Seeing that research work in Medical Colleges was still not being taken up in the manner in which it ought to be even after 15 years of Bhore Committee recommendations because of over burdening of the staff with teaching and patient care, the Mudaliar Committee recommended the setting up of a separate research unit in every Medical college.¹⁰ Such a unit was to have pathological bacteriological and biochemical sections and such other sections as may be necessary. It was also recommended that an Animal House be set up in each college for experimentation on animals.¹¹

The Mudaliar Committee stated the reasons for the backwardness of Medical Education in India in 1961 (1) Insufficient knowledge of English, pre-Medical Sciences and Humanities, on the part of student. (2) Lack of experienced teachers


⁰ Ibid, P - 389.

¹ Jaggi., Medical Education and Research, op.cit., P - 289.
and well qualified personnel owing to conditions of service not being attractive and
(3) Lack of sufficient number of whole-time teachers and overall insufficiency in the
number of teaching personnel. In general the teacher had too many students to teach
and too little assistance. The condition of teaching facilities in colleges was very
unsatisfactory. Able men in the profession were not available for teaching posts
because of the unattractive terms of service.\textsuperscript{12}

The method of recruitment of the teaching staff was far from uniform, besides
the method of selecting the students to the Medical colleges varied from college to
college. The hospitals attached to Medical colleges were designed primarily to satisfy
the public demand for Medical relief and not to serve the cause of Medical
Education. There were several Medical colleges without sufficient staff and adequate
accommodation and in many cases without proper equipments.

Regarding Postgraduate Medical Education

With regard to postgraduate Medical Education, the Mudaliar Committee
pointed out that it was not often realized that certain special qualities and
qualifications were necessary for one to become an efficient teacher. There was a
rush for postgraduate studies with doctors vying with each other to acquire a string
of degrees and diplomas for which, many of them were not suitable. Many Institutions

\textit{P-316.}
with inadequate facilities for advance training were given recognition by the Universities. With a view to remove the defects and to place the Indian Medical System on par with the West, self sufficiency and systematic modernization in all the fields of Medicine was necessary.

The Mudaliar Committee among other things, noted that every Medical college was not immediately fit to be a postgraduate centre for training in the several branches of Medicine. The recognition given to some of these institutions should depend upon their satisfying the conditions in regard to equipment and personnel. During the Third five year plan there should be atleast one well equipped postgraduate centre of training in each State where all the specialities would gradually develop. It recommended the starting of such regional postgraduate centres with assistance of the Government of India and the All India Institute of Medical Sciences, New Delhi.

The postgraduate training given should be of a comprehensive nature which must not include only the basic Medical Sciences but also some of the fundamental physical and biological sciences such as Nursing, Public Health, Social Medicine and other branches of Anatomy Bacteriology, Pharmacology, Physiology, Pathology, Biochemistry and Dentistry. So far as research was concerned, the importance of the

13 Jaggi, O.P., Medical Education and Research, op.cit., P - 171.

fundamental Medical sciences as well as the Physical and Biological sciences could not be overemphasized.\textsuperscript{15} There should be close coordination and cooperation between the University departments of Science and Medicine wherever possible.

The Third Medical Conference of the Deans and Principals of various Medical Colleges was held in 1967 to discuss the conditions of Medical Education prevailing at the time.

\textbf{SHRIVATSAV COMMITTEE ON MEDICAL EDUCATION AND SUPPORT MANPOWER 1964.}

It was mainly constituted to find out the ways and means to envisage a suitable curriculum for training a cadre of health assistants.

In 1970, a Medical Education Conference was held in New Delhi under the auspices of the Ministry of Health, Government of India and its recommendation were accepted.\textsuperscript{16} This was followed by another Medical and Health Conference in Delhi in 1979.

In the 1970s, efforts had been made to bring up the standard of undergraduate and postgraduate Medical Education. The tendency to open new colleges by the States was curbed and attention was directed towards consolidating what had already

\textsuperscript{15} Ibid.

