Health in Wartime North of Sri Lanka

Compiled & Edited by
N. Selvarajah
Kalpana Chandrasekar

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A Felicitation Volume in Honour of Dr.N. Sivarajah

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Ayothy Library Services - London
in co-ordination with
Kumaran Book House - Colombo - Chennai
2013

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Edition:
1st edition, 12th April, 2013

Published by:
Ayothy Library Services - London
(48, Hallwicks Road, Luton, Beds, LU2 9BH, United Kingdom)
in co-ordination with
Kumaran Book House - Colombo - Chennai
(39, 36th Lane, Colombo 06, Tel.: 112364550, 113097608, E-mail: kumbhlk@gmail.com
3, Meigai Vinayagar Street, Kumaran Colony, Vadapalani, Chennai 600 026 Tel.: 2362 2680)

Printed by:
Kumaran Press (Pvt) Ltd.,
(39, 36th Lane, Colombo 06, Tel.: 112364550, 113097608, E-mail: kumbhlk@gmail.com)

Cover Design:

ISBN: 978-955-659-384-6

Pages: xxxii + 157

Price: £ 15.00

Dr. Nadarajah Sivarajah

Contents

Introduction

Dr. Nadarajah Sivarajah has been a part of Jaffna's Health care services and Training, of undergraduate, post-graduate and para-medical staff, during the darkest periods in the History of Jaffna. He came to Jaffna during the early part of the conflict and remained in the North and continued to serve the population of the North right throughout the period.

He came into Jaffna as a "refugee" after being caught up in the racial riots in Anuradhapura in 1977 and remained in Jaffna ever since. In 1977 he was serving in the Ministry of Health as the Medical Officer of Health for Anuradhapura when he had to leave for safety.

After his displacement from Anuradhapura he had a short spell as Assistant Port Health Officer in Colombo and then came back to Jaffna as Medical officer of Health to Kayts. In 1981 he joined as a Lecturer in Community Medicine in the University of Jaffna.

While in the Jaffna University he built up the Department of Community Medicine with the able guidance of the Late professor C. Sivagnanasundram. Most of the time single-handed, he was involved in the training of undergraduate medical students, coordinated the training of Assistant Medical practitioners for 7 years, trained Nurses, Public Health Inspectors, Public Health Midwives, Physiotherapists, Medical laboratory Technologists, Traditional Birth attendants and Health Volunteers.

He was also involved in the post-graduate training of Community medicine. He remains as a member of the Board of study of the Post-Graduate Institute of Medicine in Colombo for over two decades.

He was born while his parents were living in a remote village in the southern part of Sri Lanka (Divulapitiya) and had his primary education in the Sinhala medium at the Minuwangoda Nalanda Vidyalaya, followed by Mary Immaculate Girls School at Tudella and De Mezenod College Kandana.

He had his Secondary education in Tamil and English at St Mary's College Negombo and Ananda College Colombo. He was displaced to Jaffna in May 1958 being caught up in the racial riots and studied at Jaffna Hindu College for a few months and entered the Colombo University in 1959, to follow the Medical course at the University of Ceylon.

Subsequently he obtained a WHO scholarship in 1965 and followed a course for Diploma in Tropical Public Health at the London School of Hygiene and Tropical Medicine (DTPH). In 1985 he obtained the Doctorate in Community Medicine (MD) at the University of Colombo. In the same year he was made a Consultant in Community Medicine by the Post-Graduate Institute of Medicine, Colombo.

He passed out as a doctor in 1965 and served as District Medical Officer at Ampara and Mawathagama (Kurunegala District), Medical Officer of Health at Vavuniya, Kegalle, Anuradhapura and Kayts and also as Assistant Port Health officer in Colombo.

He has served as a consultant to several National and International agencies such as the UNICEF, UNFPA, UNDP, World Bank, Asian Development Bank, UNICEF, DIFID,

WFP, CIDA, SCF UK, UNFPA, RRAN, Ministry of Rehabilitation etc in carrying out Public Health Activities.

He was the pioneer in the identification and documentation of the problem of landmines in the Jaffna peninsula following the mass exodus and subsequent return of the people of the Jaffna District in 1995/96. He was instrumental in getting the UN and the Sri Lankan state in getting involved in mine removal. He with the assistance of the UNICEF conducted several mine awareness programs in the North and even presented a paper in Cambodia.

In the height of the conflict a "corridor of peace" was established between the warring parties in order to carry on with Polio immunization on the National Immunization days without interruption. Dr. Sivarajah was instrumental in this and a letter of appreciation from the UN is found as an attachment in this volume.

He has been a keen researcher having been involved in several areas of Public Health where problems occur. His interests ranged from, Nutrition, landmines, Health resource management.

He has published several academic papers and also several books in Tamil for the lay public. He is a regular publisher in the daily papers for public education.

He developed a Health Education material production unit in the Department of Community Medicine for Community education. He was the editor of a quarterly Journal called "Suhamanchari" to educate the public and concentrating on school teachers, students and paramedical staff.

Academically he has had a distinguished career. He has presented several Memorial lectures and was President of several Academic institutions such as the Jaffna medical Association, Jaffna Science Association. He was the founder member of the Jaffna medical Association, Jaffna Science Association, Association for Health and Counseling and Association for Rehabilitation of the disabled.

He was also involved in several social activities. He is the founder member and President of the Association for Rehabilitation of the Disabled in Jaffna.

Dr. Nadarajah Sivarajah is presently the Consultant to the World Health Organization, Coordinating its activities in the North of Sri Lanka.

He was on the staff of the Faculty of Medicine from 1981 to 2003. During the period he had been Head of the Department of Community medicine at the University of Jaffna from 1981 to 1991 and again from 1993 to 2003. He has several publications to his credit and has presented several orations. He has been consultant to a number of organizations such as the Asian Development Bank, UNICEF, DIFID, WFP, CIDA, SCF UK, UNFPA, RRAN and Ministry of Rehabilitation

The selected publication in this volume gives the wide interest he has had in Health in this part of Sri Lanka especially during the war time Sri Lanka.

N. Selvarajah
Compiler

PART I - Appreciations

The perfect gentleman of gentle comportment, a family man of simple living

"It is with a great deal of pleasure that I send this brief note on the occasion of the birthday of my friend and colleague, Prof. Nadarajah Sivarajah, "Siva" to most of us in the medical profession and in the WHO. I have had the privilege knowing him and later working closely with him, in different capacities, for well over three decades. Having had what we might call a "public school education" in many parts of Sri Lanka, Siva is effortlessly trilingual and well versed in the different nuances of the culture of our country.

I got to know him closely as an academic and a public health specialist when he was the trusted 2- I -C to a respected teacher and later a close friend of mine, Prof. Sivagnanasunderam, whom I consider as one of the best public health academics Sri Lanka produced. The two "Sivas" formed a very powerful public health duo and developed a very strong Department of Public Health in the Jaffna Medical School, introducing a number of exciting and innovative programmes. Quite expectedly he succeeded Prof. Siva to the Chair and continued to maintain and build on the very high standards that had been set.

My closest professional association with him started at the beginning of the last decade when both us were helping the WHO in its national programmes, with Siva engaged mainly to spearhead the local team to support the government to rebuild the health services in the North and East. His deep knowledge and understanding of the issues and his stature among the health personnel and the community there opened all doors and has been central in ensuring the relevance and efficacy of this work. The land mark successes were the mental health rehabilitation programmes, the strengthening of the hospital infrastructure and the health personnel training programmes in the peninsula. He still leads the WHO Jaffna team and is the most sought after person on any kind of issue, not confined to health alone. Being the perfect gentleman of gentle comportment, a family man of simple living, he endears himself to anyone who comes into contact with him and his humanism always shines through in his manner and interactions

Wishing Siva a very happy birthday and many more years of healthy and productive life."

Dr. Palitha Abeykoon
Former Director
World Health Organization Regional Office
New Delhi, India.

His untiring services have started to yield fruits

I am happy to give this message to the Felicitation Volume for Dr.N. Sivarajah. I know Dr. Sivarajah since 1984 as a Lecturer at the Department of Community Medicine, when I joined the Faculty as a Lecturer (Probationary). We all know him for his systematic and methodical way of handling his activities. We all discuss his punctually and systematic way of life and wanted to follow him, but have never succeeded to reach his level.

Dr. Sivarajah has been handling and shouldering the burdens of the Department of Community Medicine along with Prof.C. Sivagnanasundaram and still continue to do the same to date. He never hesitated to help the Faculty of Medicine, University of Jaffna. His lectures have always been attractive and been welcomed by the students. Dr. Sivarajah even after his retirement has accepted the responsibility of the Department of Community Medicine and being a member of the Board of Community Medicine at the PGIM, he was able to bring in the Community Medicine Trainees to the Department and get their services to the Department. His untiring services have started to yield fruits; Faculty has started to get permanent staff to the Department.

I also have the chance to work with his two daughters and I could experience the way how he has trained his daughters to follow his footsteps.

At this juncture I wish Dr. Sivarajah to have a healthy and peaceful active life as usual, and help the region and the University. I pray to the God almighty for him and his family to continue to have the Happy and united family as it is. I also thank Dr. Sivarajah's family members for giving me a chance to share my thoughts of Dr. Sivarajah.

Prof. Ms. V. Arasaratnam
Senior Professor of Biochemistry,
Vice Chancellor, University of Jaffna

He was an unusual doctor, with diverse interests and eclectic skills and knowledge

I first met Dr. Sivarajah when I was doing a story on a community in Jaffna affected by leprosy. In the early 80s, Dr. Sivarajah led a team of doctors to treat a disease that had begun to spiral out of control. He was pivotal in bringing the community back from the brink and they still honour him at events.

I was impressed with his way of approaching life's challenges, and I knew he'd be perfect for my "I Am" project, about inspirational elders in Sri Lanka. His multimedia portrait can be accessed by readers here: http://iam.lk/the-community-doctor

Like many people living through the war years in Jaffna, Dr Sivarajah is a survivor. His key to survival has been to always remain neutral. Not an easy thing during a war which has seen different masters of Jaffna. He had challenged the might of the Tamil Tigers and come out winning. He reasoned with them, and made them see the futility of their actions, always thinking of the welfare of the villager, the patient or the student.

Always someone you can turn to for advice in Jaffna, he was an unusual doctor, with diverse interests and eclectic skills and knowledge.

I learned a lot from talking to this community doctor, someone who remained behind to help the people of Jaffna with their unique challenges. Indeed, these challenges are what continues to keep him on the peninsula.

Best wishes to Dr. Sivarajah on attaining 75 years of age.

Kannan Arunasalam
Journalist

Dr.N. Sivarajah - Legend in Public Health

Dr.N. Sivarajah has been known to me since 1997. I have been working closely with him as MOH Vavuniya, RDHS Vavuniya and RDHS Jaffna for the last 16 years. He is my Guru, Teacher, trusted friend, adviser and Guide. He extended his valuable advices and guidances in the fields of public health and health management. During the difficult periods his support was very vital and valuable for me to move forward. He regularly attends our monthly review meetings and extends his advices for important health issues.

He is a mobile university with vast knowledge and experience. He gained very valuable experiences by serving in difficult areas of Sri Lanka in difficult periods. He remains as one of the legend behind the several success stories of public health in Sri Lanka.

He is a very simple down to earth person. He is always polite with everybody, understandable, easy to approach, soft spoken and troubleshooter. He remains as a Guru for generations of Doctors from Jaffna Medical Faculty.

In difficult times I was fortunate to get his support. In August 2006, when the conflict situation was aggravated in Jaffna District with night curfews for several months, he was the person, who advised and supported us to start the night ambulance services. Later he helped us to organize the Emergency Ambulance Services in Jaffna, which completed four years successfully.

It is a great pleasure to see him actively involving in the health promotion activities even at the age of 75 years. Age is not a barrier for him to serve the people. I wish him good health to continue his support for the health system of this country. I am very proud to state that I lived and worked with Dr.N. Sivarajah, legend of public health in the history of health services in Sri Lanka.

Dr.A. Ketheswaran,
Regional Director of Health Services
Jaffna

25.02.2013

I would regard Dr. Sivarajah as one of my heroes in life, a true professional and a marvellous man

I first met Dr. Sivarajah in January, 2005 when I was asked by the World Health Organisation to go to Sri Lanka to help with the psychological and social consequences of the Indian Ocean tsunami.

Without doubt he had organised the best response in Sri Lanka. He was rightly extremely well respected by all sides and had stayed in Jaffna throughout his career, training future generations of medical students and advising on health issues across the broad spectrum of needs. The response to the tsunami and the health, social and psychological consequences throughout the Vanni was exemplary. Unlike the rest of the Country all NGO's and INGO's were vetted and did appropriate and good work.

I found him to be very personable, attentive, respectful, humble and highly skilled. He worked with the people affected, finding out their needs and wishes and listened attentively. Without doubt I would regard Dr. Sivarajah as one of my heroes in life, a true professional and a marvellous man. A wonderful example to the rest of us and I miss his wise guidance.

Dr. John Mahoney
World Health Organisation,
Sri Lanka 2005 to 2009

He is a senior and respected health professional in the North which facilitates the field presence and work of WHO in that region

I have known Dr. Sivarajah for the past four years as the WHO representative to Sri Lanka. Dr. Sivarajah is a national consultant based in Jaffna WHO field unit for about eight years.

He is a senior and respected health professional in the North which facilitates the field presence and work of WHO in that region. He has a pleasing personality and a wealth of experience in managing health programs under difficult and emergency situations.

Our good wishes are extended for this felicitation volume.

Dr. Firdosi Rustom Mehta,
WHO Representative for Sri Lanka
226 Baudhaloka Mawatha, Colombo 07

Today is a great day in Jaffna. We are able to see the Trinity of Jaffna's Public Health on stage

Dr. Nadarajah Sivarajah is a quiet force. His short, quiet, unassuming appearance of average build belies the person he is made of. He is a legend in Jaffna. So many things happened in Jaffna from the eighties, through nineties and then in the first decade of year 2K. War, Shooting, Bombing, official and unofficial arrests and punishments of different nature, population shift and Displacement scared the average population. Half the population of Jaffna, left the peninsula; some in fear, some in search of greener pastures and some disgusted with the social environment. Siva and few others did not leave. I should take this opportunity to mention few things Siva did but not known to others.

Not many know that it was Siva, Theivendran (then MOH Thellipalai), and I who suggested the paid "volunteers" scheme to assist Public Health Midwives in the field, in 1980s, through Save the Children Fund UK. This scheme later was accepted by the UNICEF and the Health Ministry for almost two decades and helped the rural people to have a semblance Public Health Care.

Later in the troubled nineties, when severe acute malnutrition became a community problem, it was Siva who came forward to organize a feeding centre where the mother and malnourished child stayed, and were given good nutritious food, treatment, Nutrition Education to the mother, and sometimes job opportunities through well wishers. This saved many undernourished children.

I think I will finish this short write up about Siva with a statement made by Mr. Balasingham, former Secretary, NorthEast PC, when he was the Jaffna Municipal Commissioner. Siva was seated with Prof Siva and another on the stage for a Health Promotion Function. Mr. Balasingham said, "Today is a great day in Jaffna. We are able to see the Trinity of Jaffna's Public Health on stage".

Siva is still active working for WHO, teaching in the University and involved in assisting the differently abled population. May the Almighty Bless him with Healthful Life and enable the community to be benefited through him

Dr.C.S. Nachinarkinian.
Maternal and Child Health Coordinator,
Terre des Homme,
Batticaloa. 24th Feb. 2013.

An Appreciation of his contributions to Health & Welfare in Sri Lanka Including the Jaffna District in its Darkest Days

I have known Dr. Sivarajah for more than four decades since our medical college days. Affectionately known as Siva or Nada, he was always a prince, a rajah in his commitment to individuals in need. Whether poor or affluent, he treated all his patients equally well. I recall the time he assumed duties as the Director (DMO) of the 100 bed District Hospital in Amparai – a growing boisterous rough and tumble town with sugar plantations and rice fields and a bursting economy—with elephants taking moonlight walks across his official bungalow and cobras crossing paths with doctors taking night calls.

He had just got married and brought his young bride from Jaffna to this rather politically sensitive and wild area that was becoming colonized with mostly Singhalese. While handing over duties to return to my Provincial Hospital base in Batticaloa, I expressed my concerns regarding the Singhala-Tamil conflicts in the area. But listening to the fluency of his Sinhalese and the compassion he showed patients irrespective of caste creed or race, I was confident he was safe. Four years later, when he was due for transfer, the local population despite all the racial conflicts appealed for him to stay longer. That is the healing power of health that Siva brought to Medical Care and Public Health.

In the darkest days in the Jaffna district, he initiated the torch of night ambulances to save many lives. Post war with WHO support Nada spearheaded the protection against Landmines in the Northern Province. In 2010 at the Asia Pacific Academic Conference(APACPH) on Global Health at the Bali meeting of University Presidents, Deans and Senior faculty from over 40 Asia Pacific Universities Dr. Sivarajah was inducted as a member representing Jaffna University Medical College. He still continues to serve on our leadership panels and APACPH projects on Elderly Care, Oral Cancer and Health as a Bridge for Peace. While thanking him, we wish him many more productive years in fostering Peace and Harmony in Sri Lanka and Globally.

Prof. Walter Patrick MD MPH PhD
Secretary General (APACPH)
Asia Pacific Academic Consortium for Public Health
Global Health Medical School University Hawaii, USA

Dr. Sivarajah helped me to settle down in the academic field and I still consider that period of my career as the best.

Many individuals will be contributing on many aspects of Dr. Sivarajah's colourful and successful career while I hope to devote on my experiences with him. I met Dr. Sivarajah for the first time in my life, only in March 1984, when I assumed duties in the Department of Community Medicine, University of Jaffna, though he was already well known in the field of Public Health, as a person who is pragmatic and practical in delivering health care to the community.

I revered and respected Prof. Sivagnanasundram so much, that there was a certain amount of respectful distancing from him, during the early years of my association, whilst it was easy to relate to Dr. Sivarajah in whom I saw an elder brother.

Dr. Sivarajah helped me to settle down in the academic field and I still consider that period of my career as the best. I could approach him for any help or clarification without the anxiety of being judged.

During the six years I was attached to the Department, I had never seen Dr. Sivarajah getting angry or stressed. He maintained equipoise in all situations. He was not dependant on anyone in his work related activities and coped with enormous responsibilities in teaching and in the service components of the Department.

During the troubled times in Jaffna, he not only actively involved in caring for the displaced, but also cared for the 'Department family '. I too was the beneficiary when he found relatively safe and comfortable accommodation to my elderly parents without subjecting them into life in the refugee camp.

I always remember his guidance and help in data collection in the field, for my post graduate degree. I am indeed very fortunate for having had the guidance of Prof. Sivagnanasundram and Dr. Sivarajah early in my career. I always treasure these memories with gratitude. I wish Dr. Sivarajah many more happy, healthy and productive years of service to the community which he never deserted even at the worst of times.

Dr.S. Sivayogan
University of Sri Jayawardenapura

Dr. N. Sivarajah: A modest man and a professional

In the path of each of our lives we come across so many. However, there are a few who have the qualities of positively influencing others' life, and I consider Dr. Sivarajah as one such personality.

Dr. Sivarajah has played a pivotal role in my life, initially as a youthful teacher with full of energy, and later as a mentor, a colleague and an elderly wise man who is always available for advising and sharing his experiences for any kind of consultation, personal or professional. Being a health professional, he never hesitates to contribute towards any activities or discussions pertaining to the wellbeing of people and communities; and as such he is everywhere contributing continuously and tirelessly. He has developed a passion for his country, especially working in its northern region. I could still remember that when I shared my excitement for having a promotion in my job during my overseas training, he immediately responded me mentioning that he had lived in more than a dozen countries and it was only Sri Lanka which was the best of all, and asked me to come back home early.

I am privileged by having the opportunity to associate with him closely, both during the hot sunny days and wet dark nights, for more than two decades. I still admire him for his simplicity, humbleness, humanness and his artistic sensibility.

May God bless him with more years of health, happiness and service.

Dr.S. Sivayokan
Consultant Psychiatrist
Jaffna Teaching Hospital

He is one of the few distinguished intellectuals and professionals who sacrificed their gains and comforts for the benefit of the community

Dr. N. Sivarajah is one of the few distinguished intellectuals and professionals who sacrificed their gains and comforts for the benefit of the community and sustained the physical and intellectual existence of the community during the most troublesome period of last three decades.

As a medical practitioner, Dr. Sivarajah is well qualified, competent and kind and always ready to serve the purpose without any publicity. I am very fortunate to be associated with Dr. Sivarajah, since the inception of the Jaffna Science Association in 1992, in organizing number of useful activities: School Science Exhibitions and competitions, Theme Seminars, Popular Talks, Annual Sessions, Publications of News Letters, etc.

