

**Meet the Legend**

**Prof D. M. Vasudevan**

**Interviewer: Prof Subir Kumar Das**

Prof. D.M. Vasudevan renowned teacher and author of text books in Biochemistry, has completed 50 years of teaching and research. He has inspired several students, who are also now leading in different organizations across the globe. He has shared his thoughts with Prof Subir K Das.

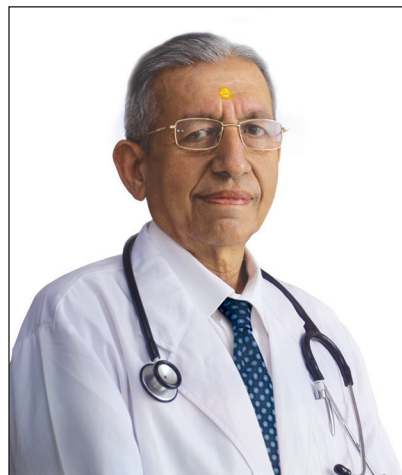
**SKD: Tell us about yourself**

**DMV:** I joined the medical education profession in 1968. Thus I have completed 50 years of teaching and research. I was born in 1942, completed my MBBS from Kerala in 1967, did my MD (Biochemistry) from All India Institute of Medical Sciences, New Delhi in 1974, did post-doctoral research for 3 years at the Cancer Institute, Lausanne, Switzerland, and got FRCPath from Royal College of Pathology, London in 1994.

I worked in various medical colleges at Calicut, Trivandrum, Kottayam, Trichur, Mangalore, Manipal, Gangtok (Sikkim) and Kochi. I was the Founder Dean of Sikkim Manipal Institute of Medical Sciences, Gangtok during 2000-2002 and then as the first Principal of Amrita School of Medicine, Kochi, during the period 2002 - 2009. After retirement, I am continuing as

the Head of PG Programmes and Research of Amrita School of Medicine, Kochi. I was also the Founder Director of the Cancer Research Laboratories at Regional Cancer Centre, Thiruvananthapuram (1978-1982) and Amala Cancer Research Centre, Thrissur (1982-1987).

I had the good fortune of teaching biochemistry for more than 3500 medical students, 500 MLT students, 200 MD and MSc students, and also guided more than 30 PhD students.



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**SKD: What inspired you to take up Biochemistry as career?**

**DMV:** During my student days, I decided to take up research as a career. As research techniques are mainly biochemical in nature, I decided to join the biochemistry department. During my MBBS studies, I came across many eminent teachers. I would like to make a special mention of one professor who inspired me. That was Dr Raghunandana Rao, then Professor of Biochemistry. His classes were hilarious. He would simplify the most difficult topics citing practical implications. He was one of my role models, and that was one of the reasons that I chose Biochemistry as my career. Even in his later years, he constantly updated his knowledge. He passed away in 2018, after living a fruitful life of 96 years.

**SKD: Please mention those, who have influenced your life?**

**DMV:** What I am today and what I have achieved in my life is the summation of everything that has been imparted to me by my teachers. I bow at their feet, with reverence, gratitude and love. When referring to those who have influenced me, the first and foremost names that come to my mind are those of my father and mother. They gave me this life, nurturing my early days, exposing me to this wide world, helping me to differentiate the good from the bad and inculcating values and principles in me.

One teacher I fondly remember is Dr. Mathew Philip, Professor of Surgery. He initiated me to my first publication, a case report of a rare disease during my house surgeon period in 1968. I joined as Tutor in Biochemistry at the Medical College, Calicut in February 1968. During those days, I was much influenced by my senior colleague, Dr. A G Alias. He taught me the basic principles of research methodology. Later he settled in St. Louis, Missouri, USA. Once a year, we make it a point to meet and renew our memories.

During the period 1969-1972, while doing MD Biochemistry at the All India Institute of Medical Sciences, New Delhi, I had the good fortune to be trained under the famous researcher, Padmabhushan Dr. G P Talwar, Professor of Biochemistry. Later, he established the Indian Institute of Immunology and also the Talwar Research Foundation. He is reverentially mentioned as the "Father of Immunology" in India. He had been a nominee for the Nobel Prize several times. A great man, both in the academic and personal sphere, with no pretensions, and a large heart. Under his mentorship I learnt Biochemistry. I thank him for his personal guideship.

