

## PRESIDENTIAL ADDRESS

By

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*at the 20th ANNUAL SESSION of the*

### **ASSOCIATION OF PHYSICIANS OF INDIA**

*at Bangalore, January 1965*

[ As the following address whose main theme is Medical Research is of common interest, we reproduce it in full—Editor. ]

Your Excellency, Ladies, Friends and Colleagues,

I thank you for the honour and privilege of being chosen to preside over the annual session of the Association.

My predecessors had in their Presidential Addresses in the past laid a great amount of emphasis on improving under-graduate and post-graduate teaching in



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medical institutions as also on the medical facilities available in the country. We have yet to go a long way ahead to remedy this state of affairs in various States and in this country as a whole to fulfil our various objectives. A few had spoken on the problems and difficulties of medical men undertaking research. Today, I intend to focus your attention on this very problem and would like to review as it is today and venture to offer a few suggestions for tomorrow.

I have specially chosen this subject because this beautiful garden city of Bangalore is more noted for its research activities in various fields. Bangalore is also the adopted home of the internationally wellknown personality, Sir C. V. Raman. It is well-known that research on basic science subjects such as Chemistry, Biochemistry, Physics, Biology, Engineering and Statistics has a far reaching application to medicine.

You are aware that I am an honorary physician and I can only speak about research from my point of view as a physician. It may not be out of place to mention here that the honorary system is now looked down with disfavour in most of the States, but I cannot envisage any possibility of its abolition altogether

for at least another 20 years. I can also say that whatever number of research papers have been published in India on medical subjects, the bulk of them were done mainly by honorary physicians of the various hospitals.

We have inherited the mode of teaching and research from the members of the Indian Medical Service who were the pioneers in introducing and carrying on medical teaching and research in this country till the advent of Independence of India in 1947. One is well aware of the deficiencies of a colonial country. There was the shortage of doctors. Usually, an I. M. S. Officer was overburdened with an excessive amount of work more than he could possibly cope with. Considering the fact that the U. K. did not export best talents for the I. M. S., these members, though faced with many handicaps, did their best for the Indian Empire. It was soon realised by them that medical research in a tropical country was necessary and they separated out those who were willing to do research and appointed them in various research institutes like Nutritional Research Institute, Pasteur Institute and School of Tropical Medicine—to name only a few. A wellknown example is of Sir Leonard Rogers. Another more recent wellknown example is of Major General S. L. Bhatia who published a number of valuable papers from Physiology and Medicine Department in Grant Medical College and stimulated research.

#### NEED FOR RESEARCH

The primary function of our hospitals is to give medical relief. The aim of research in medicine is to relieve human sufferings. Hospitals attached to medical schools are also used for teaching purposes. If research in addition to teaching provides better medical relief, research should form an integral part of the function of the teachers in these hospitals. Teaching, Research and Medical Relief are the legs of a tripod upon which rests the reputation of a medical school. Americans used to go to Europe and England to finish up their training till the beginning of the last world war, Now the process has reversed. This is due to greater amount of research now being done in U. S. A. About 3% of the national income is spent by U. S. A. on research alone and more emphasis is placed on research. Unfortunately in India, I. C. M. R. research fund is the first one to suffer from an economy drive. If the need for research is realised by the authorities, increasing funds should be made available to medical schools through this organisation which in turn will enhance the reputation and prestige of our medical schools as well as the country.

Now a question may be asked that since intense research is going on in the western countries on the aetiology, nature and treatment of diseases, why duplicate the work here? To this my answer would be that conditions in India are not the same and many of the diseases that we come across here are different from those of western countries. A number of diseases which are common in our country, are rare in the West and therefore we are in a better position to study them. Environment, nutrition and climatic conditions alter the manifestations of many of

the diseases which are also prevalent in the West and hence they also need study in this country.