\textsuperscript{16} \textit{Medical Education conference}, New Delhi: 1970, P - 34.
been achieved. In 1977, there were 106 Medical Colleges in India and 108 Institutions imparting postgraduate Medical Education.\textsuperscript{17}

THE SHANTILAL MEHTA COMMITTEE 1982

A 15 member expert Committee under Dr. Shantilal Mehta of the famous Jaslok Hospital Bombay was instituted in 1982, to study the state of affairs in Medical Education and it submitted its report in 1984 and it was accepted by the Ministry of Health, Government of India.

Thus, the Indian Medical Education especially the higher education and research has undergone innumerable changes in its various stages of evolution and has attained a status almost on par with that of the West. This was achieved through frequently adopting different ways and devising various methods to impart the Medical knowledge to the Postgraduate students. Today the imminent change has happened with tremendous development in the field of Medical Science.

After Independence, in pursuance of the recommendations of the various committees and conferences on higher Medical Education and research held from time to time, several new postgraduate training and research Institutes with adequate training facilities, knowhow, equipment and personnel were started in Tamil Nadu.

\textsuperscript{17} \textit{Pocket Book of Health Statistics of India}, P - 43.
Though the Medical Research activity had its beginnings even in the pre-Independence period, a concrete shape with a strong foundation was provided only after 1947. After this slowly and gradually the 'Edifice' of Medical Research was built on every branch of Medicine and almost in every Medical College in Tamil Nadu. Today Tamil Nadu is one of the pioneering centres of Medical Education and Research in the country.

SOME OF THE NEW MEDICAL COLLEGES OPENED AFTER 1947

In conforming with the Bhore Committee recommendations, Medical schools were converted into colleges, already existing ones were developed and many new colleges were started with the latest technological facility and scientific knowhow for the encouragement of Higher Medical Education in Tamil Nadu.

The Kilpauk Medical College

Though it was started in 1924, as a Government Indian Medical School, only in 1948 this Institution was converted into a college of Indian Medicine. A Government Degree 'G.C.I.M.' (Graduate of the College of Indigenous Medicine) was conferred on its graduates.¹⁸ Later the word 'Indigenous' was replaced by the

¹⁸ 'The Kilpauk Medical College': Directory of Medical Colleges in India. Central Bureau of Health Intelligence, Directorate of General of Health Services, Ministry of Health, Government of India, New Delhi: 1964, P-117.
word 'Integrated' to indicate that the graduates were trained both in indigenous and in modern systems of Medicine.\textsuperscript{19}

The Government of India decided to abolish the G.C.I.M. Course in June 1960, and hence the college of Integrated Medicine was converted into a Modern Medical College and renamed later as 'The Kilpauk Medical College' for imparting Allopathy Medical education leading to the M.B.B.S. Degree in the year 1960.\textsuperscript{20}

The Madurai Medical College

The Madurai Medical College had its inception as a Medical school in 1896 itself but soon became defunct. An attempt was made to reopen it in 1918, but that too lasted only till 1928. Again the college was opened in 1940, only to be closed shortly.

Atlast, the Government of Madras decided to start a Medical College in Madurai on the basis of the recommendations of the Special Committee for the expansion of Medical Education in the Madras Province, in the year 1945. Though there were no buildings to house the college, the Government sanctioned the opening

\textsuperscript{19} Ibid.

\textsuperscript{20} Ibid.
of the Madurai Medical College with effect from July 1946 and the Madras University sanctioned the admission of 50 students to this college from July 1946.\textsuperscript{21}

It was only after Independence that a final decision was taken and a concrete shape was given to the idea of building a Medical College at Madurai. A site of about 11 acres adjoining the old Taluk office was chosen for the location of the new college to come up. The construction of the permanent building started in 1952 - 53.\textsuperscript{22}

On 22nd July 1954, the first batch of 50 students were enrolled in the Madurai Medical College at Madurai.

Initially the capacity of the college to accommodate students was 100 every year. The college was recognized by the Medical Council of India in 1961 and by 1985 the strength rose to 175.\textsuperscript{23} The college made rapid strides in the promotion of Medical Education.

\textbf{The Thanjavur Medical College}

As a part of the Second Five year plan for providing better Medical facilities for people, the State Government of Madras established the Thanjavur Medical

\textsuperscript{21} 'G.O. Ms. No.2123', \textit{Health Department}, dated 16th July 1946.