Dr. Sivarajah has inspired all who associated with him as he had been truly exceptional in fulfilling the tasks with charm and clarity. I have the privilege of associating with Dr. Sivarajah's twin daughters: Dr. (Mrs.) Meena Senthilnanthanan and Mrs. Kalpana Chandrasekar for more than last twenty years, firstly as undergraduates Chemistry Honours students and then as colleagues at the University of Jaffna. Both of them have exemplary manners, follow their father's footprint and immensely contributing to the development of the University of Jaffna and the Jaffna Science Association.

I wish to congratulate Dr. Sivarajah on his 75th Birthday for his magnificent service to the Tamil community and the medical students.

Professor S Srisatkunarajah
Head/ Mathematics and Statistics
University of Jaffna

He is great person and I am very lucky to have him as a teacher

It is a great honor and pleasure for me to write few words about my most loving great teacher Dr.N. Sivarajah. He is my teacher, mentor, friend, adviser, well wisher etc. It is very hard to find out appropriate words to describe his influence on me to take up public health so called community medicine as my carrier path. He is one of the great personals contributed for the development of health services particularly for the people living in the Northern part of Sri Lanka. He had been served as head of the Department of Community Medicine for more than twenty one years.

He always looks very humble with smiley face. I learnt quite lot of thing from him. I would like to share couple of things here. During early days of my carrier, I was so aggressive and blame others for their misbehaviour. When I share these with him, he smiles and tell that "you can't change all the people, it is always very difficult to change some people, don't try hard then you will burnout and fed up. But you can simply change one person, that's you. If we change us, people will change". Really speaking, in most of the difficult instances this advice helps me a lot. Another important point I learnt from him that, he carries out his work politely without much expectations.

I would say he is great person and I am very lucky to have him as a teacher. His contribution to the community is huge. Still he is contributing his expertise in various ways to the community. I pray for him to live longer and continue his valuable services to the community.

"A teacher is a compass that activates the magnets of curiosity, knowledge, and wisdom in the pupils". - Ever Garrison

Dr.R. Surenthirakumaran MD(Com. Med.)
Consultant Community Physician & Senior Lecturer
Head Department of Community and Family Medicine,
Faculty of Medicine, University of Jaffna

He has shown us cost effective ways of running the hospice along with the Board members

Dr. Sivarajah has worked with CANE from the nineties, initially giving us advisory support to our health promotion activities , while he was a public health consultant/lecturer.

In 2006 when the CANE Jaffna Hospice became functional in early 2006, he kindly agreed to be the President of the board and has helped us by his dedicated voluntary work. He has been an excellent advisor, and has shown us cost effective ways of running the hospice along with the Board members. We are ever so grateful to Dr. Sivarajah for giving us his precious time.

We understand the sacrifices he has made to help us amongst his busy work life and the commitments to his family.

We thank him and wish him a healthy life for many more years. We hope that he will continue to help CANE and the people of Jaffna for many more years to come.

P. Thayalasekaran
Secretary
CANE UK

He remained and made countless sacrifices to ensure his neighbors, and even strangers, would have the help required

I had the immense honor and opportunity to meet Dr. Sivarajah when we recognized there was a requirement to expand upon his foundational work of establishing the night ambulance service in Jaffna. Dr. Sivarajah, besides being a compassionate humanitarian, served as a motivator, advocate, and integrator.

Within the context of the conflict, there was an urgent requirement to expand the availability of emergency medical services throughout the district. Based on his knowledge and experience, we were able to write and implement project proposals which were financed by USAID, WHO, Medical Teams International, AmeriCares, and UMCOR. The expansion included the training and adding resources to the ambulance system and establishing emergency treatment units in various hospitals around Jaffna. Without Dr. Sivarajah's guidance, support, and dedication, I do not think these expansions would not have been possible. As a result of these programs, thousands of lives have been positively impacted and countless lives saved. Although the context has changed, nevertheless, the foundations of emergency care in Jaffna are strong and strong instructions and systems are being developed upon this year by year.

The final note I will share about Dr. Sivarajah is his gentle dedication and unwavering commitment to his neighbors. In stead of following the path of retirement, the path of safety, the path of luxury, or the path of convenience, he remained. He remained, not to better himself or his family - to the contrary - but, he remained and made countless sacrifices to ensure his neighbors, and even strangers, would have the help required.

Donnie Woodyard Jr.
CEO/Managing Director
Email: dwoodyard@falck.lk

If anyone of us is appreciated for any good thing regarding the service, sir's part is always there behind and unseen.

It is of course a great privilege for me to write about my dearest teacher at this juncture when he is celebrating his 75th birthday. It is hard to believe by heart that he is now in his seventy fifth years of life, but he still remains as young as when we first met him around thirty years back. I was bestowed with his teaching when I was a student at FOM, UOJ during May 1981 to April 1985.

Sir has been a role model for everyone who wished to serve in the field of public health. He always taught his students not only the medical curriculum but also the lessons for life. He strongly believed that learning plain academic stuff won't create a good doctor but a blend of application skills, sensible thinking and far most a good attitude will definitely bring it. He loved each and every student like a father but he was caringly particular on that each of his students must be delivered to the society as a good doctor with values. He always insisted that doctor is also a life time learner and a teacher too. He inspired all of us by being so.

No one can deny that if anyone of us is appreciated for any good thing regarding the service, sir's part is always there behind and unseen, who spent all of his life time in moulding and nurturing the doctors of Jaffna medical school perfectly. May the Good Lord be kind enough to have sir's guidance for many more years ahead.

Dr.V.Yoheswaran
School Medical Officer,
RDHS office, Jaffna

Dr.N. Sivarajah - Voice of the People's Health

"The root cause of the problems is political, and only a political solution will effectivley address them"

- Dr. Sivarajah, in "Maternal and child health" address at Victims of War in Sri Lanka, A Quest for Health Consensus, 17-18 Sept 1994, London, UK

It is a delight to know that Dr. Sivarajah will be celebrating his 75th birthday with his family and friends on 12th of April. Being born and raised in the South of Sri Lanka it is a great tribute to see him serve his community in the North at a critical juncture in history.

At a time when there was an exodus of Tamil speaking doctors from Sri Lanka, in particular the North-East, his service to Community Medicine and medical education is one of the great contributions of Dr. Sivarajah, and this will go down in the history of Tamil speaking people in the years to come.

When the Tamil speaking people were orphaned by the State and brutalised by the war and economic blockade, he remained a lighthouse for the Tamil community to steer them away from malnutrition and starvation. He was instrumental in setting up feeding centres for children at the peak of the armed conflict when economic blockade was having an adverse impact on children. It is one of the crimes that the Sri Lankan state perpetrated against own citizens in the latter part of the twentieth century.

The impact of this economic blockade will continue to be felt by the future generation of Tamils, in large part due to the effects on morbidity, nutrition and infrastructure. Despite the hostile climate, using his skills of diplomacy and determination, Dr. Sivarajah did his utmost to mitigate these effects and we will be eternally grateful.

He travelled across the world to shine a light on the impact of war on infant and maternal health. Through his meticulous record keeping and focus on the health of the most vulnerable people of the community he highlighted the deteriorating health of the community. In 1992, Dr. Sivarajah made the most important observation that prior to the armed conflict and economic blockade "Jaffna had the best child nutritional status and the lowest infant mortality rate (IMR). The IMR was so low that it was claimed to be better than that of Washinton

DC". He went on to show just how drastically the war and economic blockade shaped and destroyed the people's health.

Painstakingly, Dr. Sivarajah collected statistical data on malnutrition, infant and maternal mortality at a time when financial and human resources were limited. Access was heavily restricted due to army check points, aerial bombing and shelling by the Sri Lankan Army and enforcement of local regulations by the LTTE in the de facto Eelam state. Dr. Sivarajah had the tenacity and courage to carry out several field studies, publish and disseminate findings to the international community.

When educated professionals deserted the North- Eastern Tamil speaking areas, the few people like Dr. Sivarajah, Dr. Daya Somsundaram and Dr. Natchinarkinian and others courageously sustained the Medical Education at the Jaffna Medical faculty. They prevented the impending closure of the Faculty and thereby enabled several medical graduates to qualify from the faculty. They solely oversaw the nuturing of medical graduates who are now spread across the globe, many highly successful in their chosen specialties. Also, he is a bridge for the Tamil Diaspora medical community and the North-east of Sri Lanka.

Sir Willam Osler, the respected physician of the western world, once wrote that "in the records of no other profession is there to be found so large a number of men who have combined intellectual pre-eminence with nobility of character". Certainly Dr. Sivarajah is at the highest levels in both these respects.

Dr. Sivarajah's contributions to medical education, Public Health and to understanding of the impact of three decades of war on the heath of the people are monumental. He served also as an ambassador to the Tamil North and Sinhala South and also to the wider international and Tamil diaspora community.

We wish him many more years of good health and happy life with his wife, children and grandchildren.

Dr. Suppiah Ratneswaren FRCP Lond FRCP Edin
(Family Physician,UK, Director Tamil Information Centre, London
Former Overseas Secretary, Medical Institute of Tamils UK)

கலாநிதி ந. சிவராஜா

அகலமும் ஆழமும் கொண்ட சமூக மருத்துவ ஈடேற்றம் கண்டவர்*

சமுதாய மருத்துவத்தின் வைத்திய கலாநிதி ந. சிவராஜா அறுபது வயதுக்கு புதிய அர்த்தம் தருகிறார். அவரது சிந்தனையிலும் சேவையிலும் இளமை காணப்படுகிறது. மக்களை நேசிப்பவர்கள், சமுதாய உறவில் கலந்தவர்கள், தன்னலங் கருதாதவர்கள் முதுமை காண்பதில்லை என்ற உண்மைக்கும் அவர் உதாரணம். அப்படியானவர்கள் வாழ்வு வளமும், விரிவும், வியப்பும் மிக்கதாகும்.

நடராஜா சிவராஜா நீர்கொழும்பு புனித மரியாள் கல்லூரியில் சிங்களத்தில் ஆனா படிக்கத் தொடங்கி பௌத்த கலாசார ஆனந்தா கல்லூரியில் பல்கலைக்கழகம் வரை படித்தவர். இப்போது தமிழ் மொழியில் மருத்துவ எழுத்தாளர், பேச்சாளர் வரிசையில் முன்னணியில் இருப்பவர். 'சுக மஞ்சரி' சஞ்சிகையின் ஆசிரியர். அதே வேளையில் மருத்துவ விஞ்ஞான இதழான *Jaffna Medical Journal* இன் மதிப்புள்ள ஆசிரியர் கூட.

கலாநிதி சிவராஜாவின் சமூக மருத்துவ ஈடேற்றம் அகலமும் ஆழமும் கொண்டது. வெவ்வேறு திசைகளில் எல்லைகள் கண்டது. நமது சிறுவர் போஷாக்கின் நலிந்த நிலையை புள்ளி விபரங்களுடன் உலகறியக் காட்டியவர்; முதன் முதலாக வயோதிபரின் உடல், உள சமூக சுகநிலை பற்றிய ஆய்வை தனது கலாநிதிப் படிப்பிற்கு எடுத்துக் கொண்டவர்.

இனி, கிராமச் சூழல் சுகாதாரம் தொடக்கம் யாழ். நகரிலே வாழ்வில் தாழ்வுற்ற பெண்கள், பிள்ளைகள் விவகாரம் வரை, குடல் புழு நோய் தொடக்கம் தொழு நோய் வரை, மிதிவெடி, முதல் உதவி தொடக்கம் குடும்பக் கட்டுப்பாடு வரை எடுத்த துறைகளிலெல்லாம் நிபுணத்துவ முத்திரையைப் பதித்தார்.

சிவராஜா கற்பிக்கும் கலையில் இதயம் கவர்ந்தவர். நிறைவான சிறந்த ஆசிரியர். யாழ். மருத்துவ கல்லூரி மாணவர்கள் கடந்த பதினாறு வருடங்களாக இதை அறிவர். கல்வி போல் நல்ல கல்விமானின் கற்பித்தலுக்கும் எல்லை ஏது? சிவராஜா மாணவன் அறிந்து பாடம் அறிந்து, தேவை அறிந்து கற்பிப்பவர். அவரது மற்ற மாணவர் குழுக்கள் - உப மருத்துவர், சித்த மருத்துவர், தாதிகள், சுகாதார பரிசோதகர்கள், மருத்துவ மாதுக்கள், பாடசாலை ஆசிரியர்கள்..... என விரிவடைகின்றது.

நிர்வாகம், தலைமைத்துவம், முகாமைத்துவம் சிவராஜாவின் ஆளுமையின் உடன் பிறப்புகள், கருத்தரங்குகள், சுகாதாரப் பட்டறைகள் நடத்துவதில் அவர் கைதேர்ந்தவர். மருத்துவக் கல்லூரி சமுதாய மருத்துவ பகுதியில் நடைபெறும் இவை உலக தரத்திற்கு ஒப்பாக அமைவதற்கு அவரின் நிர்வாகத்திறன் காரணமாகும். அதனால் UNICEF, SCF,

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* உதயன் நாளிதழ், 19.04.1998, ப. 3.

WHO, RED CROSS போன்ற அரச சார்பற்ற நிறுவனங்கள் அவரை நாடி வருவதில் வியப்பில்லை.

சிவராஜா நாட்டுப்பற்று மிகுந்தவர். யாழ்ப்பாணத்தின் புனருத்தாரண திட்டத்திற்கு சுகாதார நிலை ஆலோசனை அவராலே முன் வைக்கப்பட்டுள்ளது. அவருக்கு வயது இப்போது 60 தான். மிகவும் விழிப்பாக இருக்க வேண்டிய அடுத்த பத்து வருடங்களுக்கு சிவராஜாவின் நிபுணத்துவ சேவை மிகவும் தேவையாகும். அதை பொருத்தமாகப் பயன்படுத்துவது நாட்டு மக்களின், அதிகாரிகளின், அரசியல் தலைவர்களின் கடமையாகும்.

சிவராஜா என்ற மனிதர் பதவிகளையும் பாராட்டையும் நாடாதவர். அதனாலோ என்னாலோ நியாயமாக வர வேண்டிய பதவிகளும் தூர நிற்கின்றன என்பது அவருடன் இதுவரைகாலம் நெருங்கிப் பழகுவோர்கள் அறியும் விடயம். அவர் தெய்வத்தில் நம்பிக்கையுள்ளவர். ஆன்மீகத்தின் ஆணையில் செயற்படுபவர் அப்படியானவர்கள் மலிவான பாராட்டுக்களை எதிர்பார்ப்பதில்லை. எனிலும் இந்தச் சிறு குறிப்பு எழுதுவது நாட்டிற்கு நல்லது என்று நினைத்தேன்.

பேராசிரியர் 'நந்தி' செ. சிவஞானசுந்தரம்

அன்பிற்குகந்த மாமா

சிவராஜா மாமா எங்கள் குடும்பத்தின் நீண்டநாள் அங்கத்தவர். அப்பாவினால் (டாக்டர். நந்தி) சிவா என்று அன்புடன் அழைக்கப்பட்ட அவர் எங்களுக்கு சிவராஜா மாமா. எங்கள் குடும்பத்தில் அனைவருக்கும் மாமாவைப் பிடிக்கும். மாமாவின் அழகிய கருணை நிறைந்த முகமும் கனிவான பேச்சும் எங்களை அவர்பால் ஈர்த்தது. மாமாவிற்குக் கடுமையாகப் பேசத் தெரியாது. மிகவும் மென்மையானவர்.

எந்தவொரு வேலையைச் செய்யத் தொடங்கினாலும் மிகுந்த ஈடுபாட்டுடனும், அர்ப்பணிப்புடனும் செயது முடிக்க வேண்டும் என நினைப்பவர். இன்றைய காலகட்டத்தில் அனேகமானோர் பதவிக்காகவோ அல்லது பணத்திற்காகவோதான் வேலை செய்கிறார்கள். ஆனால் மாமாவோ இதற்காகவெல்லாம் ஆசைப்படாதவர். 50 வருடங்களுக்கு மேலாக சமுதாய நலனை மட்டுமே கருத்திற் கொண்டு செயற்பட்டு வருபவர்.

யாழ் மருத்துவ பீடத்தில் சமுதாய மருத்துவத் துறைக்கு மாமா ஆற்றிய பணி மிகப்பெரியது.

அவரின் கைகளில் இருந்து வெளிவந்த எத்தனையோ மருத்துவர்கள் இன்று உலகின் பல பாகங்களிலும் உள்ளனர். சமுதாய மருத்துவத் துறையில் மட்டுமன்றி அவரிடம் கற்க வேண்டியவை நிறைய உண்டு.

நிர்வாகத்துறையிலும் ஆவணங்களை ஆவணப்படுத்துவதிலும் மாமா மிகவும் கைதேர்ந்தவர். சமுதாய மருத்துவத் துறைக்கு நாம் சென்று ஒரு குறிப்பிட்ட ஆண்டைக் கூறி அந்த ஆண்டில் இடம்பெற்ற ஒரு சம்பவத்தைப் பற்றிய ஒரு ஆவணம் தேவை எனக் கூறினால் உடனடியாக அந்த விபரம் எமது கைகளில் கிடைக்கும். இது மாமாவினால் நடைமுறைப் படுத்தப்பட்ட ஒரு ஆவணப்படுத்தும் முறையாகும். அவரைப் பின்பற்றி இனறு நாம் எமது இணை மருத்துவ விஞ்ஞான அலகிலும் அவரின் ஆவணப்படுத்தும் முறையை நடைமுறைப் படுத்தி வருகிறோம்.

மாமாவைப் பற்றிக் கூறும் போது கட்டாயம் அவரின் மலையரசி அக்காவைப் பற்றியும் குறிப்பிடவேண்டும். நாம் இன்று மாமாவின் 75வது பிறந்தநாளைக் கொண்டாடுகிறோம் என்றால் அது மலையரசி அக்கா அவரின் நலனில் எடுத்துக் கொண்ட அக்கறையேயாகும். 2005ஆம் ஆண்டு எமது தந்தையின் இழப்பிற்குப் பின்னர் அதனைப் பல வழிகளில் ஈடுசெய்தவர்கள் மாமாவும் மலையரசி அக்காவும் தான். அப்பா இல்லாத போதும் அதேயளவு அனபுடன் நாம் எந்த நேரம் எது கேட்டாலும் எமக்குத் தகுந்த ஆலோசனை தந்து எமது முன்னேற்றத்தில் அக்கறை உடையவர்.

மாமாவின் மணிவிழாவின் போது அப்பா இவர் இன்னும் 10 வருடங்களாவது எம்முடன் இருந்து மக்களுக்குச் சேவையாற்ற வேண்டும் என்று எழுதியுள்ளார். அவரின் வாக்குப்படி மாமா இந்த சமூகத்திற்காக வாழ்ந்து வருகிறார். அவர் இன்னும் பல வருடங்கள் எம்முடன் ஆரோக்கியமாக இருந்து வைரவிழாவும் மணிவிழாவும் கொண்டாட வேண்டும் எனபது என்னைப் போன்ற பெறாமக்களின் ஆசையாகும். மாமா என்றும் இளமையாகவும், இதே சுறுசுறுப்புடனும் எம்மடையே நடமாட வேண்டும்.

அவரின் ஆற்றல், திறமை, பக்குவம் என்பன இன்னும் பலரைச் சென்றடைய வேண்டும். இதுவே எமது ஆசையாகும்.

திருமதி தெய்வி தபோதரன்

PART II - Health in Wartime North of Sri Lanka

War and Health in Northern Sri Lanka: How did the People Survive?

1

Professor Chellathurai Sivagnanasundram Inaugural Memorial Lecture

Vice Chancellor, the Dean Faculty of Medicine, members of the family of Professor Sivagnanasundram, friends, colleagues and students,

I thank the members of the family of the late Prof. C. Sivagnanasundram, the members of the Faculty of Medicine and the University of Jaffna for inviting me to undertake this task of delivering the Professor Chellathurai Sivagnanasundram Memorial Lecture.

I have been a close associate of Professor Sivagnansundram for over quarter of a century. He has been my boss, my teacher, a friend, an elder brother, a father, and many more.

Prof Sivagnanasundram qualified from the University of Colombo in 1955 and served in the state's Health sector, in different capacities. In 1965 he joined the Department of Community Medicine, at the University of Peradeniya and rose up to the post of Associate Professor. While in Peradeniya he played a leading role in the organization and conduct of the first ever Post-Graduate course in Community Medicine in Sri Lanka, which commenced in 1972, leading to a Master of Medical Science awarded by the University of Peradeniya.

When the Jaffna Medical Faculty of the University of Jaffna was opened in 1978, he was invited to the Faculty to be its first Professor of Community Medicine, the post he held until his untimely demise.

