

Dr. P. Namperumalsamy: Transitioning dreams, transcending barriers in accessible eye care

"To find your mission in life is to discover the intersection between your heart's deep gladness and the world's deep hunger." Frederick Buechner, *Wishful Thinking: A Theological ABC*

Born into a farmer's family of modest means in a village near Theni, west of Madurai, Dr. Namperumalsamy (affectionately known as Nam to his friends and admirers) was immensely inspired by his parents [Fig. 1] to take to the medical profession with an intent to serve rural communities. In his later life, he was influenced by Dr. G. Venkataswamy, the legendary founder of the Aravind Eye Care System (AECS), and joined him in his crusade against avoidable blindness [Fig. 2]. Little did he realize that he would soon transform the institute he had co-founded with his mentor into a frontier organization in ophthalmology that provided affordable and accessible eye care to millions in need. AECS now encompasses seven tertiary hospitals, several secondary care centers, and a little over hundred primary vision centers. The eye care organization also manufactures low-cost ophthalmic supplies, conducts cutting-edge research in ophthalmic disorders, and shares its sustainability practices with hundreds of partnering eye hospitals in India and the developing world with a mission to eliminate needless blindness. True to the quote by Frederick Buechner, Dr. Nam helped nurture an organization that would feed his deep desire to reach people and help them preserve the light in their lives. With initial training from Madurai Medical College [Fig. 3] and subsequent training in diseases of the retina and the vitreous in the USA, Dr. Nam became one of the pioneering visionaries who would place Indian ophthalmology on a firm footing, with efforts to treat blinding eye diseases beyond the realm of offering cataract surgeries alone.

Dr. Nam is one of the first ophthalmologists in the country to receive international training in the retina and vitreous diseases. Subsequently, he shared this new knowledge with Indian ophthalmologists by establishing a fellowship training program in Management of Vitreo- Retinal Diseases at the Aravind eye hospitals. It revolutionized the management of this important group of disorders in India. The evidence-based management of retinal detachment and diabetic retinopathy, widely accessible in India today, owes its beginning to many pioneers of about five decades ago. Dr. Nam, the most prominent amongst them, was mentored by such legendary vitreoretinal surgeons as Dr. Morton Goldberg [Fig. 4], Dr. Charles Schepens, and Dr. Gholam Peyman. This built a strong foundation to make him one of the most influential vitreoretinal practitioners and teachers in India.

Tertiary Eye Care and Focus on Diabetic Retinopathy

Dr. Nam has been responsible for broadening the scope and expertise of the organization in myriad ways. He played a key role in changing AECS's perspective of a community eye hospital with an exclusive focus on curing the cataract blind

to a world-class eye care provider focused on eliminating avoidable blindness due to other ophthalmic diseases such as



Figure 1: Shri Perumalsamy and Smt. Ponnammal, parents of Dr. Nam, who had a profound influence on him to take up medical practice as a means to serve the people



Figure 2: Dr. G. Venkataswamy, founder of Aravind Eye Care System, who mentored and inspired Dr. Nam and had the most significant influence on the latter's personal and professional life

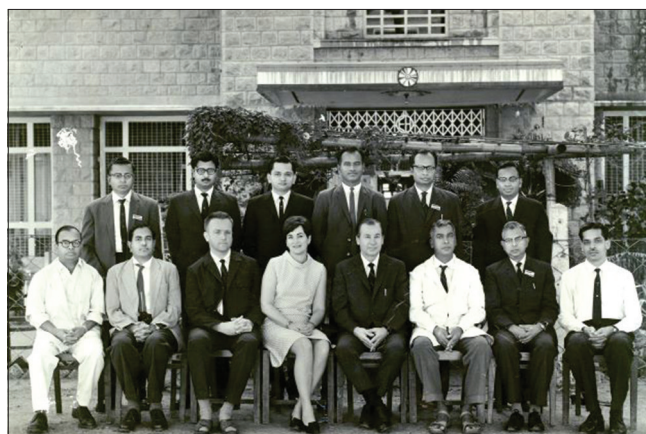


Figure 3: Dr. Nam, seated extreme right, had his foundational training in medicine and ophthalmology at Madurai Medical College