\textsuperscript{22} The University of Madras, \textit{The History of Higher Education in Madras}, Volume II, 1857 - 1957, Madras and Bangalore: 1957, P - 240.

\textsuperscript{23} \textit{Hand Book of Medical Education}, New Delhi: 1985, P - 152.
College in 1960 with the initial capacity of 75 students. In 1961, new buildings were constructed and the classes started functioning with Physics, Chemistry, Physiology, Biochemistry, Anatomy, etc. In May 1962, Para-Medical departments of Pathology, Bacteriology, Forensic Medicine and Pharmacology and the Clinical Department of Medicine and Surgery started functioning. Today, the Thanjavur Medical college is a full fledged Medical college with undergraduate and postgraduate classes.

The college offers one of the largest number of postgraduate courses in Tamil Nadu along with the Madras Medical College especially in the field of Ophthalmology and the Rehabilitation of the blind.

To cap it all, it was selected as one of the four Medical colleges in the country to which the Government of India sanctioned the 'Mobile training cum-science centre' in 1971. It was one among the few institutions to which the World Health organization (WHO) sanctioned permission to projects such as 'Human Reproduction dynamics' etc. Today it stands as one of the leading Medical institutions in the country.


25 Directory of Medical Colleges, 1964, New Delhi:P-123.
The Chengleput Medical College

It was started in July 1965, when 50 students were admitted initially to the M.B.B.S. Course. The students settled into the newly built college in Chengleput after finishing their pre-Medical classes in New College, Madras. In 1970, Women students were admitted and later, the college was affiliated to the Madras University.

The Coimbatore Medical College

It was started in 1965, with the initial capacity of 50 students. First it was affiliated to the Madras University and later got recognition from the Medical Council of India. Hostel facilities are available to men and women students.

The Thirunelveli Medical College

It was situated in about 350 acres of land in Palayamkottai. It was started in 1965 by the state Government. Now the annual intake of students is more than 100 and the college provides hostel facilities for both the sexes.

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27 Tenth Edition of Hand Book of Medical Colleges, New Delhi: 1965, P - 152.

28 Ibid, P - 160.
Sri Ramachandra Medical College and Research Institute

It was established on 10th September 1985 by a Private trust. This S.R.M.C. has its own 176 acre multistoryed complex at Porur.

The first batch of students was admitted from the academic year 1985 - 86 to the various Medical courses. A 100 bed super speciality hospital is attached to the college which is highly sophisticated with latest equipments.

It is a Research Centre par excellence for conducting higher Medical Research in various specialities and which is one of the few of its kind in Tamil Nadu.

It is a private college established in the year 1985 and the strength of the students is more than 60.

The Salem Medical College

This Government college was started in 1985 with an intake capacity of 75 students for the M.B.B.S. course.

Apart from the above mentioned colleges, of late there is a mushroom growth of private Medical and Para-Medical colleges.
SOME OF THE COURSES OF STUDY IN TAMIL NADU

M.B.B.S. Course

Pre-requisites

A student desiring to take up M.B.B.S. and become a 'Doctor' should possess certain indelible qualities as requisites, both to undertake the studies and to make a mark in the profession. A doctor must have a great sense of responsibility coupled with an urge to serve and heal the sick and the poor. He should possess a very sharp memory, keen and minute observation, good judgement and amiable and sympathetic temperament. His success ultimately depends on his relationships with his patients and this requires not only proficiency, skill, and academic excellences in Medical science, but also a humanitarian approach, helpful and considerate attitude, genuine interest in the welfare of the patients, cheerful and friendly temperament, etc.²⁹

To be a good physician, one has to have a good physical health, manual and finger dexterity particularly in surgery, more than anything else, patience towards the patients even when called at odd hours, is the most important feature of a Medical student or a doctor, should possess.

²⁹ Careers in Medicines and Allied fields, Careers Information series II, Careers Study Centre (Central Institute for research and training in employment service) D.C.E.T. Ministry of Labour & Rehabilitation, Government of India, New Delhi: 1971.
**Preparation**

To practise as a physician and Surgeon, one must have completed the prescribed course of theory, together with the practical training known as Internship by passing the University examination from a recognized Medical College after which, he should get a license from the State Medical Council of India.