He was the corner stone in the establishment and development of the Department of Community Medicine and the Faculty of Medicine of the University of Jaffna. He was one of those who laid the foundation stone for the medical faculty building at Kokuvil on 29th November, 1979.

He had been the Dean of the Faculty of Medicine, a member of the University Council, Acting Vice Chancellor, member & examiner at the Post-Graduate Institute of Medicine and also a member of its Board of Management

His contribution to Public Health and Community Medicine is immense. He pioneered several Research projects.

He was an international consultant to the World Health Organization and also the Ministry of Health in the Kingdom of Jordon. A guidebook for Paramedics prepared by him in 1981, has been translated into Arabic and used as a training

manual for Paramedics in Jordan. As a consultant on Health Services Research, he has served in Malaysia, Bangladesh, North Korea, Mongolia, India, Myanmar and Zimbabwe.

He had been actively taking part in several Academic bodies such as the Jaffna Medical Association and the Jaffna Science Association.

He shined not only academically, but also as a writer, an actor

He was a voracious writer in Tamil and English. He started writing at the tender age of thirteen. At the age of nineteen he published his first short story "Sanchalamum Sandoshamum" in the 'Veerakesari'. Three of his novels have received the Sri Lanka Sahithya Academy Award. In 2002 he received the Governors Award (North East Province) in recognition of his contribution to modern Tamil literature. He has been the editor of 'Sai Margam' for six years since 1998.

His books in English were mainly for the medical fraternity. His book on 'Learning Research' has had two editions and is widely used across all medical schools and Post Graduate students in Sri Lanka. In addition, he has over fifty publications in National and International medical and public health related journals.

He has published seventeen books in Tamil. Four of his Tamil books are on preventive medicine for lay people, two for children, two on spirituality and one a Handbook for teachers on Sri Sathya Sai Education on Human Values.

Prof. Sivagnanasundram is a keen observer. His Tamil novels and short stories portray the characters he met in his daily activities. Each one of his short stories gives both a potent and introspective message. Most of his stories has embedded Health messages. He introduced his medical experiences into the Sri Lankan Tamil literature.

While working at Hiripitiya, he portrayed the character of the local midwife through his publication "Singalaththu Maruthuvichchi". With his experience in managing the cholera epidemic in Jaffna, he wrote the novel 'Thangachchiamma". While working as MOH Nawalapitiya he portrayed the plight of the Estate labour through his novel "Malaikolundu"

He had a dynamic personality and was a creative genius. His extraordinary talent extended beyond his academic excellence. For several years he was the "Radio doctor" for "Radio Ceylon"

He was also an actor. He has acted in over 50 dramas. He has during a two year period (1952 – 53) acted in 25 Tamil Radio dramas. He has even acted in a lead role during the early stages of the Tamil film industry in Sri Lanka, in a Tamil film "Ponmani" directed by Dharmasena Pathiraja.

He helped in the development of several people he met in his life. I am what I am today, because of him

Prof Sivagnanasundram was very happy to teach Health to the layman and carry on with health promotion even under trying circumstances.

Even under adverse conditions he always strained to maintain high standards of Health care and education in the places he worked and in the Medical Faculty. Some of the things I propose to present are what I have learnt from him

It gives me great pleasure to deliver this inaugural Professor Chellathurai Sivagnanasundram Memorial lecture on "War and Health in Northern Sri Lanka. How did the people survive?"

I feel that it is a very suitable topic to honour the memory of a man who lived amidst the war and devoted his entire life to education and the improvement of Health in this part of the land.

Health Care in Jaffna during the 19th and 20th Centuries

The American missionaries who came to Sri Lanka in the early 19th century ended up in the Northern part of the island.

The arrival of the American missionaries in Sri Lanka marked the introduction of Allopathic medicine into the community which was engrossed in Traditional medicine. Rev Dr. John Scudder and his wife who arrived in 1819 were the earliest medical missionaries to arrive in Ceylon[1]. He established the first dispensary in a thatched hut in Pandatherippu on the 8th of June 1820.

Dr. Samuel Fisk Green followed Dr. Scudder and practiced allopathic medicine. He established a Medical School in Vaddukkoddai which was later shifted to Manipay. This was the first medical school in Allopathic Medicine, in Ceylon, and probably the first in South East Asia.

According to Dr. Vaithilingam alias W Chapman[2], Dr. Green had a vision to provide one doctor to every 10 000 Tamil population. He had trained 134 doctors between 1848 and 1879 including the 62 who were taught indirectly through his students when he was away in America. A massive achievement in the 19th century!

Dr Samuel Green expected his students to remain in Jaffna. But when he found that doctors who passed out of his medical school started migrating to other countries like Malaysia, Singapore and Burma, he switched the language of education into Tamil. For this purpose he learnt Tamil and wrote several Medical books in Tamil.

The Jaffna Friend in Need hospital – the fore runner to the Jaffna Teaching Hospital – from its commencement was supplied by doctors from among Dr.

Green's students. According to Dr. Chapman, in the year 1884, the hospital accommodated an indoor of 30 patients and had an outdoor of 50 patients daily.

On the first of June 1870, the Colombo medical school was opened. On the first of May 1879, the remaining seven medical students at Dr. Green's medical school were absorbed into the Colombo medical school. This ended that era of medical Education in Jaffna and the pioneer educational centre was closed down until the opening of the present Jaffna Medical Faculty one hundred years later.

During the early part of the 20th century and even up to the late 1960s, the Jaffna District had very good health care facilities available to the people. The district was studded with allopathic medical institutions managed by the state. There was also a very good private sector group of hospitals such as the Moolai Cooperative Hospital and the American mission hospitals like the Mc Leod Hospital in Inuvil and the Green Memorial Hospital in Manipay. There were also several Private Hospitals and general practitioners providing services throughout the district. Names such as Pasupathy, Vettivelu, Sambanthar, PS. Abraham, Dharmalingam, Philips, Naganathar, Gengatharan were household names.

There was also a very popular group of Traditional practitioners who practiced their profession diligently. Some well known names were Athanasiyar, Innasithamby, Sillalai pariyar, Annamalai, Packiyanathan, Ramasamy, Kasthuriyar, Pararasasingam, oddahapulam and Nayanmarkattu.

During this period, even the Jaffna Tamils who were living in the south for employment and business purposes returned to Jaffna for their confinements and for treatment. The conflict has reversed this situation.

The Conflict and Its Effect on Health

Violent armed conflicts occur all over the world. "War" is classified as a form of collective violence, but since the legal definition of war is controversial, many international instruments such as the 1949 Geneva conventions, use the term "Armed conflict". Armed conflicts have a grave impact on the health of the combatants and the public.

In modern day war a majority of those affected are the civilians.

During the post-independence era, the ethnic conflict which commenced in the 1950s, transformed itself into an armed conflict in the late seventies. Subsequently it turned into an "open war". During this span of fifty years, the health status of the North kept on gradually deteriorating.

Some milestones in the escalation of the war are

- 1958 Ethnic Riots – *"Emergency 58"* Riots in Colombo and suburbs with Tamil refugees migrating to the North

- 1983 Attack on military convoy in Jaffna followed by ethnic violence in Colombo and suburbs, with refugees migrating to the North
- 1987 Arrival of Indian Peace Keeping Force (IPKF)
- 1990 Departure of IPKF, eruption of 2nd Eelam war
- 1990 LTTE in control of Jaffna Peninsula (upto 1995) and A9 blocked at Elephant pass
- 1991 Operation Valampuri by Security Forces resulting in displacement of population from the Islands
- 1993 Operation Yarldevi by Security Forces
- 1995 Operation Leap forward and Riviresa by Security Forces and Mass migration from Valikamam & Vadamarachchi towards Thenmarachchi
- 1996 Displaced returned to their places (Except High security Zones)
- 2002 Peace accord signed and A 9 road opened after 12 years
- 2006 A9 closed

Conflicts can have an immediate impact on Health of the people and affect the Mortality, Morbidity and Disability in the affected population (Table 1). The WHO World report on Violence and Health[3] enumerates the direct impact of conflict on health and the possible causes.

The morbidity and mortality data for Jaffna show clearly this effect. Whenever there was escalation of the war and operations by the warring factions, the maternal and infant mortality showed rise in trends.

Table 1: The Direct Impact of Conflict on Health

(Adapted from World report on Violence and Health[3])

Health Impact	Causes
Increased Mortality	*Deaths due to Physical Trauma* (e.g. bombs, landmines) *Deaths due to Infectious diseases* (e.g. Diarrhoeal diseases, Respiratory tract infections *Deaths avoidable* through proper Health care (e.g. emergency intervention, preventive measures, medication).
Increased Morbidity	*Injuries* due to physical trauma (e.g. weapons, burns, poisoning) Injuries due to increased *societal violence*, including sexual violence *Infectious diseases*: water-related, (e.g. cholera, typhoid), vector borne (e.g. Malaria), and other communicable diseases (e.g. TB, AIDS) *Reproductive Health*: more stillbirths and premature births, more babies with low birth weight and more women with complicated deliveries. *Nutrition*: Acute and chronic malnutrition and deficiency disorders. *Mental Health*: Impact of psychosocial trauma on mental health (e.g. anxiety, depression, suicide)
Increased Disability	Physical Social Psychological

The World Health Organization estimates that 310,000 people died from war related injuries in 2002. Rates have been calculated as 1 per 100,000 people in high income countries and 6.2 per 100,000 people in low and middle income countries[3]

In prolonged armed conflicts there can also be a delayed and indirect impact which can affect the health system and the heath sustaining infrastructure (Table 2).

Table 2: The impact of conflict on the Health system and health-sustaining infrastructure, and its effects

(adapted from World report on Violence and Health p 227)[3]

Object of Impact	**Manifestation of impact**
Access to Health Services	Reduced security Financial exclusion (due to charges for services) Geographical exclusion
Health Care activity	Shift from primary care and preventive health care to specialist curative care Reduction in rural and community-based services Disrupted surveillance and health information systems Damage to vehicles and equipment Compromised public health programmes
Infrastructure	Destruction of clinics Disrupted referral systems Damage to vehicles & equipment Poor logistics & communication
Equipment & supplies	Lack of drugs Lack of maintenance Inability to maintain cold chain for vaccines
Human Resources	Insecurity pervades working environment Low morale Difficulty in retaining trained workers Disrupted training and supervision
Essential Health sustaining infrastructure	Water Sanitation Power Food security
Relief & reconstruction activities	Security limits access to certain areas Increased cost of delivering services Greater focus on single programmes with less integration between programmes Less security for relief personnel Weakened coordination & communication between agencies

The Demographic health Survey[4] carried out by the Department of Census and statistics in 2001 give health indicators which show that some of the indicators are poor for the North east compared to the rest of the country (Table 3)

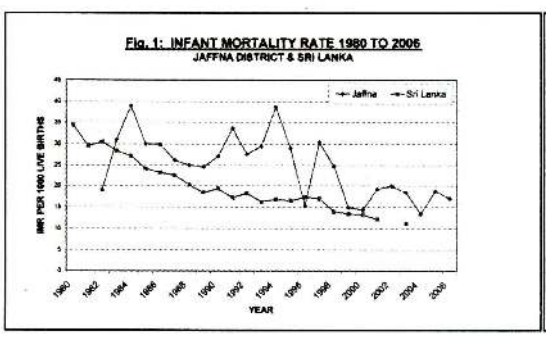
Table 3:. Selected Health Indicators for NEP compared to other Provinces

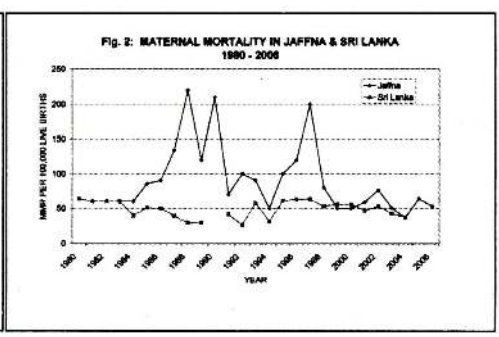
Indicator	NEP	Other Provinces
Households with Pipe borne water supply	8.9 %	23.4 %
Households with water seal latrines	48.2 %	72.6 %
Deliveries assisted by Doctor, Nurse or midwife	80.6 %	96.0 %
Under weight Children under 5 years	46.2 %	29.4 %
Children born with Low Birth weight	25.7 %	16.7 %

Mortality

Consequent to the shortage in Community based grass root level Health workers like PHMs and PHIs, and inadequate medical facilities, the Maternal Mortality Ratio (MMR) and Infant Mortality Rates (IMR) have increased since the war started. The IMR for Jaffna which was less than the national figure in 1982 overtook the National figure and still remains above the national figure even after 25 years. The MMR which was same as the national figure in 1982 went up and has still not come down. During certain periods of escalation of the war, the MMR went up several folds when compared to the national figure. This is in spite of the under-reporting of infant and maternal deaths, caused by the shortage of field and hospital staff in the war affected areas.

The maximum recorded maternal deaths in recent times occurred in 1988, during the occupation by the IPKF. In that year there were 42 maternal deaths in the Jaffna district, giving a MMR of 220 per 100,000 live births. 68.3% of the maternal deaths occurred after the delivery. The causes of death of a majority of the maternal deaths were preventable. During 1988, 29.3% of mothers died of infection (Septicaemia), 24% due to post-partum haemorrhage. Most of the deaths were associated with difficulties in transport to a hospital.





Human Resource

One of the causes of the ethnic conflict was the introduction of "standardization" in education and district quota system in the late seventies and the consequent reduction of admission of Tamil students from the NEP to the Universities and other training institutes established in Southern Sri Lanka and involved in training Health Resource. With the retirement of older persons in the health service, and no one to replace them, the trained health manpower in the NEP started declining. Even the training institutes like the Nurses Training Schools which were in the North and East (which trained Nurses and Midwives) were not recruiting annually their full quota of nurses and midwives for training[5]. As a result, the Paramedical manpower gradually decreased and reached a precarious level during the last two decades. There developed an acute shortage of paramedics such as Nurses, Public Health Nurses (PHN), Public Health Inspectors (PHI), Public Health Midwives (PHM), Radiographers and Physiotherapists. Action taken during the past few years has paved the way to fill some of the vacancies of paramedics such as Family Health Workers and Public Health Inspectors.

Table 4: Requirement and availability of Human Resource in the Jaffna District as at 2006.

Item	Category of Staff	Approved cadre		Number available		Vacancies	
		# JTH	@Outside JTH	JTH	Outside JTH	JTH	Outside JTH
1	Consultants	32	17	13	0	19 (59%)	13 (100%)
2	General MO	179	88	114	6	65 (36%)	82 (93%)
3	AMO / RMO	-	58	-	17	41 (71%)	41 (71%)
4	Nursing officers	532	308	338	39	194 (37%)	269 (87%)
5	MLT	20	18	9	1	11 (55%)	17(94%)
6	Physiotherapists	14	3	5	0	9 (46%)	3 (100%)
7	MOH	-	11	-	1	-	10 (91%)
8	PHNS	-	15	-	1	-	14 (93%)
9	PHI	-	100	-	61	-	39 (39%)
10	PHM	-	351	-	84	-	267 (76%)

Abbreviations:

AMO / - Assistant Medical Officer
RMO - Registered Medical officer
JTH - Jaffna Teaching Hospital
MO - Medical Officer
MLT - Medical laboratory Technologist
MOH - Medical Officers of Health
PHNS - Public Health Nursing Sister
PHI - Public Health Inspector
PHM - Public Health Midwife (Family Health officer)

Source: *# - Director Jaffna Teaching Hospital, Personal communication 19.01.2007*

@ - Deputy Provincial Director of Health Services, Jaffna. Annual District Health Plan 2007 – Jaffna District. Planning Unit DPDHS Office Jaffna. 2006. pp 57-8

With the rise of militancy and the consequent military presence, in the early 1980s, a sense of insecurity developed among those in the Tamil speaking areas of the North-east. Professionals who could find employment outside the conflict area started moving out. Among the first to move out were the doctors. During the conflict in the North east, a majority of Health staff (Doctors, Nurses and Technicians) left the area. In addition training of paramedics was hampered due to a variety of reasons.

The emigration of trained health resource is not unique to Sri Lanka. In Cambodia during the uprising, out of the 487 doctors reportedly working in 1975, only 43 remained by 1979.

Presently there is an acute shortage of almost every category of Health Staff in the North East. Table: 3, gives the Human resource requirement for the State health sector in the Jaffna District. The status in the districts like Kilinochchi, Mullaitivu and parts of Mannar and Vavuniya are worse. The human resource is based on the approved cadre and this cadre itself has not been revised for several years.

Health Institutions and Access to Health Care

The Jaffna District has a fairly equitable distribution of the 42 medical institutions. But the service provided is limited, due to inadequate resources. 12% of the medical institutions are closed down and 14% are partially functioning. Even the balance that is functioning is doing so with limited resources.

Several Health Institutions were completely destroyed during the war. Some institutions are within the High security Zones and not accessible to the people. The Tellippalai District hospital which houses the Cancer treatment centre is within the High security Zone with limited access to patients and staff. No patient or staff could stay overnight at this hospital and all patients who need radiotherapy have to be transported daily going through rigorous security checks.

Military camps have been established adjoining several hospitals, especially the two major hospitals – Jaffna Teaching Hospital and Point Pedro Base Hospital causing delays and hardships to patients in accessing health care. In the east some hospitals have been completely taken over by the military.

The major hospital in the Jaffna District is the Jaffna Teaching hospital (JTH). This hospital was shifted to Manipay Green Memorial hospital for about five months in 1990 (from June 20th to November 8th).

A study[6] done in the latter half of 1990, showed that out of 224 infants who died, 119 (53.1%) died due to delay in treatment as a result of a combination of several factors such as lack of transport, curfews, aerial attacks, and non-functioning of the closest hospital.

The JTH has 1200 beds now. There are 13 consultants and 114 doctors working in this hospital whereas the cadre is 32 and 179 respectively[7]. Although the approved cadre for doctors fixed several years ago is 179, the required cadre is 341.

The peripheral hospitals in the Jaffna District have 960 beds for patients to be admitted. At present there are only 6 doctors to serve in these hospitals[8]. The Health Ministry's approved cadre of doctors needed for the peripheral hospitals are 88. Due to scarcity of Medical personal, in several instances two hospitals are looked after by one Registered Medical Officer.

The hospitals in the periphery are underutilized due to lack of human resource, resulting in overloading of the Teaching Hospital.

The Jaffna District which should have 11 Medical Officers of Health has only one retired medical officer. Most Health Units are "looked after" by Senior Public Health Inspectors, with medical officers working elsewhere "covering up".

Nutrition

According to the Sri Lanka Demographic survey of 1976, the Nutritional level of our children was better than that of most of the other districts of Sri Lanka[9]. But the Demographic and Health Survey of 2001 conducted by the Department of Census and Statistics, indicates a very serious situation.[10] It indicates that 46.2% of children 3 – 59 months living in the North East Province are underweight compared to 29.4% of children in the similar age group in the rest of Sri Lanka. Several other studies carried out locally have also corroborated this finding.[11 12 13]

Not only children, women too have been found to be affected by poor nutrition. A study[14] carried out by the World Food Programme in 2001 in Welfare Centres showed that 61% of pregnant women and 56.2% of the adolescent girls were anaemic

Malaria

Malaria had been a major communicable disease in Sri Lanka during the first half of the last century. Its resurgence during the late 1960s prompted the Ministry of Health to institute intensive control measures. In spite of the control measures, malaria remained endemic in the war torn North.

In the nineties there was high incidence of malaria in the Jaffna district. In 1998, Jaffna District had 47,802 cases of malaria giving an incidence rate of 97.9 per 1000 population. In that year, among the causes for admission to hospitals in Jaffna, malaria ranked Number one[15]. During the same year a high incidence of malaria was also recorded in Kilinochchi and Mullaitivu districts.

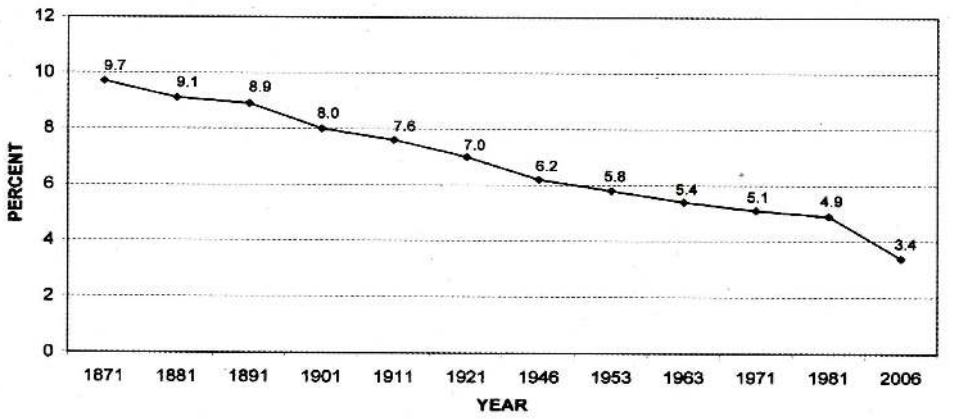
During 1998, 105 persons died of malaria in Sri Lanka. One hundred and two of them (97%) were from the North East province. By 2002 the incidence of malaria had dropped to negligible levels and in 2006 there were only two cases of malaria in the entire Jaffna district.