### CAN A PHYSICIAN DO RESEARCH?

Now let us consider how a physician working in a hospital can contribute or carry out research. Planned observation is the key to research and does not require costly instruments or gadgets. The fact that some problems can be tackled and solved by careful observation in the clinics does not make them less scientific than a piece of work done in a laboratory with costly apparatus. A physician daily uses this method of observations and acquires facts while a scientist uses similar observations and call them 'experiments'. There is no fundamental difference between observation and experiment. If the observer has witnessed an association between two series of events, he may wonder if this association is a causal one or has some special significance. The physician or a scientist may, therefore, deliberately alter one factor at a time and see whether this alteration affects the results. This, in fact, the practising physician is doing every day. Such a planned observation is nothing but science. If a patient is suffering from a disease and a physician alters his condition of life either by dieting him or putting him to bed or by administering a drug or by performing an operation, then the physician is performing an experiment and if he is scientific minded, he should record his observations and results before coming to the conclusion whether that change is for better or worse. Before coming to a conclusion that the change in the patient for better or worse is due to a specific treatment employed, he must also ascertain whether the same results can be repeated in a significant number of similar patients. This is a scientific observation. This has been recognised and has led to the creation of Chairs of experimental Medicine in some of the schools of London University. One such Professor of Experimental Medicine was studying the natural evolution of a disease in selected groups by following the patients for a period of five years, in addition to the usual hospital practice and medical teaching. Physicians of India can easily do such scientific observation with the help of statisticians.

### IS THERE A WEATHER FOR RESEARCH?

Let us ask the question whether there is a weather in India for research. The answer is 'yes' because in spite of many hindrances—

(1) There is an intense desire among young workers like post-graduates, registrars and assistant physicians and junior lecturers to carry out research. Their enthusiasm should be channelised by proper direction and guidance before frustration sets on them. Some incentive for research has been already created by making a thesis as a part of the post-graduate examination. We have come a long way from a thesis which used to be a mere copy of text books or a paper in a foreign medical journal, to a planned observation which in course of time finds its

way into a first class medical journal. The thesis or any piece of original work may be allotted more weightage than is done at present.

(2) Another factor which has helped to improve weather for research is the insistence of the Drugs Controller of India on clinical trials of drugs proposed to be imported in this country. This was done at the recommendation of the Therapeutic Trials Sub-Committee of the I. C. M. R. A controlled clinical trial of drugs is a planned observation and has stimulated research atmosphere in some of the medical colleges and has helped to train some of the medical and para-medical personnel.

#### WHAT MAY BE THE SUBJECTS FOR RESEARCH ?

As mentioned earlier, planned observation is the key to research and does not require costly instruments or gadgets. An example may be cited of Sir James Mackenzie's observations on heart disease. In a small way, we have started this in our Tetanus Ward in K. E. M. Hospital. We have observed, studied and analysed records of large series of cases and tried to determine the various signs and symptoms which adversely affect prognosis, the role of anti-tetanus serum in treatment and its optimum dose.

#### CLINICAL MATERIAL

There is no dearth of clinical material in India. The effect of malnutrition on the health of the nation and diseases is a vast problem.

Let us take another example—Diabetes. Very few adequate surveys have been made. What factors predispose to this disease; which socio-economic group is mostly affected; is it common among poorer class, what complications of untreated diabetes are seen in India; which of them are more prevalent?

Let us take coronary heart disease. 25 years ago, this was considered a rare disease in India. Was it a fact that we were not able to diagnose it or there is an actual increase of the incidence of the disease in recent years? Which socio-economic group is involved more; what are the predisposing cases; how far diet, heredity, diabetes or obesity play a part in the aetiology of the disease?

Let us take the skin diseases. What are the most common types seen; the aetiological factors concerned, seasonal variations, overcrowding and close contacts responsible for such diseases? The pattern of skin diseases in tropics is different from what is found in text books.

I have limited my examples to a few diseases where lot of work is necessary and costly gadgets or instruments are not necessary. The results of our study may differ from accepted views and may not fit the pattern set out in text books and I would advise you to report your findings honestly and please do not cook up fictitious reports to make up a respectable number.

**Now let us consider what are the factors hindering research and how they can be overcome.**

(1) *Laboratory Equipment:* We cannot hope to have laboratory equipment available in the well-developed countries. Even if we have funds and necessary foreign exchange, we have not yet trained our personnel to use complicated instruments or repair them when they are out of order. It is rather sad that in some well-equipped institutions, very costly instruments are lying unused or are out of order. It would be to our interest to train our own local people to manufacture and repair the instruments from the available facilities and standardise such equipment. History of the Cambridge Instruments Manufacturing Company owes its genesis to such a necessity by doctors of Cambridge University.