**Admission Qualification**

The minimum requirement for admission is plus two Higher Secondary Certificate of Tamil Nadu State Board or any equivalent Examination Certificate issued by any other recognized State Government Institution. The Pre-Medical course should cover subjects like Physics, Chemistry, Botany and Zoology or B.Sc. Degree Course. Generally admission to the Medical courses are very demanding, which are filled on the basis of the Quota system. In this system, some percentage of seats are allotted for meritorious candidates selected on the basis of the mark obtained in the plus two examination, entrance examination and the interview. There are other reservations also such for children of Central Government Servants posted in the state, children of the State Government servants posted outside the state, for those who are from the Union territories etc. Reservations also exist for students belonging to Scheduled Castes, Scheduled Tribes, to the kith and kin of the Freedom fighters, Retired army personnel and to those candidates with National or International
acclaim, Sportsman, Widows, Orphans, besides such students like Physically Handicapped, Blind, etc.\textsuperscript{20}

Ministry of Health, Government of India and Government of Tamil Nadu provide facilities of admission to Medical colleges to students who belong to the following authorized categories.

1. Children of ex/deceased/serving personnel of the armed forces.
2. Children of Central Government employees posted in Indian Missions abroad.
3. Repatriates from Burma, Ceylon and other countries.
4. Cultural scholars and Foreign students under various schemes.
5. Candidates belonging to Union territories having no Medical colleges.
6. Candidates whose parents have suffered for the course of Tamil development.\textsuperscript{31}

By the academic year 1968-69, there were 1,15,000 Medical candidates and by the end of 1969, there were 94 Medical colleges in the country.\textsuperscript{22}

\textsuperscript{20} Ibid, P - 5.
\textsuperscript{31} Ibid, PP 5-6.
\textsuperscript{22} Ibid, P - 6.
Course of Study

The M.B.B.S. degree course extends over a period of Five and a half-years with four and a half years full time study and one year post-examination internship (practical clinical training) before the degree is awarded. Broadly, the first one and a half years are spent on pre-clinical subjects after which, the student has to pass the first examination in Anatomy including Embryology, physiology and Bio-chemistry. The second examination at the end of next 18 months, is in pharmacology, Pathology, Bacteriology and Forensic Medicine.

The next three years, after passing the pre-clinical subjects, are devoted to clinical work in hospital wards and departments, concurrently with training in the para-clinical subjects of pharmacology, pathology, etc. The final examination which is at the end of four and a half years study, covers ear, nose, throat, ophthalmology, midwifery, gynecology and social and preventive Medicine, some times even history of Medicine. Students have to appear in Oral, Written, Clinical and Practical tests, only those who obtain at least 50 percent marks in each part are deemed to have passed the examination.33

33 Ibid, P - 7.
**Higher Studies**

After a short period, as an Intern resident doctor in an hospital, if the student wants to continue his studies further, he either opts for M.D., (Doctor of Medicine) or M.S., Master of Surgery which are of two years duration. Generally, a doctor with the M.B.B.S. degree cannot qualify himself further within three years after obtaining the basic degree and without gaining some professional experience.

Laboratory facilities with modern sophisticated techniques are available in almost all the leading Medical Institutions of the country for doing research at Ph.D., and D.Sc., levels. Till the year 1969-70, 107 postgraduate departments were opened all over the country with an intake capacity of 4,602 students. Some of the subjects in which research is undertaken are, physiology, Bio-chemistry Pharmacology, Pathology and branches like, Venereal disease, Cancer, Malaria, Filaria, AIDS, Tuberculosis, Leprosy, Communicable diseases.

**Fellowships and Scholarships**

Several scholarships are offered by various Government and Non-Government agencies for undergraduation, postgraduation and research activities. The Indian Council of Medical Research plays a leading role in the field.

34 Ibid.
Registration

A qualified doctor registers himself in the register of the State Medical Council which functions under the Indian Medical Council. The latter regulates the system of Medical Education by ensuring the suitability and uniformity of the syllabus, by monitoring the various Medical institutions and hospitals, rendering expert advice to the State Governments, Universities and Colleges on matters relevant to Medical profession and training.