The Demographic Shift

The population of Jaffna District which was 234,497 during the first census in 1871 increased three fold to 738,791 in 1981. During the same period the Sri Lankan population increased by 7 times[16].

At the same time, taking the Jaffna District population as a percentage of the Sri Lankan population it showed a gradual decline. In 1871 the Jaffna district's population was 9.7% of the Sri Lankan Population. At the 1981 census it had dropped to 4.9% (Figure 3).

Figure 3: POPULATION OF JAFFNA DISTRCT AS A PERCENTAGE OF THE SRI LANKAN POPULATION



Within the next 25 years, the population decreased by a further 200,000 to the present population of 653,735 as at 31st December 2006.[17] Today the Jaffna District population is 3.4% of the Sri Lankan population.

According to the Government Agent Jaffna, 143,759 persons, (21.9%) of those living in the Jaffna District are displaced (Table 5). Most of those displaced are living with friends and relations and in 90 welfare centers. Some of them have been displaced for over 15 years.

Only 168,706 (25.8%) people in the Jaffna District have an income above the poverty level.

Amidst the war and deprivation, controls, military sanctions, restrictions on food, economic blockades, food scarcities, the population of Jaffna district and

Table 5: Population of Jaffna District as at 31.12.2006

Category	Families	Persons
Displaced before 11.08.2006	32,803	109,815
Displaced after 11.08.2006	10,480	33,944
Fishing	8,026	27,082
Vulnerable	34,297	101,959
Samurdhi	53,615	212,229
Total Relief	139,221	168,706
Above Poverty line	49,045	168.706
Total	188,266	653,735

Source: District Secretariet, Jaffna

the North survived. Although the health infrastructure was severely damaged and the services were deprived of human resource, the health indicators although lower than the rest of the country is not very bad compared to countries which are at war for decades.

Although there had been several displacements and hundreds of refugee camps at different times, no major epidemics broke out among the refugee population.

How did the population survive the effects of the war?

Culture

The population of the North had always been Health conscious. Our culture and religion encouraged health habits

Health has been an important concern of most communities and health practices have been ingrained into the culture and religion. The Tamils in the North have not been an exception. As a result; health habits and concerns have been incorporated into several religious and cultural observances and practices.

Simple cultural practices such as bathing after attending funeral houses, not partaking of food for 31 days from homes where death has occurred helps in preventing the spread of infections, in cases where the deaths had occurred as a result of infectious diseases.

Water is an important source for the spread of bowel diseases. Common water sources are likely to be contaminated easily. Unlike in the south of Sri Lanka common water sources such as common wells, rivers, lakes are uncommon in the Jaffna district and most of the households in the Jaffna District have their own wells. Sharing of water outside the family circle is limited. This may be one of the reasons for the absence of major water borne epidemics in spite of the massive displacements.

Preventive Public Health concerns such as hanging margosa leaves at the entrance to houses where infectious diseases (such as measles, chickenpox) are present, warns visitors of an infectious disease in the household and thus prevents the spread of diseases.

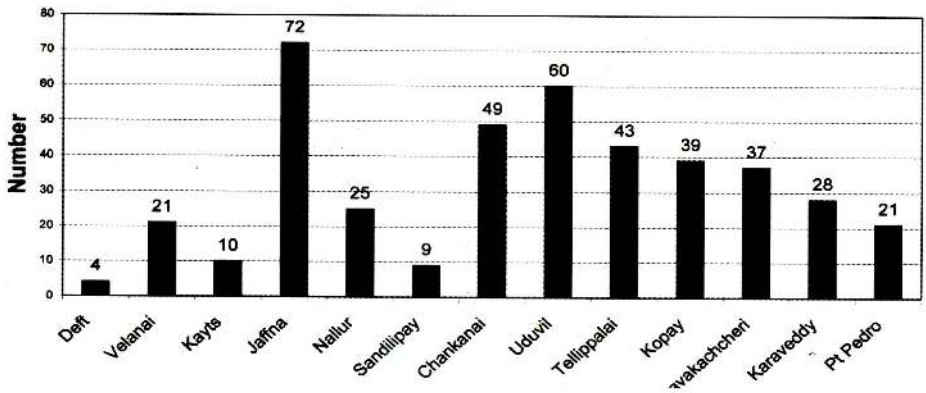
Human Resource for Health

A majority of the people of Jaffna resort to allopathic medicine. A sizable proportion of the people, especially in the rural areas, resort to Traditional medicine. Most of these Traditional Practitioners use allopathic drugs as well.

In addition to the Western system of medicine the indigenous system of medicine (referred to as Siddha and Ayurveda) is incorporated into the state system. The North-Eastern Provincial council (NEPC) has 16 Ayurvedic Central Dispensaries and 45 Free Ayurvedic Dispensaries.

A survey carried out by Jayanthi Jegatheesan[18] of the Department of Community Medicine, University of Jaffna, during the early 1980s found there were in Jaffna during the year 1983, 418 Physicians practicing Traditional Medicine, which amounts to about one Traditional physician for 2000 population. The distribution of these physicians in the Jaffna District is given in Figure 4.

Figure 4: Traditional Physicians in Jaffna District - 1983



Did these traditional physicians play a part in maintaining the health of the people? Did their use of allopathic medicine together with traditional medicine, help in the prevention of the deterioration of the health of the people?

Prof. Sivagnanasundram[19], way back in 1979, suggested liaison with Ayurvedic Physicians at basic Health care level to supplement the health manpower for community health work. Data on their contribution to health care is lacking and needs investigation.

The Role of the Paramedics

The major load of the outpatient care in the North is looked after by the Assistant Medical Officers (AMO) and the Registered Medical Officers (RMO). This category of Paramedics has been in the Health Service for the past 134 years. The AMOs were originally called Apothecaries. The training of Apothecaries started at the Medical School in Colombo in 1873 and they were serving mostly in the Estates. They underwent a training for 2 ½ - 3 years in most of the areas of medicine which is covered by the medical students but to a lesser depth. The major institute for training was the National Institute of Health Sciences (NIHS) in Kalutara. Subsequently the training was carried out at the Faculties of medicine in the Universities of Colombo, Peradeniya and Jaffna. The training in the medical faculties was stopped and the training was conducted only at the NIHS. On an average 60-70 were trained annually[20]. The last batch started traing in 1996 and completed ten years later

The original designation of "Apothecary", which was later changed to "Assistant Medical Practitioner" (AMP) is now known as "Assistant Medical Officer" (AMO). After serving in the Health Ministry for 8 years they are designated as "Registered Medical Officer" (RMO).

The Jaffna Medical Faculty started training of AMOs in 1979. This programme in Jaffna was initially coordinated by the late Prof. C Sivagnanasundram. The training programmes continued until 1990. During this period, the Jaffna Medical Faculty trained a total of 175 AMOs in six batches.

As at 31.12.2006, there were 48 RMOs working in the medical institutions in the Jaffna District. It is to be noted that 29 (60%) of them are retired and re-employed. Some of them are over 70 years old.

This category of Paramedics has contributed immensely to the prevention of the deterioration of the health status of the people.

The AMOs and RMOs have been and are even now very suitable for working in small institutions with minimum facilities. The discontinuation of this training programme in the Jaffna University is unfortunate and ill-timed, especially when there is a great human resource shortage in this part of the country. Restarting the training of this category of paramedical staff could be an alternative to the problem of Human resource shortage.

Health Care during the "Mass Exodus" from Jaffna

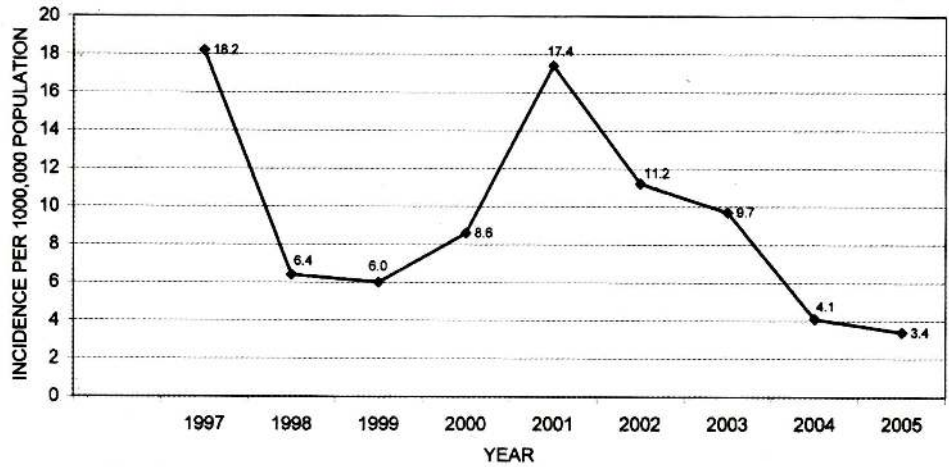
The Jaffna population experienced a mass internal migration during 1995. On the 30th of October 1995 an estimated 250,000 people from Valikamam and Vadamarchchi moved out in one night, in the midst of pouring rain, from the

Northern to the southern part of the Jaffna District. Another 250,000 moved out during the following two days. Although there was high morbidity and mortality, associated with this migration, especially among children, elderly and the handicapped, most of these deaths were unrecorded

The displaced people remained in Thenmarachchi (southern part of the Jaffna District) and by April 1996 a sizable proportion moved into the Wanni mainland. The balance moved back into Valikamam and Vadamarachchi where they had been living earlier.

When they returned to their homes, in the Jaffna District, there were landmines and unexploded devices in and around their houses. Nearly 500 people in the Jaffna District were killed or maimed by these landmines and other unexploded devices. In the year 1997 alone there were 91 persons affected by landmines and unexploded ordinances giving an incidence rate of 18.2 per 100,000 population and again 17.4 per 100,000 in 2001 following the Elephant pass war. In 2001, most of the casualties were from Thenmarachchi (Fig. 5).

Figure 5: INCIDENCE OF LANDMINES IN JAFFNA DISTRICT 1997 - 2005



The refugees who moved into the Wanni were badly affected. As they moved in to the Wanni, they were displaced from Kilinochchi and ended up in Puthukudiyiruppu, Mallawi, Mulangavil and Akkarayankulam. The 128-bedded hospital at Kilinochchi was completely destroyed. The entire staff working at Kilinochchi hospital moved to Mallawi and Akkarayankulam.

At that time there were only 5 doctors with an MBBS qualification and 10 RMOs to look after a population of around 400,000. The local doctors were in the Mallawi hospital (1), Mulangavil (1), Akkarayankulam Peripheral

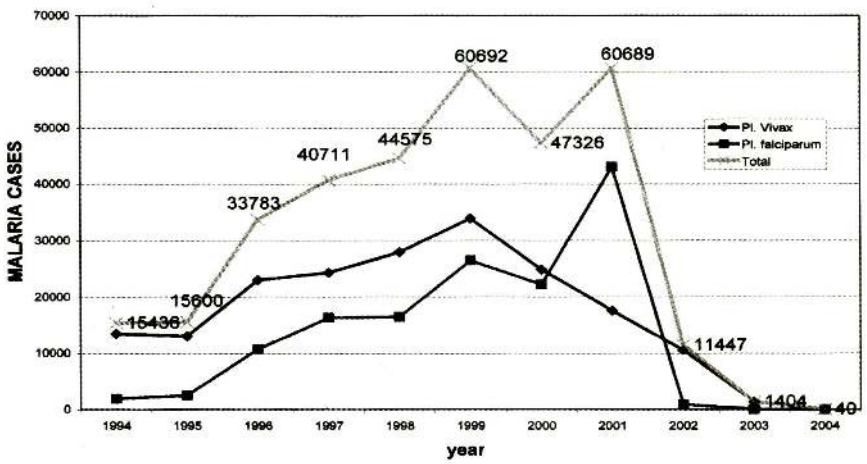
Unit (2) and Puthukudiyirupu (1). In addition there were 3 expatriate doctors from the Medicins Sans Frontiers (consisting of a Surgeon, Obstetrician and a Paediatrician) who were displaced from Kilinochchi and continued to provide their services from Mallawi. The doctors from Mullaitivu hospital were already displaced to Puthukudiyiruppu Peripheral Unit.

At that time there were three areas of Medical Officers of Health functioning. They were manned by Senior Public Health Inspectors.

The gaps in the health service personnel were filled by the Tamil Eelam Health Service and the Thileepan Health Service personnel. There were also volunteer health workers with financial support from Non Governmental Organizations

During the late 1990s there was high incidence of malaria. The concerted effort of the State Health service, the Thamil Eelam Health service, the Thileepan Health service and volunteers was able to contain the epidemic of malaria. Action included a multi-pronged attack including, adult control, larval control, personal prevention, early and complete treatment (Figure 6).

Figure 6: MALARIA IN KILINOCHCHI DISTRICT - 1994 - 2004



During the first half of 2005, there were 16 cases of malaria in Kilinochchi and all of them were imported cases among construction workers from Batticaloa districts. Prompt intense preventive action taken by the Kilinochchi Health staff averted a calamity and local spread.

The status of the State Health Service in the "Wanni".

The term "Wanni" denotes the land area which includes the Districts of Kilinochchi, Mullaitivu and parts of the districts of Vavuniya and Mannar (Table 6).

Table 6: Composition of the "Wanni" area

District	Approximate Population as at 2004	Remarks
Kilinochchi	140 000	
Mullaitivu	130 000	
Vavuniya (Part)	13 276	Area of MOH Vavuniya North (Un-cleared area)
Mannar (Part)	28 000	Area of MOH Adampan and part of Madhu (Un-cleared area)
Total Population served	311 276	

In the Wanni, a parallel Health service exists with the State Health service. The Resource availability (Human, Financial and material) in the state sector of the Health service is poor as in other parts of the NEP. This parallel Health Service complements the services of the state health service and had been partly responsible for the prevention of deterioration of the health status of the people of the Wanni.

It is possible to see in the Wanni how Health acts as a bridge between two opposing parties. One could see the concept of "Health as a Bridge for Peace" in force in the Wanni. The different sectors coordinate in maintaining and running the health service.

The State Health Service

This is organized as in the rest of the country. But the resources are limited. The two districts (Kilinochchi and Mullaitivu) are included in the Wanni. The Division of Vadamarchchi East (which is part of the Jaffna District), Division of Vavuniya North (which is part of Vavuniya District) and the divisions of Manthai and Vidathalthivu (which are part of Mannar District) form the "Wanni". This land area is under the control of the LTTE and named as "Uncleared area" by the Government of Sri Lanka.

The Wanni has an approximate land area of 4400 sq. km and an estimated population of 311,276

The Thamil Eelam Health Service (TEHS)

This is the main structure that controls the Health Services. A medic (Vaman) is the Director. He has undergone training locally, somewhat equivalent to an MBBS course. The course curriculum included in addition to most of the sections taught in a normal medical school plus war surgery. All of them have carried out war surgery and medical care before they completed their course. Under him are 8 District Directors one for each district of the NEP. They control and coordinate the Health activities in the districts.

Under the Director are also the following sections which cross cut all districts. The District Directors coordinate and facilitate these sections. The sections are

- Dental Services
- Indigenous Medicine
- Special Programmes
- Entomological Unit
- Environmental Unit
- Mobile Medical services, which deals with screening for diseases
- Epidemiological investigation Unit, which investigates and takes corrective measures to prevent the spread of diseases.

The annual expenditure for this service is around 5.5 million Sri Lankan Rupees. Two thirds of the funds are provided by the LTTE and the balance is collected from taxation of food handling establishments. The tax varies from Rs: 1000.00 to 500.00 per year. In return for the contribution from food handling establishments, the TEHS provides free medical examination and issue of certificates, which is a requirement to work in food handling establishments. It also provides free treatment for any infections which they could spread.

Thileepan Health Service

This is an independent wing which deals mainly with curative work. It is presently under a doctor (Elumathy) with over 20-years experience and trained in a recognized medical school. Its services are spread out in the remote areas of the NEP. The Thileepan Health Centres are in 16 locations in the North east of Sri Lanka:

Initially they were started as First Aid centres and later for emergency delivery. Its service was extended and today its services include curative work. Treatment for minor ailments is provided at these centres. Some of the centres have indoor facilities, where patients are admitted. Most of the centres are with labour room facilities to conduct deliveries.

The staff of the Theleepan Health service complements the work in some of the state Hospitals. Some of the Antenatal, Child Welfare Clinics of the state health sector are conducted by the staff of the Theleepan Health service as there is a shortage of doctors in the state health service.

The Tsunami

More recently Tsunami struck Sri Lanka. Initially, 547,509 people were displaced and 23,059 were injured. In this calamity 35,322 people were killed or were missing and 98,000 homes were destroyed[21]. The coastal region of the northeast was the hardest hit region. 35% of the coastal population of Kilinochchi, 80% in Mullaitivu & 78% in Ampara districts were hit, whereas less than 20% of the coastal population in Galle Matara and Hambantota districts were affected[22]. Tsunami had a devastating effect on the people of Jaffna District. In this district 2640 people died, 1647 were injured, 1240 reported missing and 41,000 were initially displaced.

The civil society and administration rose up to the occasion and within 8 hours of the disaster a majority of the survivors in the Jaffna, Kilinochchi and Mullaitivu districts were in temporary accommodations. Probably their experience with man-made disasters during the past two decades had given them the experience to cope with the natural disaster.

A coordinating committee was organized with support from all sectors including the LTTE, and the Tsunami survivors were adequately looked after. This is one disaster situation where there was coordination between the warring parties.

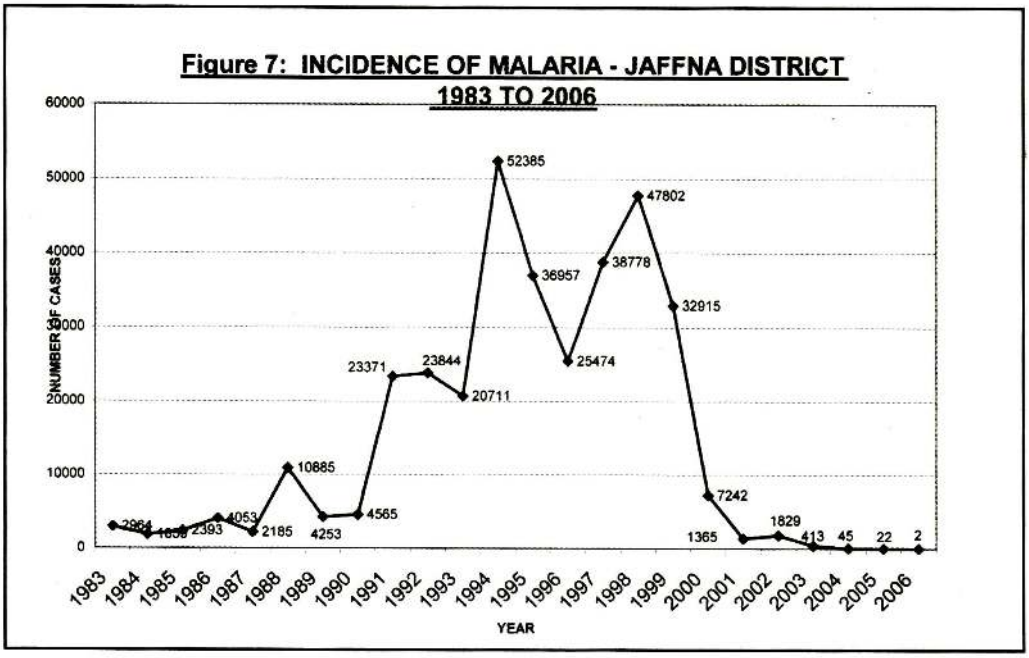
Malaria Control

Although Kilinochchi district was known to be an endemic region for malaria, local transmission within the Jaffna peninsula was not common before the war. Most cases in Jaffna were imported from Kilinochchi or Vavuniya. Elephant pass was closed for traffic to and from Colombo in the early nineties. People started taking alternate routes such as crossing the lagoon initially through Uriyan and Kombadi (East of Elephant pass) and later through Kilai (West of Elephant pass). Travel along these routes necessitated overnight stay in the mainland. The anopheles mosquito being a night biter infected the travellers while in the Wanni, who brought the infection to Jaffna. Gradually, local spread increased and coupled with the embargo on insecticides, and disruption of spraying and entomological surveillance work, led to a massive increase in the incidence of malaria

The incidence of malaria rose to such high levels that the incidence in 1998 in the Jaffna district was 97 per 1000 population. (Figure 7).