(2) *Funds for Research:* Research not only needs laboratory equipment but also personnel and both have to be paid for. Funds have to be procured from one or the other sources. These can come from the Union Government through the Indian Council of Medical Research, Council of Scientific and Industrial Research or similar organisations run by State Governments, or from Private Endowments—to name a few, Rockefeller, Wellcome and Ford Foundations, Lady Tata Research Trust, Raptokos Brett Trust Fund or donations from individual donors, and pharmaceutical companies or from locally organised research societies. Though we are grateful to the donors the funds available for research are meagre compared to the needs of the country, and some active efforts towards self-help have to be done to procure more funds. Some of the methods which have been employed in the city of Bombay may be tried by other medical institutions.

In the K.E.M. Hospital, two methods have been successful and these are:

(i) *Formation of a Research Society:* Funds can be collected in the name of an autonomous body registered with the State Government as a charitable trust and housed in the hospital and managed by the staff. The funds collected at the time of Silver Jubilee Celebration of this Hospital were allocated to the Research Society and the interest on the funds of this Society which amounts to nearly Rs. 30,000 per year is distributed for research projects to the members of the staff of any teaching institution of the city. In addition, yearly donations amount to further Rs. 80,000/- which is a tidy sum for any medical college. The formation of such a Research Society can eliminate the red-tape, the delays which are inherent in all institutions of the Government or Municipality in receiving and appropriating the money for research either from an individual donor or from pharmaceutical companies. The formation of Research Society has eliminated the red-tape and nepotism. The donations from the pharmaceutical companies are also easier to get as they find that they can get a certificate of income-tax exemption as well as promote the research work in an institution and thus create goodwill. The research workers attached to the Government-managed institutions cannot receive the donations. Formation of and management of such a research society can be done by the members of the staff of such Government-managed teaching schools for funds to be raised locally by arranging Annual Day or Five Year Celebration and later utilised for research.

(ii) Another way of raising the money is the welltried method e. g. organising a charity show or fete on behalf of such a research society. These charity shows can be organised by the members of the institution for the benefit of the whole society or for the institution for the benefit of any particular Department. The beneficiaries would be the organisers of the show. The major responsibility for collection of funds is theirs. There is today no difficulty in collecting the money by this method as it is an open secret that quite a large number of people are prepared to give small donations from their accounted or unaccounted money for a charitable cause like clinical research which is always aiming at relief of the human sufferings through the medium of a local and well recognised institution. This method of raising the money can be utilised by the young research workers with the help of senior but influential members of the staff who are well known to the local community.

(iii) The third method which could be easily successful is starting of a Rupee (Chit) Fund like T. B. Seals. Collection of funds by donation of one rupee from a single person is far more important than a large single donation as larger number of persons get interest in your project or hospital. This consists in printing a booklet of ten one-rupee chits and the patients admitted in the In-Patients Department or Out-Patients Department where follow up is unessential part of the treatment, are given this book for selling these one rupee tickets amongst their friends and relations and collecting a small sum of one to ten rupees. This can be given to many patients and it is not difficult for them to collect Rs. 10/- between their two visits to the hospital. This method was adopted in the Out-Patient of the Diabetic Clinic and was successfully operated. The funds collected not only provided medicine to the poorer patients but also were utilised to pay salaries of record clerk, extra laboratory technician, etc.

3. *Personnel*: The next hindrance in carrying out research is the lack of personnel necessary for any worth while project. Today, the research is not a single man's shop business. It requires a team of workers. Research Institutes and I. M. S. officers used the personnel of subordinate medical services for assistance. These were full-time servants. The laboratory attendants supplied further help. The problems tackled were small. Today, research requires co-operation of various Departments of the Institute and team work is necessary. Such a team can be created and organised in full time departments where they exist. Even though we have many full-time professorial units, only a limited number has been active in the field of research as probably teaching occupies their major available time. To an honorary clinician, research personnel consists of his part-time Assistant Physician, a Junior or Senior Registrar appearing for his post-graduate examination and overburdened House Physician and have occasionally post-graduate students and a rotating intern and at some places, a pool officer of C. S. I. R. These people have duties of medical relief and if research problem is to be tackled by them, it requires additional incentive and will-power to do this work. These post-graduates and regis-

trars can be utilised for assistance in research. The Registrar who has passed his post-graduate examination would be a better assistance. The incentive offered would be a grant of scholarship.