Non-University Courses

Several Non-University Diploma courses on Entomology, Communicable Diseases, Malariaology etc. are also available for students after the completion of M.B.B.S. which are offered by various Government and Non-Government Medical Institutes all over the State.

Self-Employment Opportunities

After the completion of M.B.B.S. and registering in the State Medical Council, one may set up Individual practice on a full time basis or as part time, with his own Medical establishment.
The number of doctors practising privately rose from 42,000 in 1956 to 43,000 in 1960 to 45,000 in 1963 and to 51,000 in 1968, when it constituted 50 percent of the total (102,000) of active doctors in the country.\textsuperscript{35}

Regarding the specialists, 21.2 percent of postgraduate diploma holders were indulging in private practice as in May 1956 and 18.2 percent of postgraduate in self employment.\textsuperscript{36} They have a very good scope in the fields of Cancer, Tuberculosis, Heart, Ear, Nose and Throat, Stomach, Skin, Venereal diseases, Genito-Urinary, Mental Health, Women or Children's diseases, Bones, etc. Doctors also specialize themselves as Physiotherapists, Occupational Therapists, Speech Therapists, Radiologists, Pathologists, Bacteriologists, Gynaecologists, Urologists, Nephrologists, Paediatricians, Obstetricians etc.

The success of private practice largely depends on the doctor's ability and the field he has chosen and all other factors. Most of the specialists opt to stay in urban areas than to serve the rural masses due to the impant of urbanization. As a result, there is a dearth in the quality and quantity of rural doctors and this trend should change for the good of every one.

\textsuperscript{5} Demand for Doctors for 4th and 5th plan periods, Institute of Applied Manpower Research, New Delhi: January, 1970.

\textsuperscript{5} Technical Manpower Bulletin of the Nation, Register of CSIR, New Delhi: November, 1965.
Employment Opportunities

An array of job opportunities are available for the doctors in the field of Medical Education, such like Family planning, Public health, Medical administration etc. Salaried jobs are available in hospitals, primary health centres, clinics, laboratories, defence services, local bodies, charitable missionaries dispensaries, industrial units besides colleges and training institutions.

In 1968 around 637 and in 1969, 65 of job opportunities were made available for the doctors by the State Government. The Central Government offered 25% in 1968 and 21% in 1969 followed by, private sector, local bodies and Quasi-Government establishment which offered 12% in 1968 and 14% in 1969.37

Union Government

The Central Government offered job opportunities in the following areas

1. Central Government Health Services (C.G.H.S.)
2. The Indian Council of Medical Research (I.C.M.R)
3. Army
4. Navy
5. Airforce
6. Family Planning Programmes.

State Government

The State Government offered job opportunities in the following areas:

1. Health Department
2. General Hospitals & Dispensaries
3. Primary Health Centres
4. Municipalities, Local Bodies and Industries.

DENTISTRY

The Madras Dental College

The Madras Medical college was the Pioneering Institution in establishing a ‘Chair’ for Dental Surgery. In 1888, a clinic was started at the General Hospital for the practical instruction of students in minor dental surgery.35 A separate department in the General Hospital for the treatment of dental patients was thus constituted.

The state of Dentistry was in a very bad condition till recently and only during the middle of the twentieth century the need for the Public Health and Hygiene was realized and due attention and adequate Dental care was provided to the Population.39

Jaggi, O.P., Medical Education and Research, op.cit., P - 271.

Three types of Dental personnel were trained accordingly to the recommendations of the Bhore Committee viz., Dental surgeon, Dental hygienist and Dental mechanic and the responsibility of training them was to be shared between Medical and Dental colleges.

The Madras Medical College was the only college in the state till recently to have provided Dental Education in which 125 students have passed out since 1957. In pursuance of the recommendations of the Inspection Commission appointed by the Dental Council of India, six paid Dental House Surgeons have been appointed in the Madras Medical College and Government General Hospital for clinical training. In 1965, the Madras Medical College also started Postgraduate courses in Periodontology and Oral surgery with the financial assistance rendered by the Ministry of Health, Government of India. The college has been successfully implementing the Dental Hygienists and Dental Mechanic courses.