In order to control this epidemic 15 persons were trained for one month in the microscopic identification of the malarial parasite. Since they could not be recruited as microscopists, they were designated "Trainee microscopists" and posted to remote Health outposts. Their appointment resulted in early diagnosis and prompt treatment. This helped in the early decline in the cases of malaria. The

subsequent Ceasefire agreement and the availability of insecticides contributed to the decline in malaria incidence in Jaffna.



Immunization of Children

In spite of the war the immunization of children was not affected. The immunization coverage of EPI vaccines was mostly over 90%.

In the nineties, National Immunization Days (NID) was introduced claiming children as "zones of Peace" with a view to eradicate Polio. The 5th & 6th September and 10th & 11th of October, 1997 were observed as "days of tranquillity" and fighting between the Security Forces and LTTE was suspended[23] on these days to enable the Polio immunization of children to be carried out without interruption. Both parties to the conflict respected this arrangement.

The coverage on the NID in 1995 for the Northern Province was 73.7% for the first dose and 62.2% for the second dose. Subsequently, in spite of the war and displacement the immunization coverage increased.

Even though there were periods when electricity was not available, alternative methods were put into operation to maintain the cold chain. In Maruthankerny, the state institution (a rural Hospital) did not have electricity. The health centre of the nearest Thileepan Health Service had a Kerosine operated refrigerator in which vaccines of the Health Ministry was stored. In immunization there was understanding between the health sector and the LTTE.

Maternal and Child care Services

Antenatal and Child care services have been satisfactorily functioning in spite of the shortage of Family Health Officers.

Registration of pregnant mothers and children has been over 90%. Attendance at Antenatal and Child Welfare clinics too, has been high. This could be attributed to the high educational level and health consciousness of the mothers who attend the clinics even though the Family Health Officers do not visit their homes.

However, the recent occurrence of several maternal deaths in Jaffna (7 in 2005 and 5 in 2006) indicates that all is not well. The war has certainly contributed in no small way towards the death of these mothers

Mental Health Services

The armed conflict in Sri Lanka which is over two decades has had devastating effects on the individuals, families and community at large. Children and adolescents have been affected disproportionately. The population has been rendered homeless, displaced several times, have had their education disrupted; their parents separated or snatched away from them and have experienced and witnessed brutality and violence. Most of the adolescents today have been born and reared amidst this war. All these have affected their mental well being and resulted in a society which is aggressive and violent.

Several studies [24] have shown that this war and disaster has affected the fundamental family and community dynamics resulting in changes at a collective level.

The implementation of several programmes by the Health Ministry and the Non-Government and UN Agencies is probably having an effect of slowing down the deterioration of the condition. The reversal will probably take more time.

Conclusion

A single reason cannot be attributed as to why our health indices especially the mortality figures remain within "reasonable" limits in spite of the long drawn out war.

Could it be due to an inherent resilience of the local community?

The health service personnel who have been in the state sector have always been conscious of their obligation to the people in the delivery of their services.

There was understanding and cooperation between the warring factions and Health Ministry staff especially in the Wanni, in implementing several Public Health Programmes at times of war and natural calamities. In the Wanni, they coordinated with staff of the Health Ministry in the implementation of Public

Health programmes such as malaria control, disease surveillance and disease control. They also assisted with human resource wherever there were gaps.

The Local and International Organizations assisted in many ways. Health was on the agenda of most NGOs. Several NGOs supported the training and maintenance of grass root level workers and also in transport of drugs, equipment and nutrition supplements.

Every time calamity stuck the members of the Health profession rose up to the occasion and gave a helping hand to the affected

Because of the combined efforts of every body the people were able to survive.

Although there were bombing, shelling, displacement, restrictions and embargoes on food medicines and health equipment it should be appreciated that the population survived.

I keep always reminded of a plaque on the table of the Director, Jaffna Teaching Hospital which says:

விழாமல் இருப்பதில் எம் மகத்துவம் இருக்கவில்லை,

விழுகின்ற ஒவ்வொரு தடவையும் மீண்டும் எழுந்திருப்பதில்தான் உள்ளது

"Our greatness lies not in never falling down; but in rising up every time we fall"

Acknowledgements

Several persons helped me in the preparation of this document. I wish to thank all of them, especially Prof. P Balasundarampillai who provided me with valuable data, Prof S Sivayogan for his valuable comments, and my wife Aracy for helping with the projections.

I wish to thank you all for your kind presence today and patient hearing.

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Contributions of the American Mission in the Field of Medicine

2

The Tamils in Jaffna have been exclusively using the traditional Siddha & Ayurvedic system of medicine, until foreign occupation. Although the first contacts we Tamils had with western medicine was, through the Portuguese and the Dutch, our real access to western medicine came through the American Mission during the British period.

The Past

The first batch of 5 medically oriented, though not medically qualified missionaries, arrived in the island in 1816. Rev. Daniel Poor, who had undergone a short course in medicine, led this group. On arrival he started a hospital at Tellippalai 'for the cure of both soul & body'. This was the first non –official effort to introduce western medicine into the country. A practicing doctor, Dr. John Scudder, soon followed him.

It was indeed a great privilege to us in Jaffna to have had Dr.John Scudder, described as the world's first medical missionary.

Dr. Scudder arrived in Jaffna on the 17th of December 1819 and started his first dispensary in a thatched hut in Pandaitharippu on 8th June 1820. The only hospitals in the island at that time were the military hospitals, which were of course, out of bounds to civilians.

Dr. Scudder carried out heroic & successful operations in the 1820s – some of them being plastic reconstruction of mutilated ears, above knee amputations, excision of large tumours and even cataract operations. These were stupendous feats during the days when these was no anesthesia, blood transfusions or antibiotics.

In spite of having lost 3 children in 18 months, he & his wife continued to serve in Jaffna for 16 years.

Dr. Scudder left for Madras in 1836 and was succeeded by Dr Jonathan ward who returned to his country in 1847.

Dr Ward was succeeded by Dr. Samuel Green who left a permanent imprint on the history of Medicine & medical Education in this country.

Dr. Samuel Fisk Green sailed from Boston to Madras, crossed the Palk straits and arrived in Jaffna on 5th October 1847.

During his 26 years of stay in this country he left his imprint on almost every aspect of health care.

He was a keen observer, and recorded instances of 'Cancer of mouth as arising from habitual use of quicklime and betel' and declared that the 'wealthy died of diabetes'. To solve the problems of health he decided to stud the province with well educated physicians'.

In 1848, he set up a dispensary at Manipay and organized the mission medical school. He selected 7 students from the Batticota seminary (presently the Jaffna College Vadduccoddai) and started a 3-year course in Medicine. This was the first medical school in the island (or probably in South East Asia) and was stared 22 years before the Colombo medical college and 130 years before the Jaffna Medical School were started. Dr. Green's medical school trained altogether 87 medical practitioners during the 31 years of its existence. These doctors manned most of the hospitals in Jaffna, between 1850 -1907. The medical staff of the Jaffna Friend –in-need society hospital was drawn almost totally from the graduates of Dr.Green's medical school.

Dr.Green was keen in teaching students in the local language (Tamil) in order to make medical education available to a wider group. In fact, out of the 65 students trained up to 1873,33 were trained in the Tamil medium. To facilitate the Tamil medium students, he translated several medical books and journals into Tamil.

Dr. Green had been an able administrator. In 1863, Dr. Green took over the administration of the friend –in-need society Hospital in Jaffna (the present teaching hospital) on the invitation of the then Government Agent, Mr.P.A. Dyke. Although the American mission had no connections with the Friend –in-need society, Dr. Green accepted the post for a trial period of 3 months, but eventually continued for 5 years.

Dr. Green had been a surgical giant of his day. According to his letter, in 13 months he had done over 800 operations, which included amputations, removal of cancers, strangulated hernias and fractures.

When Dr. Green left in 1873 a vacuum was created, the balance students taken over to the Colombo medical school, and the medical school started by Dr. Green was unfortunately closed down.

After a lapse of 20 years, a boost to medical education was given by the arrival of Dr & Mrs. Scott. Mrs.Scott was the first lady doctor to serve in Jaffna. She started the first nursing school at Manipay –nearly 70 years before the present nursing school in Jaffna was established.

While the activities of the Medical Mission, initiated by Dr. Scudder & Dr. Green started waning, two sisters belonging to the American Mission (Mary & Margaret Leitch) who had been in Jaffna since 1880 felt the need for a hospital for women.

In an attempt to fulfill their ambition they resigned from the American Mission in 1890 and joined the Zenna Bible & Medical Mission of London and collected funds to build a hospital. Subsequently in 1896 both the sisters re-joined the American Mission and transferred the hospital project to the American Mission. The hospital was formerly opened in 1898 and named McLeod Hospital after Rev & Mrs. McLeod who contributed a major portion of the fund.

Since then the hospital has essentially served as a maternity and later children's hospital. It was not until the 1970s that males were treated.

The Present

With the handing over of the Jaffna Friend –in-need Hospital to the state, health care and medical education become a part of the state services and the American mission remained dormant in these fields except for the running of the Green memorial hospital at Manipay the McLeod's Hospital at Inuvil and the hospital at Paranthan with its outreach clinics.

These hospitals served the population of Jaffna & Paranthan. The planning, layout & administration of these hospitals (especially those at Manipay & Inuvil) showed a clear recognition and respect for the cultural practices of the local people.

During the period when the Jaffna General Hospital was forced to be closed down as a result of bombing, the Green memorial hospital gave a helping hand by accommodating the hospital within its premises. Subsequently, with the destruction of the Tellippalai District Hospital by bombing it has also been accommodated within the Green memorial hospital premises.

Part of the McLeod hospital at Inuvil is presently housing the MOH Tellippalai and the paramedical training programmes are conducted within its premises.

The mission Hospital at Paranthan housed the Kilinochchi District hospital for a period when it was not possible to function in its premises due to Military operation.

The Future

Presently we are reaching nearer, a situation, which existed at a time when the American Missionaries arrived for the first time and started functioning in Jaffna.

Basic necessities, like electricity, fuel, food, drugs and even soap have been totally or partially prevented by the state from being brought in to the Northern Province.

Several Hospitals have been closed down because they have been bombed due to military operations in the vicinity. Even vaccines do not arrive on time and epidemics of vaccine preventable diseases are likely to occur soon.

Since the state does not seem to show any keen interest in the health of the people in the North East, the time has come, again, for the missionaries, of the American Mission and church of South India to intensify their efforts towards health care in the North Eastern regions of Sri Lanka.

One of the activities could be the starting of outreach clinics and dispensaries in and around areas where the Government Hospitals have been closed down.

Another area where the Missionaries could help is in the training of Paramedical personnel –especially Nurses & Midwives.

Due to certain political decisions and due to the direct and indirect effect of communal violence during the past few decades, there has been a severe shortage of all paramedical personnel – especially nurses & midwives – in the North Eastern regions of Sri Lanka. The shortage is so severe that if the deficit is not filled within a couple of years, the health status of the people of Northeast is going to be severely affected. The recent increase in maternal mortality in the Jaffna peninsula (accurate data for other areas are not available) is an indication of what is in store.

Due to the inadequacies in the state hospitals, most people fall back on private hospitals, which have been staffed by, untrained or inadequately trained staff.

It is estimated that we need a further 700 nurses & 500 midwives to serve the North Eastern Province. The mean annual intake into the nurses Training Schools in Jaffna & Batticoloa is, 110 nurses & 63 midwives.

The Green memorial hospital & McLeod's Hospital have had a long tradition of training nurses & midwives of exceptionally high quality.

Recently one of the nurses trained and working at the Green Memorial Hospital, was presented with the Florence Nightingale award.

With such a remarkable tradition and experience the mission should, during this 175th anniversary, embark on a project to start a Training School for Nurses & Midwives. The Green Memorial Hospital where doctors were trained 150 years ago and nurses were trained 100 years ago could be used as a teaching hospital.

In the present Political climate state approval to sit the state conducted examination, is unlikely and not practical. The envisaged training school should itself evaluate and certify successful candidates.

I hope the foundation for the training school will be laid today. We cannot wait till tomorrow.

[Paper read at the 175th Anniversary Celebration of the arrival of American Missionaries in Jaffna, held on September 23, 1991, at Jaffna College, Vaddukoddai.]

Chairman, members of the family of Dr. Arunasalam Sivapathasundaram, distinguished invitees, colleagues, friends & students.

I sincerely thank the sponsors and the Board of the Faculty of Medicine for having invited me to deliver this oration in memory of the late Dr. Arunasalam Sivapathasundaram who was brutally killed 6 years ago by the Indian Peace Keeping Force, while on duty and within the hospital premises where he saved, the lives of thousands of children of this land.

One of the greatest legacies of any nation is the memory of great man and the inheritance of a great example. Dr. Arunasalam Sivapathasundaram was such a man and it is pleasant to pay tribute to his memory and the examples he set.

My association with Dr. Sivapathasundaram started 10 years ago when I had to take over the co-ordination of the Assistant Medical Practitioners (AMP) Training Program at Point Pedro Hospital. Dr. Sivapathasundaram was the Consultant Pediatrician there at that time. But he was doing most of the day to day Co-ordination of the training program, solving problems as and when they arose. He remained not only a teacher but also a friend and father to the AMP Students. He continued this affection towards the medical students, treating them as his own children, after his transfer to Jaffna Teaching Hospital.

Dr. Sivapathasundaram loved children, not only because his profession demanded, but because he really loved them.

My topic today is "The Nutritional status of our Children", a subject which was near and dear to the heart of Dr. Sivapathasundaram.

1. Introduction

Proper nutrition is essential for every one of us. But it is more so in infancy and childhood.

An adult's need for food can be satisfied by the person himself expect in the case of dire poverty or non availability. In the case of children they have to depend on others to fulfill their need for food. If the provider is ignorant of the child's needs or if he or she is over influenced by culture, tradition or an overpowering elderly relative the child may be starved or over fed.

2. Effects of Under Nutrition in Infancy & Early Childhood

Growth & Development are distinctive biological process of children.

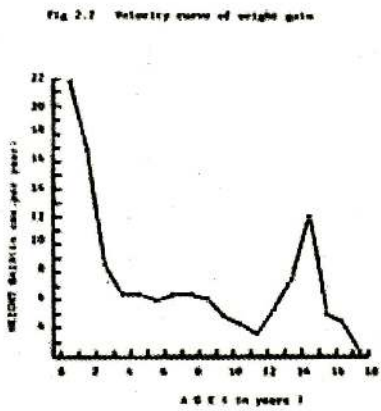
Under -nutrition during intrauterine life, infancy and childhood affects the child's physical, mental and social development and results in a physically, mentally and socially handicapped individual.

Children grow and develop from the moment they are conceived, until they reach adulthood. Growth is a continuous process up to adulthood, and it does not stop for a while and start again.

But the rate of growth varies. The first few months in the mother womb are the fastest period of growth. The first year of his life is the period of next most rapid growth.

After this, his growth rate slows down gradually until puberty. Then he starts to grow fast again until he reaches the adult size at about twenty.

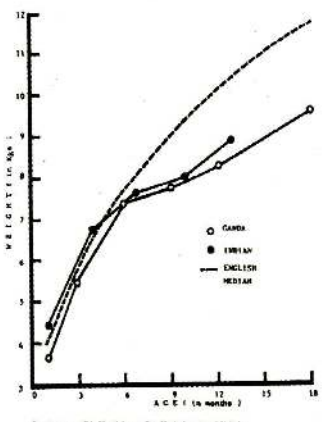
Due to the rapid growth during infancy and childhood a child needs more calories and proteins per unit weight than an adult. At the age of one year a child needs half the quantity of proteins and calories required by an adult. Most adults (including mothers) fail to realize this.



Source : G.J.Ebrahim Paediatric Practice in Developing countries. ELBS and Macmillan 1984. p.73

The growth rate of the different body tissues is given in Fig 2.1

Most part of the growth of the brain occurs during early childhood and reproductive development occurs during the second decade. General body growth is characterized by two phases of rapid growth - one during early childhood and the other during puberty. The two phases of growth are better appreciated if the growth in an individual is charted by increments, by unit of time (velocity curve) shown in fig 2.2.



Source : GJ Ebrahim, Paediatric practice in Developing countries ELBS and Macmillan 1984. p.74

It is evident from this figure that at birth, the rate of growth in height is around 22 cm per year and this gradually comes

down to around 8 cm per year after his second birthday, and remains almost static until puberty. Lack of nutrition during the first 2 years will seriously interfere with the physical and mental growth. During short periods of poor nutrition or illness this rate of growth slows down, but the child undergoes a period of 'catch up' growth and during this period (if adequately fed) the growth rate may be twice the normal for that age until the lost ground has been regained. This compensatory mechanism enables the child to overcome short periods of illness or lack of food. However if the illness or lack of food is prolonged or if it occurs during a very young age the catch up may not be total and leads to stunting.

A number of studies in developing countries have shown that the average newborn is smaller in weight and shorter compared to his counterparts in the developed countries. However, it has been shown that newborn among the upper social classes in developing countries compares well with their counterparts in the developed countries showing that lower birth weight and stunting are more related to socio-economic status rather than due to the influence of race or nationality.

It has been found that when pregnant mothers of the lower socio economic group are provided with food supplements during pregnancy there is significant improvement in birth weight of the new born .*[1].*

It has also been observed that infants born with low birth weight continue to remain small and do not reach the average standards for the community.

All these emphasize the need for good maternal nutrition in the prevention of childhood under nutrition.

The brain is fully developed in terms of number of neurons by about thirteenth week of pregnancy. *[2].*

Recent research in animals and humans suggest that inadequate growth during the periods before and after birth may limit intellectual development [2]. At the time of birth a child's brain is growing at the rate of a milligram a minute. This rapid growth could be achieved only if he receives adequate nutrition.

Studies *[2]* have shown that children under 6 month old and recovering from malnutrition have failed to catch up on their mental age.

All this places the responsibility on us to provide care to the pregnant mother and the child up to 2 years, if we are to expect the next generation to be physically, mentally, socially and spiritually healthy.

3. Nutritional Status of the World's Children

Each day 40,000 children die in this world. Hunger and malnutrition in their different forms contribute to about half of these deaths. According to the UNICEF,

more than 20 million children in the world suffer from severe malnutrition, 150 million are underweight and 350 million women suffer from nutritional anemia *[3]*.

At the world summit for children held at the United Nations on 30th September 1990, all countries (including ours) made a declaration on the survival, protection and development of children.

Among other commitments all countries (including ours) declared that.

1. The well being of children requires actions at the highest level. We are determined to take that action.
2. We ourselves hereby make our sole commitment to give heigh priority to the rights of the children, to their survival and to their protection and development.
3. We will work to ameliorate the plight of millions of children who live under especially difficult circumstances as victims of apartheid and foreign occupation, displaced children, and victims' of natural and man-made disasters.
4. We will work carefully to protect children from the scourge of war and to take measure to prevent further armed conflicts in order to give the children everywhere a peaceful and secure future.

It is unfortunate that most of the governments of the world (including Sri Lanka) have not honored these commitments fully.

4. Nutritional status of children in Sri Lanka

The problem of under nutrition among preschool children of Sri Lanka had been evident to those who worked with children since the 1960s.

The Famine of 1971 and the fuel crisis of 1973 precipitated an acute situation. With the rising food prices the government was forced to withdraw the Rice subsidy which was available since the second world war, from all except those earning less than Rs.500.00 per month.

During this period there was much worldwide focus on malnutrition and in 1971 CARE offered a wheat soya blend (later called Thriposa) to all children who were in grade II & III Protein Calorie Malnutrition (PCM) and all pregnant and lactating mothers.

In 1975/76 the center for Disease Control (CDC) through the United States Health Education and welfare along with the Ministry of Health in Sri Lanka conducted a survey of the nutritional status of preschool children in the 14 districts of Sri Lanka *[4]*. The findings are given in Table 4.1.