Figure 4: Dr. Morton F. Goldberg (extreme left, garlanded) who was the director of Wilmer Eye Institute, Johns Hopkins University, had visited Madurai Medical College. This visit paved the way for Dr. Nam's international training in the retina and vitreous in the USA and longstanding professional guidance by Dr. Goldberg

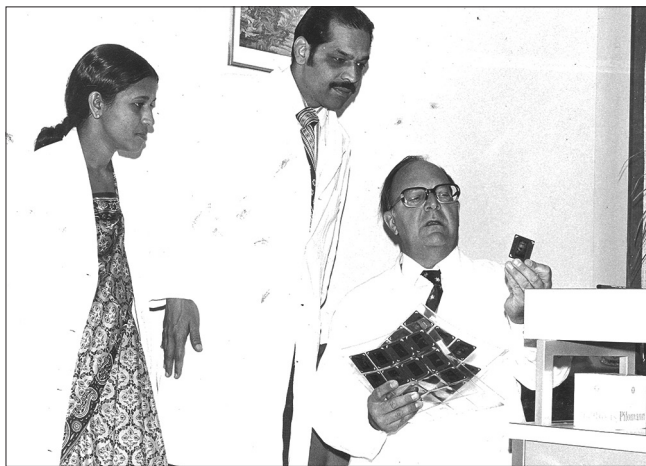


Figure 5: Dr. Nam and Dr. Natchiar in discussion with Dr. Leydecker, a German ophthalmologist who had significantly contributed to the understanding of glaucoma. Dr. Nam made enormous contributions to improve care processes of patients with glaucoma and eye cancers other than that of the retina and vitreous

diabetic retinopathy, glaucoma [Fig. 5], macular degeneration, retinopathy of prematurity, and eye cancers.

The foundation of care for people with diabetic retinopathy was seeded in him when he served as the first fellow in the historic multicentric clinical trial conducted by the National Eye Institute, USA: the Diabetic Retinopathy Study (DRS). He would often state that "combat against diabetic eye diseases is his lifetime crusade." With institutional support from the public (Technology Information Forecasting and Assessment Council [TIFAC], Government of India), international NGOs (Lions International), World Diabetes Federation, and

other public-private partnerships, Dr. Nam launched an ambitious Aravind Diabetic Retinopathy Project in 2000 to address various aspects of care for diabetic retinopathy.^[1,2] These included an inclusive diabetic eye screening model, defining the care pathway from community to tertiary level; developing retinal lasers, ophthalmoscopes, software for automatic grading and reading fundus images; and translating many bench-to-bedside and bench-to-community research ideas.^[3] The software for grading diabetic retinopathy was one of the first attempts in India to evolve machine learning for automated diagnosis of diabetic retinopathy.^[4]

Similar to diabetic retinopathy, Dr. Nam was keen on ROP (retinopathy of prematurity) screening much before ROP screening was made mandatory by pediatricians and national health administrators. He pioneered Aravind Eye Hospital's approach to ROP screening using a teleophthalmology platform by a trained technician and a portable pediatric retinal camera (Retcam) to screen pre-term infants in neonatal intensive care units (NICUs) with remote diagnosis enabled by retinal specialists in tertiary hospitals and referring children who required intervention. Thousands of premature children continue to be screened by this approach across all Aravind Eye Hospitals in coordination with hospitals with NICU facilities, thereby preserving vision in many of these children.