The total number of dentists registered with the Dental Council of India in 1976 was 6, 759.40

It was only from 11th May 1979, a separate Dental College was started in Madras which functioned till then as a special Department of the Madras Medical College.41

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40 *Pocket Book of Health statistics of India*, 1977, P - 38.

Though several dental clinics were opened all over the country, the Madras Dental College and Hospital is considered to be one of the best in the country.

The Rajah Muthiah Dental College & Hospital

This new Dental College was established in 1980 at Annamalai Nagar, Chidambaram. This college offers Bachelor of Dental Surgery with five years duration and a two year Internship.

DENTISTRY COURSE OF STUDY

Pre-requisites for Admission

The students who have passed the Higher Secondary Certificate Examination or other equivalent examinations or science graduates are eligible to apply for the course. He/She should have taken science group with Physics, Chemistry, Biology and Zoology as subjects.

Non-University Courses

There are many Non-university courses in Dentistry like Dental Mechanics and Dental Hygiene. A Dental Mechanic makes or repairs dentures with dental appliances and his work is confined to mechanical laboratory. This course in open for
science matriculates. The subjects broadly include Applied physics, Dental materials and their manipulation and Dental metallurgy.

A Dental hygienist scales, cleans or polishes the teeth and instructs in Dental hygiene. This course is open to science matriculates and the syllabus includes theory and practicals in Elementary Anatomy, Physiology with Histology, Elementary Materia Medica, Pathology and Bacteriology, Dental hygiene, Chair side clinical techniques, Dental health education and so on. The Dentists Act of 1948 makes provisions for the registration of Dental mechanics and Dental hygienists by State Councils.

PHARMACOLOGY

The age old indigenous Indian systems of Ayurveda, Unani, and Siddha were replaced by Western Medical System. When the British surgeons of the East India Company came to India in the 17th century they brought with them 'Medicine chests' prescribed by Surgeon-General Woodall.

Besides the Medicines imported from Europe, the Indian ‘Bazaar Medicines’ were used in the Indian and British hospitals. These were kept under the charge of a store keeper and no regular courses existed for pharmacy till 1930.

Rules had been framed by some Local Governments for the systematic training ofcompounders in Medical schools or colleges or hospitals, but in many
Provinces there were no regulations at all. In some cases the licenses issued used the words 'Chemists and Compounders' but no statutory enactment controlled their qualification.\textsuperscript{42}

The Drugs Enquiry Report of 1931 reviewed the situation of the training of compounders as it existed then. It stated that Madras is the only Province that gives training commensurate with the real requirements. It recommended the formation of a General Council of Pharmacy and Provincial Pharmaceutical Councils.\textsuperscript{43}

The duties of the Provincial Councils were to maintain a register of pharmacists, to specify the educational institutions where candidates underwent training and the conditions under which apprenticeship should be served, besides, to conduct examinations for pharmacists, to exercise discipline over the registered pharmacists, to enter, remove, and restore names on the register and to act generally under the control and direction of the General Council of Pharmacy to which they must submit a report annually.

The duties of the General Council of Pharmacy were to supervise and coordinate the work of the Provincial Councils, to organize the profession of pharmacy and to lay down standards for training and examination, to specify the conditions and settle fees for registration, to prescribe rules of conduct and exercise general

\textsuperscript{42} Jaggi, O.P., \textit{Medical Education and Research}, op.cit., P - 154.

\textsuperscript{43} Ibid, PP. 154 - 155.
disciplinary control over registered pharmacists, and from time to time, make and devise by-laws and regulations for the better control of the profession of pharmacy.\textsuperscript{44}

Two grades of qualifications were recommended by the Drugs Enquiry Report (1) a diploma in pharmacy and (2) a degree of pharmaceutical chemistry. For the diploma course the minimum qualification was matriculation.

The duration of the degree course was four years after matriculation and two years after passing Intermediate examination. This course was to be combined with an apprenticeship to a manufacturing pharmacist.