Table 4.1: Acutely & chronically under-nourished (in %) children under 5 years by Districts -1975/76

District	% Acutely Undernourished	% Chronically Undernourished
Ratnapura	8.8	37.3
Kandy	8.3	49.6
Batticoloa	8.4	35.5
Galle	8.2	33.3
Matale	7.2	38.9
Kegalle	7.1	39.6
Anuradhapura	6.9	30.7
Kalutara	6.2	26.8
Matara	6.0	29.7
Colombo	4.9	20.7
Vavuniya	3.8	29.6
Badulla	3.8	49.4
Kurunegela	3.7	30.4
Jaffna	3.7	28.4
Puttalam	3.1	24.4
Sri Lanka	6.6	34.7

(Source: Department of Census & Statistics .1978. Sttistical Profile of children -1977 Sri Lanka. Department of Census & Statistics. Colombo. P 37-43)

The survey of 1975/76 showed that in Sri Lanka, 6.6% of the preschool children were suffering from Acute Malnutrition and 34.7% were chronically malnourished. In the Jaffna district the percentage of preschool children suffering from acute malnutrition was 3.7% and chronic malnutrition 28.4%. It is to be noted that Jaffna was the district with very low prevalence of under nutrition. As shown in Table 4.2, Jaffna district also boasted of the lowest Infant Mortality Rate of 21per 1000 live births in 1974.

The latest Sri Lanka Demographic and Health Survey (SLDHS) was carried out in 1987.

As a part of this survey *[5]* anthropometric measurements were carried out on a sample of 2005 children 3-36 months old living in Sri Lanka. Northern & Eastern Provinces were excluded from this survey.

Table 4.2 Infant Mortality Rate Sri Lanka- 1974

Revenue District	Infant Mortality Rate (per 1000 live births)
Nuwara Eliya	78
Badulla	73
Kandy	71
Ratnapura	66
Matale	65
Kegalle	60
Batticaloa	45
Colombo	42
Matara	40
Amparai	39
Kurunegala	38
Anurathapura	36
Hampantota	35
Mannar	34
Trincomaee	32
Moneragala	30
Puttalam	28
Polanaruwa	23
Vavuniya	22
Jaffna	21

(Source: Department of Census & Statistics .1978. Sttistical Profile of children -1977 Sri Lanka. Department of Census & Statistics. Colombo. P 37-43)

The prevalence of acute malnutrition (weight for height less than -2SD of NCHS/CDC/WHO reference population) in the seven zones is given in Table 4.3

Table 4.3: Distribution of Acute & Chronic Malnutrition (in %) by Zones
(Among children 3-36 months.)

Zone Number	Zone Area	Acute Malnutrition(wasting)	Chronic (Stunting)
1	Colombo metropolitan area	13.4	21.8
2	Colombo feeder areas	11.0	18.9
3	South western Coastal lowlands	12.3	22.2
4	Lower South Central Hill Country	15.5	21.9
5	South central Hill Country	9.9	42.1
6	Irrigated Dry Zone	11.9	42.1
7	Rain fed Dry zone	16.8	30.9
8	Eastern Coastal Belt	-not included in survey-	-
9	Northern Province	-not included in survey-	-
	All children	12.9	27.5

In Sri Lanka 12.9% of the children were wasted and 27.5% were stunted.

The prevalence of acute malnutrition (wasting) varied from 18.9% to 42.1%.

27.5% of the children were stunted (-2SD or more below the median weight for age of the reference population). All these children are stunted or chronically malnourished. This study showed that between 3 months and 36 months the children become progressively more stunted.

Zone 5 where many of the estates are located had the lowest proportion of acutely malnourished children and highest proportion of chronically malnourished children. The lower proportion of acutely malnourished children is partly because of higher proportion of chronically malnourished children. Many of these stunted children will appear to have a normal relationship between body lengths when age is not considered. For example a stunted three old child will have the appearance of a healthy 2 year old child when only weight for height is considered.

Sixty percent of the children on the estates were chronically undernourished. This is more than twice that found in rural area outside the estates and about 3 times higher than those in the urban sector.*[5]*

5. Nutritional status of the children of Jaffna

Since the island wide nutritional survey of 1975/76 showed that the nutritional status of the children of Jaffna was very good compared to the rest of the country not much attention was directed towards under-nutrition among children.

It was only after the 'war' escalated and refugee camps were set up that our thoughts turned towards the possibilities of under-nutrition. Studies carried out in early 1992 among 360 children living in a refugee camp at Ketpali showed that 6.8% of the children were acutely malnourished *[6.7]*. The medical officer of health Jaffna also reported higher prevalence of malnutrition among children attending his clinics and in the Refugee camps *[7]*. He also reported that almost all the pregnant mothers were anemic.

A family health worker in the Manipay health area [8] carried out a study among children in a refugee camp and in a nearby village, and found that moderate under-nutrition was equally higher in the refugee camp and the village. Severe under nutrition was more prevalent among children in refugee camps. Among inmates of refugee camps, the prevalence of severe malnutrition varied with the place from where they were displaced.

Everyone in the field of rehabilitation was interested in knowing the actual situation. At a meeting of NGOs and other officials held on 18th December 1992 and chaired by the Vice-chancellor of the University of Jaffna, Prof. A. Thurairajah it was decided to conduct a nutritional survey of the children in the Jaffna district.

It was a major challenge, especially at a time when the Sri Lanka Demographic Health survey could not be carried out in Jaffna by the Department of Census and Statistics. Amidst the several constraints, the challenge was taken.

It was estimated that there would be about 60,000 children aged less than 36 months living in the Jaffna district. Using multistage cluster sampling of the 155 PHMs' areas, and cluster sampling of the 188 refugee camps, 2187 children were selected. Out of them, 2045 children were examined (Response rate 93.3%)

During the past, nutritional status of the children was frequently assessed using a classification based on deficit in weight for age originally proposed by Gomez and modified by Jeliffe. This was used in the growth charts issued to our children.

Subsequently, the Eighth joint FAO/WHO Expert committee on nutrition *[9]* emphasized the importance of distinguishing between acute and chronic malnutrition or present or past under-nutrition. Following this the FAO/UNICEF/ WHO expert committee on Nutritional surveillance *[10]* recommended the use of the height for age and weight for height as primary indicators of nutritional status of children.

JC Water low et al *[11]* recommended data collected by the United States National Academy of Sciences and available with the United States National Center for Health Statistics (US NCHS) as the international reference data. This was accepted by the WHO.

Considering the above recommendations, in the above study, under-nutrition was classified as

1. Chronic under nutrition when the height for age was less than -2SD from the median of the NCHS/WHO reference population.
2. Acute under nutrition when weight for height was less than -2SD from the median of the NCHS/WHO reference population
3. Low weight for age was also estimated because this is the common criteria used in our clinics by family health workers using the growth charts.

The Jaffna District Nutrition Survey-1993[12] showed that

- 31.4% of the children were chronically undernourished (stunted)
- 18.9% of the children were acutely undernourished (or wasted)
- 40.05 of the children were underweight for their age

The prevalence of acute and chronic malnutrition according to the Sri Lanka Nutritional Status survey (1975/76), the Sri Lanka Demographic and health survey (1987), and the Jaffna district Nutrition survey -1993 are given in Table 5.1.

Table 5.1: Comparison of Nutritional status of children (in %) between 1975/76,1987& 1993

	*1975/76	#1987	#1993	Percentage (increase+) (decrease-)
Chronic Malnutrition Sri Lanka	34.7	27.5	n.a	-20.7
Jaffna district	28.4	n.a	31.4	+10.6
Acute Malnutrition Sri Lanka	6.6	12.9	n.a	+92.4
Jaffna District	3.7	n.a	18.9	+410.0

**% weight for age < 75% of NAS reference population.*

#% below-2SD of the median of NCHS/WHO reference population

n.a : data not available

Source: 1975/76 data: Sri Lanka Nutritional status survey (sept. 1975 - March 1976) in Statistical profile of children 1997. Sri Lanka Department of Census & Statistical profile of children 1997. Sri Lanka Department of Census & statistics Colombo 1978:38

1987 data: Sri Lanka Demographic and health survey 1987. Ministry of plan implementation Colombo 1988.

In Jaffna During the past decade chronic malnutrition has increased by 10.6% while in the rest of the country it has decreased by 20.7%. The rise in the prevalence of Acute under nutrition is alarming it has increased by over 410.0% in Jaffna district while in the rest of Sri Lanka it has increased only by 92.4%

Table 5.2: Prevalence (in %) of Symptoms of vitamin A & B deficiency in Jaffna District

Symptoms	*1975/76	1993
Bitot spot	0.4	12.1
Night Blindness	0.6	0.6
Hyperkeratosia	n.a	1.8
Angular stomatis	n.a	9.1

n.a- Not available

(Source Sri Lanka Nutritional Status survey (Sept. 1975 - March 1976) in Statistical Profile of children-1977. Sri Lanka. Department of Census & Statistics Colombo 1978.& Sivarajah N. Jaffna District Nutrition Survey 1993)

Under Nutrition by Sex

There was no difference in the level of under-nutrition between boys and girls.

Under Nutrition by Age

The distribution of under-nutrition by age is given in Table 5.3. The prevalence of Acute and chronic under-nutrition is seen to increase after the 1st birthday. Among the 2 year old half the children are stunted and a quarter of them are wasted.

Table 5.3: Prevalence of Under Nutrition (in %) by age in Jaffna District

Age (in months)	Chronic Under nutrition	Acute Under nutrition
Under 12	9.3	5.8
12-23	33.4	25.6
24-35	50.2	25.2
All group	31.4	18.9

(Source- Sivarajah N.Jaffna District Nutrition Survey 1993)

Displacement

The prevalence of under-nutrition by place of residence at the time of examination is given in Table 5.4.

Table 5.4: Prevalence of under Nutrition (in %) by place of residence

Place of residency	Chronic under nutrition	Acute under nutrition
Refugee camp	44.6	22.0
Village (displaced)	27.7	16.0
Village (not displaced)	27.8	18.4
All section	31.4	18.9

(Source: Sivarajah N. Jaffna District Nutrition survey 1993)

The prevalence of chronic and acute under-nutrition is much higher among children in the refugee camps than among the children in the village. Among the children in the village there is no significant difference between the displaced and not displaced.

Table 5.5 gives the prevalence of under-nutrition by period of displacement. It is evident that the prevalence of under-nutrition increase with period of displacement.

Table 5.5: Prevalence of under nutrition (in %) by of displacement

Period of displacement (in months)	Chronic Under-nutrition	Acute Under-nutrition
Not displaced	28.0	18.6
Less than 6	27.9	9.8
6-11	26.0	19.1
12-23	46.8	24.3
24+	52.3	26.6
Total population	31.4	18.9

(Source: Sivarajah N. Jaffna District Nutrition Survey 1993)

Birth Weight

The birth weight appears to have significant effect on the later development of under-nutrition. Table 5.6 gives the prevalence of under nutrition among normal & lower birth weight

Among the low birth weight babies, 44.9% were chronically under-nourished.

Table 5.6: Prevalence of under-nutrition (in %) by birth weight

Birth weight (in grams)	Chronic Under-nutrition	Acute Under-nutrition
<2500	44.9	30.8
2500 +	23.5	15.5
Not known	45.3	20.9
All children	31.4	18.9

Among the children born in 1990, 17.9% were of low birth weight while 20.0% of the children born in 1991 and 19.1% of the children born 1992 were of low birth weight, showing a steady increase in the incidence of low birth weight.

Studies carried out in Sri Lanka on the incidence of LBW are given in Table 6.5.

Table 6.5: Incidence of low Birth Weight (LBW)

Place of study (year)	Study Population	Incidence of L.B.W. (%)
*G.H.Galle (Jan-Feb. 1989)	506 singletons	24.3
*G.H.Anuradhapura (June-Aug. 1989)	454 singletons	28.0
*G.H. Batticiloa (April-June. 1989)	487 single tons	20.5
*G.H Badulla (Oct.-Dec. 1989)	441	25.2
#G.H Jaffna (Oct-Dec. 1989)	n.a	19.0
#G>H>>Jaffna (Oct-Dec.1991)	n.a	23.0
**Jaffna District (Children born in 1990-1992)	2045	19.0

*Source: *UNICEF .children and women in Sri Lanka –A Situation analysis. Colombo 1991. p.58*

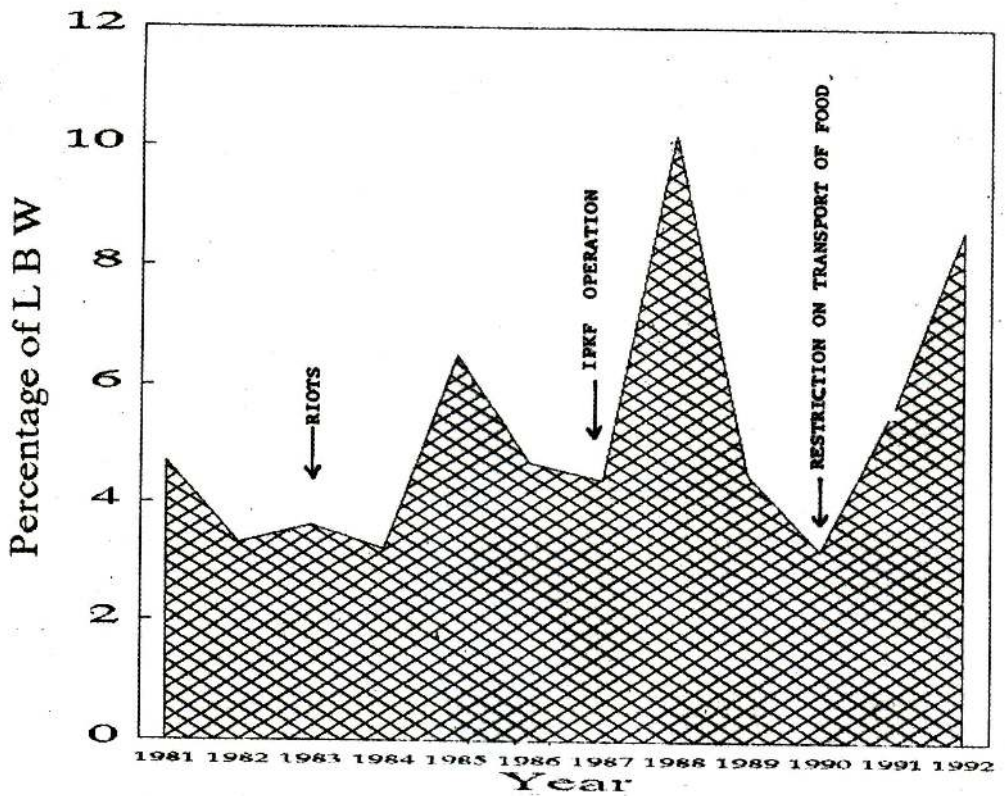
 # Sivarajah N. Nutritional status of the people of Jaffna district 1992 Council of NGOs-Jaffna 1992.

*** Sivarajah N Jaffna District Nutrition Survey 1993. (19)*

The percentage of LBW of babies born at General Hospital, Jaffna low compared to other parts of Sri Lanka but the trend is disturbing. At General Hospital, Jaffna between 1989& 1991 the percentage LBW increased by 21.1%.

The incidence of low birth weight in the Jaffna University Field project area (Kokuvil-Kondavil community Health project area) is recorded since 1981. The incidence of low birth weight is generally lower in this area but peaks are seen after the riots of 1983, operation by the Indian Peace Keeping Force (IPKF) in 1987 and a steady rise after the restriction on the transport of food into the North in 1990.

Fig 5.1: Incidence of Low Birth Weight in University Field Project area (KKCHP area). 1981 to 1992



Educational Level of Mother

Prevalence of under nutrition by educational level of mother is given in table

Table 5.7 Prevalence of under nutrition (in %) By Educational level of mother

Educational level	Chronic Under nutrition	Acute Under nutrition
No schooling	41.5	28.1
1-05 year	39.7	20.7
6-11 year	25.9	17.6
12 years and over	7.0	10.0
Not known	27.3	18.2
All sections	31.4	18.9

Source: Sivarajah N Jaffna District Nutrition Survey 1993

Two out of every five children born to mothers who have had no schooling or studied up to a maximum of 5 years are stunted. One out of four children born to such mothers is wasted.

Family Income

The distribution of under nutrition by family income Is given in Table 5.8

Table 5.8: Prevalence of under-nutrition (in %) by family income

Income (in SLR)	Chronic under nutrition	Acute Under nutrition
Less than 1500	31.7	19.8
1500-2999	31.3	17.6
3000-4499	26.9	21.5
4500+	12.9	9.7
All section	31.4	18.9

Source: Sivarajah N. Jaffna District Nutrition Survey 1993

There is decrease in prevalence of chronic and acute under-nutrition with increased family income. But the decrease is evident only in those whose monthly income is Rs.4500.00 and above.

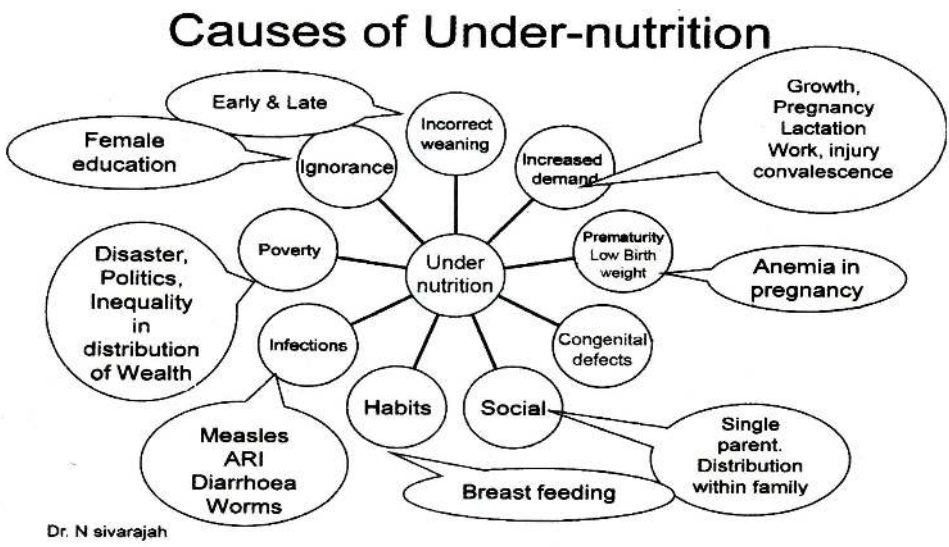
6. The Causes of Under-nutrition

The cause of under nutrition is multi-factorial.

For some parents the task of feeding their children adequately is made impossible by absolute poverty. But much of the malnutrition among children is found in families where adequate food is available. In such cases of malnutrition it is mainly due to ignorance of the special dietary needs of children, adherence to cultural beliefs and practices which are detrimental to the nutrition of the child and lactating mother, and the lack of safe water and sanitation.

The causes of under nutrition are given in figure 6.1. I will touch on only a few important causes which are more relevant to the children of Jaffna in the present situation.

Fig. 6.1: Causes of Malnutrition



Poverty

Child under-nutrition due to absolute poverty was rare a few years ago. But during the past few years this category has increased. UNICEF estimated in 1991 that 45.8% of the population of the north-east Sri Lanka is displaced. In Jaffna a large proportion of the families who lived in the Island and coastal areas have been displaced. Some of them are living in refugee camps for several years. The Government estimated that Rs.459.00 worth of rations per month is necessary for an emergency maintenance level of 1800 calories per day per persons. The rations now being provided is up to a maximum of Rs.180.00 per persons per month. This would supply only 1/3 of the needs of an individual *[13]*.

In addition, displaced persons have been deprived of their traditional employment and are presently unemployed or under–employed.

As a result, absolute poverty among the lower socio-economic level is on the increase and the incomes of self employed persons have dropped. If the trend is not arrested, we will have more and more cases of absolute poverty.

A recent study of the history of severely malnourished children admitted to the Nutrition Rehabilitation center (NRC) in the University Field Project area *[14]* showed that 21.7% of the fathers were incapable of supporting the family, 80% were addicted to liquor. One third of the mothers had married during their teens. Two-thirds of the families from which the children came did not have basic sanitary facilities.

Breast Feeding

Both, failure to commence breast feeding early and continuation of 'Breast milk only' after 6 month of age, leads to under-nutrition among children.

Changing social and cultural patterns, due to mixing of traditions with western life styles, have contributed towards the increasing reliance on bottle feeding. Employment of women outside home, implied limitation on their activities, fear of failure of lactation, lack of knowledge of techniques of breast feeding fear of loss of physical attractiveness due to weight gain and loss of breast tone, have all contributed towards the decrease in incidence of breast feeding.

Most mothers attribute the commencement of bottle feeding to 'lack of milk' described by some workers *[15]* as 'no milk syndrome'. The lack of milk may be due to poor nutrition of the mother, ignorance or as a result of some cultural practices. Often the 'no milk syndrome ' is used by mothers to justify the introduction of powdered milk, and this often take place under the very nose of the health personnel in the medical institutions. At the commencement of bottle feeding most mothers are unaware of the economic and health hazards and the deprivation of the psychological needs of the child.