Dr. Talwar delegated Professor Kamala Balakrishnan as my immediate supervisor, to take care of my research on a day to day basis. She was the Senior Medical Officer and a Colonel in the Indian Armed Forces, deputed to AIIMS, Delhi. She was the first person in India to take up tissue typing work for organ transplantation. A jovial person with a motherly attitude, I was most comfortable working with her. Under her guideship, I published five papers in international journals, some of them cited in textbooks. Later, she took charge as Director, HLA laboratory, Cincinnati, USA, became President of the American Society for Histocompatibility, and was considered an international authority on transplantation. She passed away on 7th August 2018. My Pranams to her vivid memories.

I was a postdoctoral research fellow at the Cancer Research Institute at Lausanne, Switzerland during the period 1972-1974. This Institution was later renamed as the Ludwig Institute of Cancer Research. I had the Eleanor Roosevelt International Fellowship from the International Union Against Cancer to cover my expenses. My mentor was Professor K T Brunner, an international authority on T cell functions.

He was a strong contender for the Nobel Prize for several times. It was under his guideship, that I published six papers in international journals with high impact factors. Today at 95, he's still going strong.

During my stay at Switzerland, I had the good fortune to interact with many giants in the field of science. Dr. Jan Stjernswärd, then an Assistant Professor at Karolinska Institute, Sweden, was on deputation to the Swiss Institute. We shared the same laboratory facilities and space and had a wonderful time interacting and exchanging ideas both in the fields of science and philosophy. Later he became the Head of Cancer Division, World Health Organisation during the period 1980 to 1986.

During 1982-1987, I was the Research Director at the Amala Cancer Research Centre, Thrissur. I had to start from scratch. There I had a great role model, the then Director of the Institution, Padmabhushan Fr. Gabriel. A well known educationist, he was a strict administrator, but helped others to pursue their dreams. I had a lot to study from him in administrative matters, which was useful later in my career. Even after leaving Amala Cancer Center, my relationship with Fr. Gabriel continued, and he encouraged me in all my later activities. He passed away at the ripe age of 103, in 2017. During my days as the Research Director at the Amala Cancer Centre, I was lucky to get the full support, encouragement and guidance of Dr. Krishnan Nair, the then Principal of Veterinary College, Mannuthy. An elder brotherly figure, we meet everytime he comes to India from USA, where he settled after his retirement.

Moreover, I am indebted to my students. They asked me questions, which compelled me to refer previous research works. It was a great learning experience. I am greatly honoured that many of them have contributed to my personal growth and the improvement of my text books. I also thank

my wife, Devi, who has patiently suffered because of my pursuit of academic activities.

**SKD: Tell us your important achievements**

**DMV:** My most glaring achievement may be the prestigious Dr. B C Roy Award, the highest recognition for medical practitioners in India. This is received in 1992 from the then President of India, Dr. Shankar Dayal Sharma.

Perhaps I will be remembered as the author of the Textbook of Biochemistry for Medical Students, The first edition was published in 1995. I am glad to state that the 9th edition of the textbook came out in June 2019. More than 4,00,000 copies have already been sold. This book has gained popularity not only in India but also neighbouring countries like Nepal, Pakistan, Bangladesh, Sri Lanka as well as countries of Africa and Europe. The textbook has a Spanish edition brought out in 2011 with wide circulation in Central and South America. A Slovak edition has also been published in 2014. Apart from the medical community, this book is popular among students who have opted for Biology and related subjects. This was followed by the Text book of Biochemistry for Dental Students, now in 3<sup>rd</sup> edition, Practical Textbook for MBBS Students, now in 3<sup>rd</sup> edition, and Concise Textbook of Biochemistry for paramedical students, now in 2<sup>nd</sup> edition.

I have also authored about 250 research papers in peer reviewed scientific journals, some of which are cited in various reviews and standard textbooks. The cumulative citations of my research publications are about 5000.

Other awards received are Eleanor Roosevelt International Senior Cancer Fellowship by the International Union against Cancer in 1973; Fellow of Indian Academy of Medical Specialities in 1982; Fellow of National Academy of Medical

Sciences in 1992; Best Doctor in the Medical Education Services by the Government of Kerala in 1995; the Best Teacher Award of University of Calicut in 1996; Fellow of Association of Clinical Biochemists of India in 2010; A J Thakur Award for Lifetime achievement and significant contribution to the field of clinical Biochemistry by the Association of Clinical Biochemists of India in 2014; and Awadhesh Saran Memorial Oration Award by the Association of Clinical Biochemists of India in 2016.

**SKD: What is your opinion about present day medical education?**

**DMV:** When we consider the growth of medical education in India, two prominent facts emerge in our minds. One is the growth of number of institutions and corresponding increase in the number of medical students. The second one is the phenomenal growth in the facilities for diagnosis and treatment of diseases.