The applicant before registering as a pharmacist, must have passed any one of the above mentioned examinations or should be the holder of a British or an American degree in pharmacy, or a diploma from the pharmaceutical Society of Great Britain or a degree in science at any of the Indian Universities with sufficient training in pharmaceutical chemistry, or be a registered Medical practitioner.\textsuperscript{45}

A qualified pharmacist was appointed for hospitals and dispensaries but the Provincial Councils were empowered to exempt any institution in exceptional cases.

The Pharmacy Act passed in 1948 was a landmark in the history of the profession. It enforced uniform training for pharmacists throughout the length and

\textsuperscript{44} Ibid, P - 155.

\textsuperscript{45} Ibid, P - 156.
breadth of the country. Later, Indian Pharmacy Council and other State Councils were constituted. In 1975, there were 1,00,103 registered pharmacists in the country.\footnote{Ibid, P - 157.}

**Pharmacy Education**

Selling of drugs is a very responsible job unlike other consumer articles like cloth, grocery etc. It is a very challenging job concerning the health and well being of the community. A person specializing in pharmacy either in graduation or postgraduation is called a pharmacist or a pharmaceutical chemist, who is eligible to manufacture, stock, sell, analyze or test drugs and Medicines.

**Degree Course**

Several Government and Private institutions offer a four years integrated degree course.
Postgraduation

It is of two years duration leading to a Master’s degree in pharmacy (M.Pharm) and Doctorate in Pharmacy requires a minimum of two years of postgraduate research.

Non-University Course

A diploma in pharmacy is of one or two year duration after schooling in science subjects.

After theoretical study, the candidates are to undergo practical training for a few months in a recognized hospital, or pharmacy or dispensary and after completion of the course successfully, one can register under the Pharmacy Act in the State Pharmacy Council.

Diploma, Degree and Postgraduate courses are available in Pharmacology. Pharmacy as a course of study for two years was first introduced in the Madras Medical College in 1939 and its duration was increased to three years in 1950 and later to four years. The annual admission was 12 in 1939 later increased to 35. To keep in pace with the growing demand, the Madurai Medical College also opened this course in 1963 with a strength of 35 students. But in 1971 both the Madras and the Madurai Medical Colleges reduced the strength from 35 to 25 as per the

recommendations of the Natarajan Committee.\textsuperscript{48} Today there is tremendous demand for Dentistry as both the Government and Private Institutions offer various advanced courses on the subject.

ORTHOPAEDICS

This Three years course was started at Madurai Medical College in 1968 with 6 candidates and it was the only college where candidates were exclusively admitted with a stipend of Rs.60 per month and the requisite qualification for admission was plus two with physics, Chemistry, Mathematics and Biology as subjects.\textsuperscript{49}

PHYSIOTHERAPY

It is a treatment using therapeutic agents like heat, electricity, radiation, water and body massage to cure weakness of muscles, joints of shoulder, knees and cures illness like polio, cerebral palsy which causes speech disturbances, muscular incoordination, muscle, joint and tone injuries, chest and heart diseases.\textsuperscript{50}

The course was of two years duration and the subjects included Orthopaedics, Neurology, Medicine, Surgery, Physiotherapy apart from clinical training in hospital

\textsuperscript{48} Tamil Nadu Administrative Report, 1971-72, P - 215.

\textsuperscript{49} Administrative Report of the Madras Presidency, 1968 - 69, P - 150.

\textsuperscript{50} Careers in Medicine and Allied fields, 1971, op.cit., P - 19.
wards. A Bachelor degree course was started in July 1982 with 20 students at the Government Institute of Rehabilitation and Artificial Limb Centre at Madras. Many private institutes offer various types of advanced courses on the subject today.

**OCCUPATIONAL THERAPY**

It is a sort of treatment entirely different from that of the others and is exclusively for the rehabilitation of the physically handicapped, spastics, and defective persons. The patients are treated through various activities such as manual and industrial arts, handicrafts, music and painting. Dancing also plays a very vital role as one of the occupational therapies for the defective persons.

Occupational Therapy is used for strengthening muscles, for joint actions, coordinated movements, increasing tolerance of work and for providing action for unaffected parts of human body.

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51 Ibid.