A mother starts secreting milk a few hours after delivery and it takes about one week for lactation to be established in full. The average daily secretion and composition of the milk varies with the fluid and food intake of the mother. However approximately 650ml of mil is secreted daily, which is sufficient for the baby up to 6 months.

A daily intake of at least 2000 ml of fluids is essential for adequate milk secretion and satisfies the daily requirement of the mother. But traditionally it is believed that intakes of water after partus will cause enlargement of the abdomen, delayed involution of uterus and diarrhea.

The preliminary data collected in a study presently being conducted in the university project area of Kokuvil-Kondavil *[16]* indicates that the mean daily consumption of fluids during the post-partum period is around 900ml (range 175 ml to 3300 ml)

In fact we have noticed that the mothers (and some time the breast fed infants) develop loose motions when they take water. But the cause of this loose motion appears to be the excess "kayam" and "sarakku" which the mothers take during their post parturn period.

"kayam" is made by grinding, cumin seeds, turmeric, pepper, ginger and dry ginger and garlic.

"Sarakku"is made by grinding coriander, cumin seeds, garlic, pepper, turmeric, ginger & or dry ginger in to a paste and adding this paste into the curries taken by the mothers.

The mean quantity of each ingredient used, in a study presently in progress in the Kokuvil area, is given in tables 6.1 and 6.2." Kayam" was used by 28 out of 38 post-partum mothers interviewed.

Table 6.1: Composition of 'Kayam' taken once a day y Post-partum mothers in the University Field Health project area

Ingredient	Quantity taken (in grams) mean	Range	Mean Iron content (in mg)
Cumin seeds	10.9	1.8-23.2	3.4
Garlic	13.9	3.7-48.5	0.2
Pepper	2.2	0.4-21.0	0.4
Turmeric	4.2	0.5-15.5	0.6
Ginger	3.4	0.5-12.8	0.1
Dry ginger	2.6	0.4-12.9	-
Total iron content			**4.7**

Table 6.2: Composition of 'Sarakku' taken for one meal by post-partum mothers in the University Field Project area (Quantity taken in grams)

Ingredients	Mean (in Grms)	Range	Iron Content (in mg)
Coriander	14.3	2.5-36.5	2.6
Cumin seeds	13.1	2.5-29.1	4.1
Garlic	17.2	7.3 -54.8	0.2
Pepper	2.1	0.6-5.6	0.4
Turmeric	4.1	1.1-14.9	0.6
Ginger	2.0	0.6-6.6	0.1
Dry ginger	2.1	0.3-7.8	
Total iron content			**8.0**

The medical value of 'kayam' and 'sarakku' is not clear. But the nutritional value is high – especially as regards iron content. A day's mean intake of 'Kayam' & Sarakku' supplies a third of the mother's daily requirement of iron.

The consumption of 'sarakku' should be encouraged, since most of the mothers are anemic, but the danger is that of taking in excess. 'Sarakku' may lead to loose motion when water is consumed. A minimum amount of 'sarakku' with plenty of water should be encouraged.

Another practice which interferes with breast feeding is the introduction of the feeding bottle immediately after delivery to give water (and sometimes powered milk). Suckling of the breast by the infant initiates an important reflex which leads to secretion and 'let down' of milk. When the bottle is introduced there is decreased suckling leading to diminished secretion of milk and eventually milk secretion dries up. Further, the mechanism involved in suckling from the breast is different to that of taking milk through a rubber teat. Alternate breast feeds and bottle feeds confuse the baby and will make the baby to cry when put on the breast, and gulp the milk when put on the bottle - there by creating an impression in the mother that she has 'no milk'

Today it has become fashionable to include feeding bottle in the itinerary of things to be taken to hospital by a pregnant mother. This creates a feeling in the mother that 'feeding bottle' is superior to the breast. In fact most mothers feel that a feeding bottle is as important as a baby shirt or nappies.

Some medical personal have been guilty of promoting bottle feeding by prescribing artificial milk too readily on a flimsy assumption of 'lactation failure'

We have had mothers who have been humiliated by health personal in maternity wards for not having brought a feeding bottle and milk powder. To avoid abuse of the health staff, some mothers take the bottle and milk powder to hospital when they go for delivery.

A case of severely malnourished child of a laborer who was on a very expensive brand of milk powder (SMA) reported to our clinic. The milk was prescribed by a doctor. A month supply of this brand of milk powder would cost the father one-third to half of his monthly income. The mother could not afford this. So she was giving one tin of the milk powder for 3 months. Normally this tin would have lasted for 4 days. The doctor probably, in good faith, prescribed the best available milk powder but failed to check whether the mother could afford it.

I am not trying to make a case to prove that all these health personnel are 'bribed' by the multinational companies to promote their products. I am only trying to impress on you that there is something going wrong and we must endeavor to correct it.

On the other side of the scale we have mothers, usually from the upper or middle class families who over feed their babies by bottle feeding, which results in obesity- this too is malnutrition. Higher concentrations (than what is prescribed) are given by some mothers in the hope that is better for the child. The hypertonic milk will cause thirst and the child would cry and when this occurs the mother will give more and more hypertonic milk which would eventually lead to obesity and its sequelae.

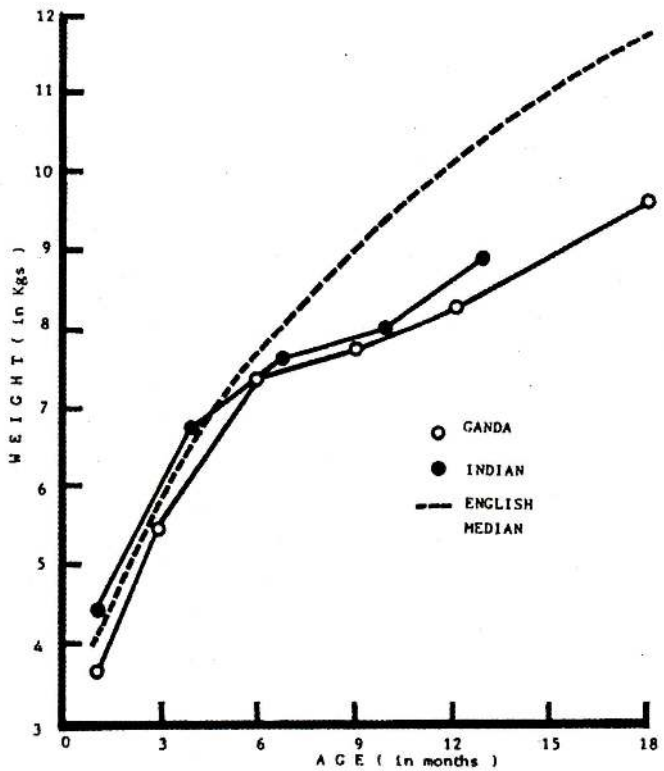
Weaning

Breast milk or any infant milk powder could provide nutrition only up to 6 months of age. Beyond this period the child has to take additional food for the continuation of its normal growth.

In our society although traditionally a child is introduced to rice at 6 or 7 months, regular feeding with rice takes several months to be established. Other weaning foods are not given until rice is given on a regular basic. As a result weaning is delayed.

A comparison of weights of children in the United Kingdom, India and Africa are given in Figure 6.2.

Figure 6.2: A comparison of weights of children in the United Kingdom, India and Africa



Source : GJ Ebrahim, Paediatric practice in Developing countries ELBS and Macmillan 1984. p.74

The velocity of growth of Indian & African Children remains identical to the children in UK, until around six months. Then the velocity of growth deviates.

Towards the end of the 2nd year and during the 3rd year, the growth rate is again the same as in the affluent counties.

But the lost ground is never recovered so that the child remains stunted and much below the expected weight for his age. [1].

This trend which is commonly seen is Jaffna, is attributable to the practice of late weaning.

Worm Infestation

Infestation which hookworm, round worm, thread worm and whip worm is common among children. Table 6.3 shows the prevalence of worm infestation among children in several studies.

Table 6.3: Prevalence of Intestinal Parasitic Infestation of children in Jaffna & Colombo

Study area	% children infested
Jaffna municipality	50 %
Kokuvil-Kondavil University Health Project area	64.2 %
Colombo (University Health Project area)	50.2 %

Over 50%of the children are infested with one or more types of intestinal helminthes.

Studies carried out in Kokuvil-Kondavil [17] showed that even after complete treatment 38.7% of children are re-infested at two months and 75.8% at 5 months.

Infectious Diseases

It has been shown that in addition to worm infestation, infection of the gastrointestinal intestinal tract and respiratory tract are associated with severe malnutrition.

Infectious diseases of childhood, like neonatal Tetanus, Tuberculosis, Diphtheria, Whooping Cough and Poliomyelitis have been brought under control by immunization. However measles, which is a major disease contributing towards the prevalence of under-nutrition has not been brought under control to the same extent as other EPI diseases.

Ignorance

The literacy rate of the people of Jaffna is comparatively high and female education is good. Among the lower socioeconomic class, it is seen that female have had more years of schooling than males. However the adherence to health related practices is poor. There is an overpowering influence of culture and tradition,

which suppresses the influence of education and prevents attitudinal changes.

Mothers are aware that milk is the best food for infants and restriction of water reduces milk secretion. But they are unable to break away from tradition and drink extra fluids.

Low Birth Weight

The recent study in Jaffna *[12]* (Nutritional survevy'93) showed that 30.8% of the children born with a weight of less than 2500 grams were acutely malnourished (wasted) and 44.9% were chronically malnourished (stunted).

A low birth weight child (weighing less than 2500 grams at birth) faces an uphill battle for survival form the time of its birth. It arrives without adequate resistance to infection, in to a hostile environment full of disease producing bacteria. In addition the mother is poorly educated and herself malnourished. There is usually failure of lactation resulting in diminished prospects of acquiring immunity through Breast milk and increased chances of infection. They develop severe malnutrition and often die having succumbed to diarrhea or acute respiratory infections.

The commonest cause of low birth weight is maternal under-nutrition.

Traditional Healers

For thousands of years mankind has employed a variety of ways of dealing with ill-health. In all societies there have been remedies and people to advise and carry out these remedies. In contrast to "western" medicine the traditional healer involves the family and the parent's circle of friends and relations in both treatment of disease and responsibility. They treat the body, mind and social relation as an indivisible unit. The advice of traditional healers is valued because they are offered in terms that patients can understand and in the context of cultural values and practices that are shared by the patients and healers alike.

In the treatment of malnutrition the traditional healers play a vital role. Most parents of malnourished children do not agree that the condition of their child is due to poor nutrition. They place more belief in the traditional healers explanations of the condition as due to bad planetary position in the horoscope, a toad having jumped over the mother during pregnancy or over the infant and treatment such as tying talisman around the neck, waist or wrist, or "Thongal parthal" are usually prescribed and carried out, according to the particular type of healer to whom the child is taken. These types of healers usually delay the nutritional rehabilitation of the child.

A study of 60 mothers and children admitted to the Nutrition Rehabilitation Center (NRC) at Kokuvil [13] showed that 90% of mothers believe in at least one

of the traditional healing procedures for under-nutrition and in fact 81% of them had practiced one or more of these methods before being admitted.

7. Prevention and Management of Malnutrition among Children

The target of the WHO has been to reduce malnutrition by 50% and reduce LBW to 10%. To achieve anything nearer this target we have to act fast and with determination.

The most important aspect of the management of the problem of malnutrition is prevention. Prevention will involve the analysis of the root causes of malnutrition and its eradication.

General measures in the prevention of malnutrition will necessitate a political commitment and determination by those in authority.

A food and nutrition policy has to be established where priorities should be given to cultivation, manufacture, transport, and distribution of food, with high protein and energy value, and food with high Vitamin A, and iron content – the lack of which is the major cause leading to malnutrition among our children.

More emphasis and assistance should be given to the cultivation and manufacture of food made of gingerly or ground nut, which have been a culturally acceptable food and now replaced with toffees and sweets. Cultivation of soya, which is a high protein legume, should be encourage and assisted. Since soya has not been part of our "menu", the acceptability we have to bring in the modern processing technologies together with mass education.

Fundamental nutrition education is also an important weapon in combating malnutrition. Applied and practical nutrition should be in the school curriculum from the primary school upwards. Nutrition education should be part and parcel of education – especially female education.

Malnutrition is commoner among the less privileged groups in our society. Hence socio -economic measures should be directed towards these groups.

Other general measures to combat malnutrition should be raising the age of marriage for girls, spacing births, encouraging increased participation (especially married middle aged women) in health and welfare programmes and improvement of environmental sanitation.

It is through such broad - based multipronged attack on malnutrition, rather than isolated feeding programs can sustainable improvements to the nutritional status be achieved. This is not to argue against all supplementary feeding programmes which under certain circumstances - like the one we are in at present - are life saving.

In order to carry out most of the programs to combat malnutrition among mothers and children, grass root level health workers are an absolute necessity. In our country this category of health worker is the Public Health Midwife (or Family Health Worker) and she is in short supply - not because there aren't anyone to do the job but because of lack of recruitment and training. The number of field PHMs needed for the Jaffna district is 333. Only 25% of the numbers are available. Another 7.2% of the vacancies are filled by workers with training for 3 months and paid by an NGO.

160 PHMs have been trained in Jaffna since 1988. Those trained are barely sufficient to replace those who retire or leave the services. At the present rate of training it will take 10 years to fill the vacancies in Jaffna alone.

Specific measures in the prevention of malnutrition could be dealt under

- Health Promotion
- Health Protection
- Treatment and Rehabilitation

1. Health Promotional Activities :

1.1 Antenatal and Postnatal Care: As seen in the Jaffna District Nutritional Survey - 1993, a child with low birth weight runs twice the risk of developing under nutrition than a child of normal birth weight.

A major factor which contributes to birth of low birth weight babies is anaemia of the mother during pregnancy. All anemic mothers should be detected early in pregnancy and actively corrected. Depending on oral iron therapy and Health Education alone cannot be expected to improve the nutritional state of the fetus although health education has a very important role to play in preventing anemia.

Provision of supplementary, food to pregnant mothers in the form of 'Thriposha' or other locally manufactured high protein mixes will also help. The supply of 'Thriposha' to Jaffna has been very irregular during the past few years. According to reports from the Regional Director of Health Services, Jaffna, barely 10% of the annual requirement of Thriposha reaches Jaffna.

1.2 Promotion of Breast Feeding: There has been a decline in breast feeding worldwide including Jaffna, and bottle feeding has contributed to much of the infant mortality and under nutrition

Breast Feeding should be actively promoted and use of the bottle totally discouraged. All health educational programs should carry this message

Education should also be directed towards increase intake of water after partus, as restriction of water after partus is an important cause of the 'No milk syndrome'

1.3 ***Re Introduction of traditional weaning food:*** We have several low cost weaning foods which had been used by our mothers. These have been pushed to the rear with the arrival of important weaning food like 'Nestum', Farlene, and 'Farex'. Advertisement and attractive containers have lured the mothers (including professionals) into abandoning the traditional weaning food. Some common mixes of cereals, pulses and oils used are 'muttai maa' (made of rice flour, black gram, egg,& gingerly oil) 'Ulutham Kali' (made rice flour, black gram, coconut & sugar or jaggery) have high proportion of proteins and vitamins.

1.4 ***Birth spacing:*** It has been noted [14] that in Sri Lanka after the 3rd Pregnancy the maternal resources are depleted and the problem of low birth weight increases. To avoid this, birth spacing between pregnancies is essential giving the body time to replenish the depleted resources.

2. Health Protection:

2.1 ***Age appropriate immunization*** of all children against common diseases of children, like TB, whooping cough, Diphtheria, Poliomyelitis, and especially Measles will help in the prevention of malnutrition. Measles is a crippling disease as far as malnutrition in concerned. In most cases it precedes Marasmus or Kwashiorkor . When measles affects a child animal protein becomes a taboo to the entire family. Usually measles affects several children in the household and this results in the household including the convalescing child being deprived of animal protein for several weeks.

3. Treatment & Rehabilitation

3.1 ***Surveillance of population at risk*** and treatment of infections and intestinal worm infestations. Since it has been shown that respiratory infections, worm infestation, and gastroenteritis are associated with serve forms of malnutrition it is essential that the age appropriate immunization program is carried out without interruption and children at risk are kept under surveillance and appropriate action taken when evidence of malnutrition occurs. Growth monitoring using the growth chart should be effectively carried out.

It is questionable whether regular de worming of children is advisable. But certainly, treatment of worm infestation when confirmed or suspected is mandatory.

3.2 Programmes for early rehydration of children with diarrhoea: Diarrhea is a common illness among children and one of the major causes of death among them. Death and disability is essentially due to dehydration. Diarrhea sets in motion a vicious cycle which leads to under nutrition. Prevention of diarrhea will result only with improvements in general sanitation and personal hygiene. But until such time, prevention of dehydration of children with diarrhea will go a long way in the prevention of under-nutrition. One well tested and effective method is the use oral Rehydration Salt (ORS) solution. Marketing of ORS should be effectively carried out, so that, it is available for sale at reasonable price in every small boutique which sells 'Panadol'.

3.3 Supplementary Feeding Programmes: for moderately malnourished children is a useful method of preventing the children getting into severe malnutrition. This is an important tool especially during famine, disaster and war.

Such programmes should be organized in such a way that the supplementary food reaches the malnourished child and not shared by all the family members

Some supplementary feeding programmes carried out in Jaffna in the recent past by NGOs have failed to achieve their objective because although they were supposed to be supplementary feeding programmes , in fact instead of being a supplementary meal it only replaced the child's breakfast or lunch or sometimes both. When supplying supplementary food to target groups, the criteria for selection should not be, solely the nutrition value of the food stuff. The acceptance of the target group should be considered. The supply of Gingerly seed balls or Ground nut cakes may be more acceptable to school children and contain more of the deficient nutrients than the buns which were supplied.

3.4 Nutrition Rehabilitation Center (NRC): The concept of Nutrition Rehabilitation Centers was first introduced in Mexico by Bengoa, where severely malnourished children were admitted and provided with intensive therapeutic feeding. The NRC coordinated with the Pediatric Hospital and child welfare clinics. The mothers were trained in the process of preparation and feeding of children and prevention of cross infection at low cost.

Several studies have shown that severely malnourished children followed up after treatment in hospitals for malnutrition, do not fare well. A study in Colombo [14] showed that out of 100 severely malnourished children followed up at clinics only 50% showed improvement after 14 months.

In situations where acute malnutrition is prevalent (as in ours) it is essential that active feeding is carried out and such feeding is possible only in a residential feeding center. During a one year period in an NRC established within the University Field Project Area, 140 children were provided therapeutic feeding. An evaluation of its effectiveness [18] showed that 58.8% of children showed considerable improvement in their nutritional status.

The median duration of stay was 19.5 days (Mean 27.5 days. Range 2-108 days). The average cost of child was Rs. 2,000.00

The study also showed that the NRC was more effective in the management of acute malnutrition where there was a deficit of weight for height

Since there are at least 4000 children in Jaffna in this category who need therapeutic feeding more NRCs should be opened up in Jaffna. However it is necessary to caution that NRC should only be a temporary measure to tide over the present crisis. The more important measures are the preventive measures.

This memorial lecture will not be complete without quoting the words of Gabriella Mistral, the noble prize winner from Chile, who has summarized what I have said in the following words.

HIS NAME IS TODAY

We are guilty of many errors and faults
But our worst crime
is abandoning the children
neglecting the fountain of life.
Many of the things we need
can wait
The child cannot
Right now is the time
His bones are being formed
His blood is being made
And his senses are being developed
To him we cannot answer 'tomorrow'
His name is **TODAY**

Gabriella Mistral
Winner of the Nobel Prize for the Poetry

8. Acknowledgment

I wish to thank the medical students who assisted me in collecting and compiling the data and Malathy Thiagarajah for typing the script.

I must also thank my wife Aracy for patiently preparing the transparencies and projecting them for me today.

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(Dr. Arunasalam Sivapathasundaram Memorial Lecture Delivered at Kailasapathy Auditorium, University of Jaffna, on December 03, 1993 on the "Nutritional Status of our children")

Dr. Samuel Fisk Green's Contribution to Medical Education

4

Today we are honoring a man who lived with us, and contributed to medical education in a great way, a century and a half ago.

Dr.Samuel Fisk Green, was born in Massachusetts in 1822. He graduated from the college of physicians and Surgeons of New York at the age of 23. He arrived in Jaffna two years later, and lived with us for 26 years until 1873. The green Memorial Hospital at Manipay was named after him, and is a living testimony to his achievements and commitment.

In his own words, he came to Jaffna.

> "Firstly to provide medical care to the missionaries working in Jaffna and secondly to take care of those locals who requested for care".

But after he came here he devoted a major part of his time to medical education.