During the last one decade, the self-financing colleges have entered into the picture, which caused the increase in number of medical educational institutions. As the seats are increased, students who got lower marks in the qualifying examination will be able to enter into the stream; even if they lack in commitment. Qualified senior teachers are always less in number than the demand, especially because new medical colleges are coming up at a rapid pace.

Along with this change, the medical profession became more and more Technology intensive. Fast and automatic blood analysers are revolutionizing the laboratory scenario. Vast arrays of sophisticated machines are available for helping the diagnosis and treating the patient. As the new inventions add to quality, they simultaneously escalate the costs. Thus medicine becomes technology intensive as well as capital intensive. The newer techniques certainly help to cure

diseases; but only to those who can afford the cost. Thus we are leading to a paradox. All of us need the sophistication, but we are not able to do full social justification. We should try that the highly sophisticated techniques should reach all strata of society. We should not forget the human values while entangled by the web of machines.

Such an escalation in the cost of equipment reflects in the medical education field also. But it is natural that all the managements (excluding the government) will try to recover the day-to-day expenditure. This has to be borne by the students. The student will have to bear extra boarding, lodging and textbook charges. All this together will cost about Rs. 5-10 lakhs per year for a student. Even considering the inflation, there is a steep increase in the expenditure from both the management and the student sides.

At present, we require skilful, altruistic, service-minded, compassionate and competent basic doctors with social commitment. It is well recognized that the present generations of medical students do not assimilate the basic ethical values. There could be many reasons for such a phenomenon. All over the world, the youth are attracted to quick money and power, rather than cultivating the human values. Commercialization has entered into every sphere of human activities; and medicine is not an exception. Consumerism has made deep inroads into the society, which generated the greediness. Thus service mentality and altruism have been eroded from the minds of the general public in general and from the student community in particular. The role models with moral values are few when you look around; and the students are identifying themselves with role models of lesser caliber. Unfortunately, the present curriculum of Medical Education does give only casual treatment to human values.



The medical colleges in India, in general, are giving only lip service to the medical research. The faculty members of the medical colleges in India are publishing very few research papers. Adequate funds are not allotted at the regional and national levels for drug research. Unfortunately, India as a nation has not taken seriously of health care in general, or medical research in particular. Certainly Govt of India had allotted large sums to research; but 90% of it was allocated to space research, atomic research and rocket research. In all these fields, India has made great strides; and now internationally reckoned as a very strong country. But, we have never invested enough money to medical research.

**SKD: What are the brighter sides of the present Medical Biochemistry curriculum?**

**DMV:** Biochemistry is the language of biology. The study of biochemistry is essential to understand basic functions of the body. It is worth noting that the Medical Council of India has considered Biochemistry as a major subject in the medical curriculum. The biochemistry curriculum is more or less balanced.

**SKD: What are the areas that you feel absent in the present Medical Biochemistry curriculum?**

**DMV:** Modern day medical practice is highly dependent on the laboratory analysis of body fluids, especially the blood. The disease manifestations are reflected in the composition of blood and other tissues. Hence the demarcation of abnormal from normal constituents of the body is a primary aim of the study of biochemistry. Although clinical chemistry is given some importance in the curriculum, the students generally think biochemistry means metabolic pathways, and give less consideration to the clinical applications. Moreover, students are not getting adequate feeling that the clinical

chemistry is contributing much to reach a correct diagnosis by the clinician.

Students should be familiarised with the clinical laboratory tests. They should also be familiar with advanced techniques.

Research methodology should be introduced into the curriculum. Those students, who are interested in research, should be included into the research team of the institution.

**SKD: How do you compare General Biochemistry and Medical Biochemistry today?**

**DMV:** General biochemistry is the starting point. Medical biochemistry is the application part of it. Medical students should be more familiar with the medical biochemistry.

**SKD: Do you believe that integration of both General Biochemistry and Medical Biochemistry would be beneficial? If yes, How do you see?**

**DMV:** Both should be integrated. I think we are trying to integrate both. We generally take the general biochemistry (metabolism) and later go to clinical aspects (function tests). However, teachers should tell the students the importance of the clinical chemistry.

**SKD: What is your message to the students, researchers and faculties?**

**DMV:** General tendency of the students is to study just for a pass, and forget it later on. On the other hand, student should know that clinical biochemistry is an important topic in the medical curriculum. A detailed study of biochemistry is of paramount importance for accurate clinical diagnosis and treatment. Commitment to the subject is expected from the students.

Faculty members should take up research as an important aspect of their career. One can go up the ladder only by publishing research papers.