In addition to this trained medical personnel, one must look to the other para-medical personnel who are necessary in these days of organised research work. If an institution has to promote research work in its premises, it should also take the trouble of training the para-medical personnel just as it carries out its primary work of teaching under-graduate and post-graduate medical students and nurses. Laboratory attendants and servants would be a better help if there is a preliminary course for their training.

Another type of para-medical help which could be derived is from intelligent clerical and stenographers' cadre, who can be trained initially by an experienced research worker. At this stage of development of our country, recording of a routine nature is an important part of the observation and collection of our data and filling it in the standardised pro-forma could be done either by medical personnel or by trained clerks or stenographers of the Department. In America, clerks in the Record Department who are non-medical personnel, return the case papers to the House Physician whenever the pro-forma has been found to be deficient by them before filling and in this country, this method could be easily adopted to make up the deficiencies of the medical personnel.

However, the analogy of the industry has to be kept in mind and the medical or para-medical personnel need constant supervision from the Head of the Research team to see that the work allotted to each one of them is being done conscientiously.

Research not only needs training but also requires planning. It is like establishing a new industry; it needs organisation; it needs import licences and has constant development and breakdown troubles. Due to these teething troubles, some of the clinical research workers will have to create a team.

Not only an intense desire to do research work is necessary, but one must have resourcefulness and develop a power of resolving obstructions. All this has to be done with a great amount of human relationship, a word which has become very important in industry and its relations with labour. Human relations are equally important in a medical institution, particularly in a research project where people of different temperaments, different vocations and varying ambitions have been joined together for relief of human sufferings and medical practice. Absence of realisation of good human relationship often hinders a good research project and dampens the enthusiasm of a young research worker.

In apportioning the credit for research, good human relations are required. Those in power want to put their names first even though they know that they have not suggested the problem, nor participated in the work of the problem and sometimes do not know the contents of the paper. Sycophants on the other hand,

approach those in position to put the names of those in power first, to cash the advantages later. This problem requires not only human relationship but also magnanimity.

### PUBLICATION OF RESEARCH PAPERS

All of us would like the publication of our work in a journal of repute, preferably a foreign one. In India we have a large number of journals with different aims and purposes and the city of Bombay, for example, boasts of as many as 25 medical journals. The Journal of A. P. I. has maintained its high reputation and this is entirely due to its present editor, who has behind him over 30 years of editorial experience, longest amongst all the living editors of medical periodicals of India. Most of us would like the scientific communication to be published abroad and are disappointed if the papers are returned by the editors of the journals like British Medical Journal or Lancet even though the authors consider their papers far superior—and rightly so—to some which appear in these journals. The Editors of the British Medical Journal and Lancet personally informed me when I met them recently that much they wanted to assist the scientific workers from our country, they could not do so because they did not know the bona-fides of these workers. They also made a pertinent point that being journals from England, they are naturally expected to accept an article from an English worker on a priority basis. It is time, therefore, that we raised the standard of our own medical periodicals and make them internationally famous by publishing our data in our own journals and I am sure most of the editors of the reputed journals would only be too willing to render such assistance as is necessary in helping to prepare a good paper out of the worthwhile data.

### FUTURE OF RESEARCH

In spite of innumerable difficulties, future of research in India is bright. Increasing amount of work is being done. Today's physician must prepare and train young workers. If there is honesty of purpose, laboratory equipment and money will be available. Let us work for better tomorrow.

A physician has got five functions :

- (1) devotion to teaching.
- (2) devotion to hospital practice,
- (3) devotion to private practice,
- (4) devotion to research, and
- (5) his own pleasures, pursuits and interests as a civilised human being.

An enlightened physician will apportion his time simultaneously to all these five facets of life and in doing so, he can combine a happy blend between the man, physician and a scientist.