Primary Eye Care

Dr. Nam has been responsible for innovating far-reaching healthcare access technologies such as telemedicine-based consultations almost two decades earlier to the recent global pandemic necessitating such remote consultations. By setting up the IT-enabled primary vision care centers in remote regions manned by trained vision technicians, access to essential eye care has been provided to more than 90% of those requiring

eye care needs.^[5] Influenced by both Dr. Venkataswamy and Dr. A. P. J. Abdul Kalam, who was the former President of India [Fig. 6], he leveraged primary vision centers to ensure that eye care was available at the doorstep of the common man with a deep knowledge that less than 7% of those in need of eye care ever utilized the community outreach camps. Thanks to his efforts, Aravind Eye Hospital now operates 105 vision care centers, ensuring a wide coverage in most rural districts of Tamil Nadu. In his native Theni district, none need to travel more than 10 km to access eye care.

Education and Training: Building the Ophthalmic Workforce

Dr. Nam, a Dr. B. C. Roy awardee, has been an excellent teacher and mentor to hundreds of ophthalmologists at Aravind Eye Hospital and its partnering hospitals. He has served as a clinical teacher and research guide for over two decades. He played a seminal role in evolving Aravind's residency and fellowship training programs, one of the country's most sought-after programs. An academician par excellence, he facilitated learning opportunities, inculcating surgical skills and organizing journal clubs and grand round discussions with leading universities like Harvard and Johns Hopkins through teleconferencing facilities much earlier than the contemporary webinars and virtual clinical discussions. He continues to be a role model to many ophthalmologists around the country in blending professionalism, evidence-based and patient-centric care, and ethical clinical practice. Building the requisite human resource capabilities and skills to take on the challenge of combating blindness has ever remained his priority [Fig. 7].

Focus on Ophthalmic Research

Dr. Nam was largely responsible for inculcating a culture of research and fostered the practice of peer-reviewed publications by ophthalmologists at Aravind Eye Hospital. He assiduously built international collaborative efforts with many institutions and universities of repute, particularly in the USA, including the National Eye Institute (NEI), focusing on building and augmenting Aravind's internal capabilities and talents [Fig. 8]. He established the Dr. G. Venkataswamy Eye Research Institute that fosters research in basic ophthalmic and applied clinical sciences. Aravind Eye Hospital's research faculty and clinician-scientists published close to 300 publications in 2021.

Dr. Nam has emerged from the shadows of his more illustrious mentor Dr. Venkataswamy (popularly known as Dr. V). It was never an easy task to succeed Dr. V. But standing on the standards laid down by his more illustrious predecessor, Dr. Nam made giant leaps in inclusive patient care, ophthalmic education, and translational research. While Dr. Venkataswamy focused on cost-effective quality care for cataract blindness, Dr. Nam extended similar affordable and accessible care to several other preventable eye diseases, including glaucoma, diabetic retinopathy, and retinopathy of prematurity. The focus of Aravind Eye Hospital on basic and clinical research in the understanding of infective keratitis, retinoblastoma, ocular stem cell biology, and genetics is largely due to his untiring efforts. His legacy is bound to have a far-reaching impact not only in preventing incurable blindness but also in placing translational ophthalmic research on a firm footing with a potential to probe pathophysiologic mechanisms



Figure 6: Dr. A. P. J. Abdul Kalam had significant impact on Dr. Nam's exploitation of IT-enabled services in primary eye care and screening of diabetic retinopathy



Figure 7: Dr. Nam believed in capacity building to ensure ophthalmology practice was future-ready to meet eye care needs. Many of the doctors trained by Dr. Nam and Dr. Natchiar continue to contribute to eliminating blindness in India and elsewhere



Figure 8: Dr. A. P. J. Abdul Kalam and Dr. Nam flanked by Dr. K Dharmalingam (extreme left) and Dr. V. Muthukaruppan (extreme right) who immensely contributed to the development of ophthalmic research initiatives at Aravind Eye Hospitals

and possible therapeutic targets for at least some of these blinding diseases. For his many path-breaking contributions to effecting accessible and affordable eye care for millions in India and elsewhere, he was decorated with the Padma

Award in 2007 by the Government of India, and the globally acclaimed TIME magazine had chosen him as one of the most influential leaders in the year 2010. Dr. Nam continues to lead and guide Aravind Eye Hospital and its executive team in the organization's governance currently as the president of the trust that manages the Aravind Eye Care System.

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