54 Ibid, P-20.
The diploma course was of two years duration and the subjects included Pathology, Anatomy, Physiology, Occupational therapy and practical training. These Occupational therapists are employed in rehabilitation centres for both physically and mentally handicapped. This course has become very popular among the people since modern sophisticated techniques are being adopted today to cure the patients.

SANITARY SCIENCE

The main work of the sanitary inspectors are to maintain and supervise public health in a standardized manner in domestic places, shops, factories, places of entertainment, markets and to prevent and keep a vigil on the outbreak of epidemics and infections.

Madrās Medical College, Madurai Medical College, Stanley Medical College, Gandhi Gram Rural Institute are some of the training institutes of Sanitary Science. They are mostly employed in urban and semi-urban areas by local bodies like Municipal Corporations, Cantonment Boards, Zila Parishads etc.

55 Ibid.
56 Ibid.
57 Ibid. P-37.
RADIOGRAPHERS

They are employed in Industrial establishments, Government and Private hospitals for diagnosis and curative treatment. Since radiotherapy and electro therapy has become a part of modern sophisticated Medicine for the treatment of cancer, ulcer, tumour, prospects of radiographers are very good because of increasing use of X-ray techniques in Medicine both for diagnosis and curative treatment of certain diseases.\(^{58}\)

OTHER PARA-MEDICAL COURSES

Short term courses for Compounders, Dispenser, Vaccinators, Medical Laboratory Technicians and Radiographers are conducted ranging from (six months to few years) in hospitals and other Government and Private institutions.\(^{59}\)

Courses are also available for Medical laboratory technicians at different institutions including polytechnics. Training involves both theory and practical.\(^{60}\)

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\(^{58}\) Ibid.

\(^{59}\) Ibid, P-21.

\(^{60}\) Ibid.
The evolution of Medical Education in Tamil Nadu since its inception in 1835 reached its climax finally in 1989 through a span of 150 years, with the establishment of an exclusive University for Medical Education. It was the first of its kind in the country.

The aim of the Medical University is to administer the entire Medical Education System, to affiliate both Government and Private, Medical and Para-Medical colleges, conduct examinations and last but not the least, to award degrees and diplomas to the students, besides patronizing Higher Medical Research.

Inauguration

On the 31st of August 1989 a 'New Era' for a glorious chapter in the history of Medical Education dawned in Tamil Nadu. It was only on this day that the long cherished dream and the much felt need of the people of this state was fulfilled.

An ambitious plan to set up 12 Research Institutes at a cost of Rs.400 crores in the field of Medicine during the Eighth plan period had been drawn by the Dr.M.G.R. Medical University. They include the Postgraduate Institute of Clinical Medicine and Research, Hospital complex, Research Institute of Tropical Medicine, Research Institute of Pharmaceutical sciences, Institute of Public Health Research, Curriculum Development centre, Regional Institute of Sophisticated Instrumentation
Laboratories, Postgraduate Institute of Nursing and Research Institute of Traditional systems of Medicine.

The work of drawing up of project reports has been entrusted to committees of experts in the respective fields. The University has constituted Expert Committees to frame guidelines and prescribe standards for starting of Medical and Para-Medical colleges in Tamil Nadu. This was done in order to check the mushrooming of private colleges in the field of Medical and Para-Medical sciences.

The Dr. M.G.R. University Adopts Kilpauk Medical College

On January 22, 1993 orders were passed permitting the adoption of the Kilpauk Medical College and Hospital for research activities. It was aimed at developing 'Centres of Excellences' in various specialities and to implement innovative methods. Now the University can utilize all the departments of the Medical college for research and other academic purposes. 61

Three Year P.G. Course in Dr. M.G.R. University

The duration of the postgraduate degree courses in Dr. M.G.R. Medical University has been increased from two years to three years with effect from the academic year 1993-94. The weightage of one year given to the service candidates undergoing Postgraduate degree courses and diploma courses would be withdrawn.

Earth Satellite Station

The Earth Satellite station of the M.G.R. University Library set up at a cost of Rs.15 lakhs was linked to the Information centre at New Delhi and through it to the Washington International Information centre, so that, upto date information in various fields of research reached the students.