First Batch of Medical students from Dr. Green's Hospital
First Batch of Medical students from Dr. Green's Hospital

The credit for opening first medical School in Ceylon goes to Dr. Green. At the time of his arrival there were very few English doctors and none among the Tamils who had any idea of European medical practice.

After a short stay in Vaddukkokkai he shifted to Manipay and started his dispensary, which is given in the picture.

In 1848, his first students were hand-picked from the Batticotta (present Vaddukkoddai) seminary which had been in existence for 25 years. The first batch of medical students consisted of J Periyathamby Danforth, J Dennison, and J Waittilingam. The medical course was based on the curriculum in American Universities at that time and lasted 3 years.

Some of his students in the first few batches are in the photograph.

During the twenty six years Dr.Green Served in Jaffna, he had trained a total of 87 medical practitioners. Thirty two passed out in the English medium and 33 were trained in the Tamil medium. When he left Ceylon in 1873, due to failing health, he left behind a class of 18 students hoping to return and continue the teaching. However he could not return. The final batch of Students passed out in 1879.

There were two other batches, and the final batch of students passed out in 1879. It is recorded that a total of 87 medical Practitioners passed out of the Medical School in Manipay.

Some of the Tamil doctors who were trained by Dr.Green are,

Class of 1848 -50

Joshua Danforth	J Dennison	J Waittilingam

Class of 1851 – 53

J Town	N Parker	C Mead
A C Hall		

Class of 1853 -56

T Hopkins	C Mclntyre	G M Reid
A Mc Farland		

Class of 1856 -59

J H Bailey	A Blanchard	J P Harward
F Latimer	J Wilson	J Ropes
J Flud	D P Mann	

Class of 1861 -64

Karthekeser alias M Hitchcock	Ethernayakam alias C T Mills
Swaminather alias S W Nathaniel	Kanakarrathinam alias L S Strong
Vaittilingam alias D W Chapman	S Navaratnam
Sivappirakasam	A Appapillay
L Spaulding	J B Shaw

Class of 1864 -67 (First batch to be trained in Tamil)

K Elayapillai	Kandappar	S Sittampalam
A Sivasidamparam	V Sittampalam	S Sinnappu
Samuel David	Samuel H Murugesu	Daniel Vettivalu
R S Welupillay	S Mandalam	

Class of 1867 -70

A Appapillay	A Appukutty	Arumugam
S Sarawanamuthu	V Seenivasagam	S Saminather
S Kandavanam	Edwards Lovell	V Vannithamby
Visuvanathan	S Vinasithanby	

Class of 1871 -73

J Amarasigar	S Arunasalam	M Ramalingam
V Cathiraveloo	V Sathasivam Bates	S Sarawanamuthu
S Sinnathamby	S. Sinniah	K Thillaiambalam
K Vaithilingam	K Welupillay	

Class of 1872 -75

A Amerasingam	R Ambalam	T Kanagasabai
C Kumaraveloo	Richard S Adams	Banjamin Lawrence
V Sellappah	N L Joshua	N Thambimuthu
M Nannitamby	Abraham V Nitsinger	Joshua K Pereatamby
V Ponnambalam	K Ponnambalam	S Ponnambalam
Mutiyah S Ropes	N Mutatamby	V Vetteawanam

Dr. Green's intention in training locals was to "popularize western medicine among local people and wean them from indigenous practices which were injurious to health". To achieve this he expected his students to remain in Jaffna and serve the local people in their villages. But his intentions were defeated as

the demand for these graduates increased and they obtained employment in Government and shifted to other parts of Sri Lanka (as is happening in Jaffna today). Some even found employment in countries like India & Malaya.

To circumvent this trend he stared teaching in Tamil. He was handicapped by the absence of Tamil books on western Medicine. Hence he started the massive task of translating English medical books into Tamil. The medical books he authored and translated are given below.

Text Books

Cutter's Anatomy, Physiology and Hygiene, Second edition. 204 pages. 1857
Maunsell's Obstetrics. 504 pages. 1857
Druitt's Surgery. 258 pages. 1867
Gray's Anatomy. 838 pages. 1872
Hooper's Physician's Vade Mecum. 917 pages. 1872
Well's Chemistry.
Daltons Physiology. 590 pages 1883
Warring's Pharmacopoeia of India 574 pages. 1884

Vocabularies

Physiological Vocabulary. 134 pages. 1872
Vocabulary of Materia, Diseases of Women and Children and Medical Jurisprudence. 161 pages. 1875.

Original treatises

The Eye 11 pages
The Ear 11 pages
The Hand 11 pages
The Foot 12 pages
The Skin 16 pages
The Mouth 12 pages
The Body 15 pages
Be Clean 4 pages
Hints for Cholera Time 20 pages
Government Tract on Cholera 11 pages
The Way of Health 4 pages

Work on the book in Anotomy, Physiology and Hygiene was done during the period 1852 -1854. The printing was carried out locally at Manipay. His fame spread to South India. He received orders for 134 copies of Anatomy Physiology and Hygiene from Thirunelvely in South India. The total works printed in Tamil amounts to 4500 pages.

He was assisted in this massive task of translating into a language which was not his own, by Dr. Danforth who belonged to the first batch of students, and later by Dr. J Evarts. Both doctors were Tamils.

Dr. Danforth later obtained an Honorary degree of Doctorate in Medicine of the college of Physicians and surgeons of New York on the recommendation of Dr. Green. Dr.Danforth succeeded Dr.Green as Medical Superintendent of the Jaffna Hospital, when Dr.Green left the post of medical superintendent in 1868.

In 1850, Percival Ackland Dyke, the legendary Government Agent of Jaffna who served in Jaffna for 20 years, suggested a grant to the medical school. It was in his words " to supplant the old class of medical sub-assistants, throughout the province by young men trained as Gould, Ewart and Waittilingam have been" These three are students of Dr.Green.

During the latter part of the nineteenth century Cholera, malaria and parangi. Were causing severe depopulation in Wanni. Dr.James Loos who was the colonial surgeon for the Northern Province in his report ended thus:

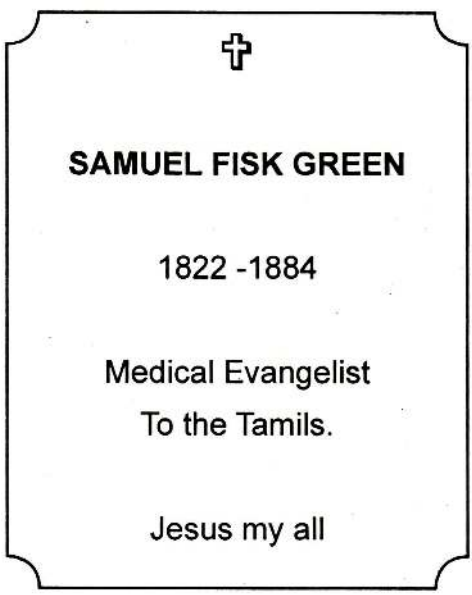
> " in connection with the establishment of Hospitals and dispensaries, I cannot refrain from adding a recommendation with the advantages of which I have been long and deeply impressed – the adoption of a plan for medical education in the island itself, for training an efficient class of medical practitioners who will scatter themselves over the country and displace the present class of ignorant quacks. This good work is to a certain extent, being carried out among the Tamils by Dr. Green of the American Mission; but I think the benefits of improved medical practice deserves to be extended to other districts of the island and other classes of the community, and this is my opinion can be best accomplished by the establishment of a medical school in Colombo."

This laid the foundation for the establishment of the medical school in Colombo and the death knell for the Manipay medical school. The Colombo Medical School was opened on the first of June, 1870. On the first of May, 1879, with Government sanction 7 students of the Manipay Medical School were nominated to follow a shortened 2 years course of studies at the School in Colombo. They were exempted from paying an entrance fee. Although these students had been trained in Tamil they had a fair knowledge of English, and probably the students also jumped at the idea of getting an English degree.

This resulted in the closure of the Manipay Medical School.

Dr. Samuel Fisk Green passed away in his home in Massachusetts on the 28th of May 1884, 5 years after the Manipay medical school for which gave his life was closed down. He was so attached to the Tamils of Jaffna that in his last will he stated.

Should I ever have a gravestone, let it be
Plain and simple and bear the following
Inscription viz:



(Paper read on December 30, 1998 at Kulendran Hall, Jaffna on the occasion of the 150th anniversary of the Green memorial Hospital and issue of the commemorative stamp for Dr. Samuel Fisk Green)

Mr. A Raveendran, Chairperson

It is a great pleasure for me today to deliver this 6th memorial Lecture in memory of Late Miss Annaluxmi Sinnathamby founder of Vaazhvakam. I have had the privilege of associating with her for almost four decades. She was a dedicated teacher totally dedicated to the welfare of disabled children.

When the education department introduced the system of "integrated education" of the disabled in 1972, she opted for training at Maharagama Teachers training school. Following the training she was later involved in "Inclusive education" of physically challenged children, in Jaffna.

In 1988 single-handedly she started and developed the Vaazhvakam, a place for the visually challenged, at Tellippalai. During the bombings, shelling and displacement I have seen her taking these blind children with her from place to place looking for a safe location for the children. I greatly appreciate her dedication to the visually handicapped

Today there are 42 children in the Vaazhvakam she established.

One of the greatest achievements of a great person is to find a successor to carry out the good work that a person starts.

Late Miss Annaluxmi Sinnathamby has found that person in Mr. A Raveendran, the present President of Vaazhvakam as her successor. I would reckon this as her greatest achievement.

My lecture today deals with the challenges faced by the Disabled – especially in Jaffna.

Introduction

The issue of disability exists in every society. Persons with disability are marginalized from Society, and are crippled mentally, socially as well as economically. In Sri Lanka the civil war which went on for over three decades has left an adverse impact on the disabled and added more people to the group of disabled, making it an important factor in Reconstruction and Rehabilitation in the country

According to the World Report on Disability published by the WHO in 2011, about 15% of the world's population lives with some form of disability. Of these disabled 2-4% experience significant difficulties in functioning. The global disability prevalence is higher than previous WHO estimates, published in 1970s which was around 10%.

This global estimate for disability is on the rise due to population ageing and the rapid spread of chronic diseases, accidents and wars, as well as improvements in the methodologies used in measuring disability

Persons with Disabilities are diverse and heterogeneous.

Stereo typed views of disability emphasize on the wheelchair users, and a few classic groups like the blind and deaf.

However disability encompasses a child born with a congenital defect to a person who has lost a limb in a landmine or a woman who is unable walk due to severe arthritis or a mentally ill person

The word disability is misleading. While disability correlates with disadvantage, all disabled are not equally disadvantaged. Wealth and status help overcome activity limitations and participation restrictions.

All persons including disabled have some ability. There is also a tendency to call the disabled as "Differently able" in order to emphasize the inherent capacity they posses. In rehabilitation activities the words such as "Differently able" "Physically challenged" are mostly used.

The United Nations convention on the Rights of persons with Disabilities, which came into force in May 2008 and the International treaty which followed, reinforced our understanding of disability as a human rights and development priority.

Globally, people with disabilities have a poorer health status, lower education levels, less income with higher rates of poverty than people without disabilities. This is mainly because of the barriers faced by the disabled in accessing education, health services, employment and transport. For several decades we, including parents of the disabled have taken for granted that disabled have to be deprived access to all these.

Persons with disability become marginalized from society and are crippled physically, mentally, socially and economically.

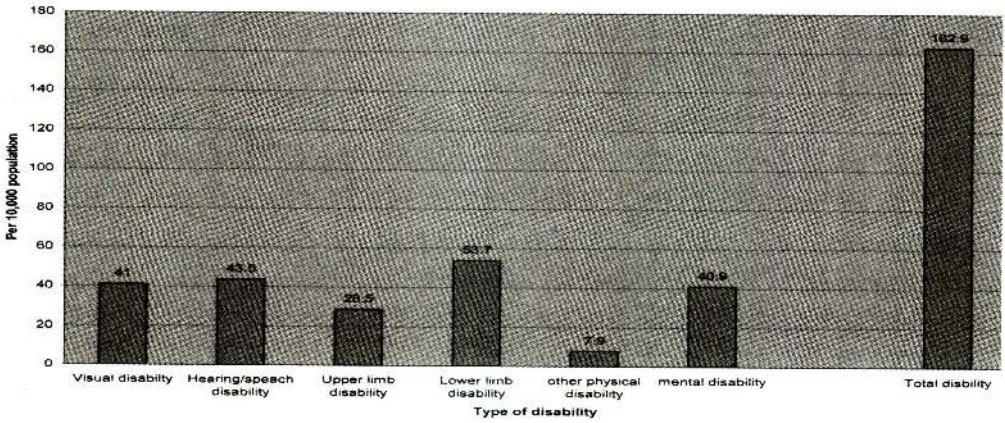
Prevalence of Disability in Sri Lanka

The data on disability in Sri Lanka is scarce. The Census of population and Housing 2001 has some data on disability. This data is also incomplete as this census was carried out only in 18 districts. The Northern district was excluded from the Census although the prevalence of disability is high in the Northern districts, which was affected by the three decades of civil war.

According to the 2001 census, Sri Lanka had a population of 18,797,257. Out of this 274,711 (1.5 %) were disabled.

The Northern Province was the most affected Province during the 30 years old war. The war added a large number of disabled into the disabled community. But this number has not been included in the count. We hope that this data will be included in the publication of the 2011 census

The prevalence of the different types of disability (according to the 2001 census in Sri Lanka) is given in Fig 1.



According to this, 162.9 persons per 10,000 population are disabled. 41 per 10,000 were visually handicapped, 43.5 per 10,000 had hearing and speech defects, 28.5 per 10,000 had disability of their hands, 53.7 per 10,000 had disability of lower limbs, 7.9 per 10,000 had other physical disabilities. 40.9 per 10,000 were supposed to be with mental disability. All these probably come within the 2-4% of severely disabled persons mentioned by the WHO study.

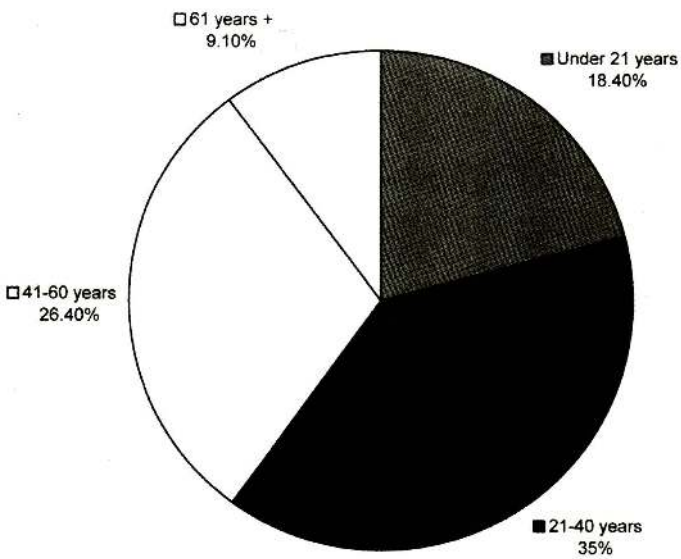
In our society there will be more than 3-4 times the numbers mentioned in the Census figures.

As the 1981 census did not cover the North of Sri Lanka the data on disabled in the Jaffna district are in bits and pieces. Several organizations have data confined to specific areas where they work in. Composite data is lacking.

The Jaffna Jaipur Centre for Disability Rehabilitation (JJCDR) established in 1987 (initially named Jaipur Foot Program) has on record 5327 persons fitted with artificial limbs since July 1987 to December 2011. 77.9% of those fitted with artificial limbs were males. 95.5% of those who had amputations had their lower limbs affected. Among those who were fitted with artificial limbs, a majority (35%) were 21-40 years old. The details are given in the figure 2.

Over half (53.4%) of those fitted with limbs at Jaipur Centre for Disability Rehabilitation are under 41 years of age.

Fig. 2.: Limbs fitted by Age Groups - July 1987 - December 2011 in Jaffna District



The association for Rehabilitation of the Disabled (AROD) based in Jaffna since 1990, has been collecting data of the physically disabled in the Jaffna District. The data is not complete; but there are approximately 4889 physically disabled registered as at April 2011. 58% of them are males. These are mostly disabled who contact AROD for services. There is likely to be a large number who do not attempt to access the services available.

The distribution of the disabled by age groups is given in Table 1

Table 1: Distribution of Disabled in Jaffna District - by age groups

No	Age Group	Percent
1	Under 10 years	4.3
2	10 – 19 years	10.9
3	20 - 29 years	17.4
4	30 -39 years	17.8
5	40-49 years	14.7
6	50 – 59 years	13.8
7	60 years and above	21.0
	Total	99.9

Source: Association for Rehabilitation of the Disabled (AROD), Jaffna

A third of the disabled (32.6%) are under 30 years of age. Although only 4.3 % are under 10 years old, there are a large number of disabled children who remain unidentified. Most of them will be having mild to moderate disability, especially visual or hearing defects and delayed milestones.

However, we have to accept that the number and category of disabled in Sri Lanka – especially in the War affected areas is very poor. During the 30 years of civil war several children and adults were disabled and there is no proper count

Children are very much affected due to disability and services available and accessible to them is poor. In Sri Lankan law the able child comes under the Department of Probation and child care and the disabled child comes under the Department of social services.

The Sri Lankan Government has signed and enshrined into its constitution the Universal Rights of the child. These rights are for able and disabled children.

The social services department has guidelines for disabled children as well as the services the social services should provide

The social services guidelines include

- Early identification of the disabled child and his or her rehabilitation
- To protect the disabled child and provide him or her with all the rights
- The disabled child should be integrated into his or her family
- Every disabled child should attend school wherever possible
- Disabled child once an adult must have an independent life
- A disabled child or adult must have social skills training
- The disabled child should have an income

Services provided by the social services department includes

- Mobility aids
- Vocational training
- Finding jobs
- Income generation / self help/ self-employment
- Development of preschools for hearing impaired children
- Help with housing for accessibility
- Establishment of Rehabilitation Centers
- Supply of hearing aids
- Supply of spectacles

All the above is mostly on paper. There is little evidence that these are implemented fully and most of the disabled families are unaware of these facilities.

An able student in a residential institution gets a small allowance. A disabled child gets much less. Even among the physically disabled children, a mentally disadvantaged child is more discriminated

Discrimination of the disabled child starts from within the family. The parents refuse to admit the disability from the start. This is related to the belief that the disabled child was born to them because of their bad "Karma". Hence the parents through shame keep these children hidden away in their homes to prevent others seeing them. This prevents early detection and taking of rehabilitative measures

Some parents keep their disabled children concealed as this will affect the prospects of their other children – especially in relation to marriage. The other "out of sight is out of mind" technique used by Sri Lankans as well as other countries is to place the children in large residential institutions.

When a mother gives birth to a disabled child, she is subjected to emotional shock and strain. She is also subjected to embarrassment, shame and guilt and become a burden on the family. These have to be attended to by proper psychological counseling. The Public Health Midwives and Social Service Officers have to take a keen interest

Disability and Human Rights

Disability is a human Rights issue because people with disabilities experience inequality when they are denied equal access to health care, education, employment, or political participation because of their disability. They are also subjected to violation of dignity when they are subjected to violence, ridicule,

abuse, prejudice and disrespect because of their disability. Some disabled are denied autonomy when they are subjected to forced sterilization, or confined to institutions against their wishes and regarded legally incompetent because of their disability.

There are several International documents adopted by several countries which highlight the human rights of the disabled. Some of them are

- World Programme of action concerning Disabled people (1982)
- The convention on the Rights of the child (1989)
- Standard rules on the equalization of opportunities for people with disabilities (1993)
- United Nations *Convention on the Rights of persons with Disabilities* (CRPD). This is the most recent and which gives extensive recognition of the human rights of persons with disabilities. Its purpose is to "promote, protect, and ensure the full and equal enjoyment of human rights and fundamental freedoms by people with disabilities and to promote respect for their inherent dignity".

Everybody (including School children University undergraduates) must be educated on the rights of the disabled

What are the Barriers?

There are several barriers to the improvement of the condition of the disabled

1. Inadequate policies and standards and non enforcement of even the established standards
2. Lack of clear policy on inclusive education
3. Lack of access to facilities in public places and even in their homes
4. Low priority to Rehabilitation
5. Negative attitudes
6. Beliefs and prejudices
7. Parents and Teachers do not see the value of learning for disabled
8. Employers discriminate in selection of disabled
9. Parents have low expectations of the ability of their children
10. Lack or inadequacy of Services for health care, rehabilitation , support & assistance
11. Inadequate funding

12. Lack or inadequacy of accessibility especially to public places in order to access services. Transport system, and information are also inadequate
13. Lack of consultation with disabled for decision making in matters directly affecting their lives.

How do These Barriers Affect Their Lives?

- They have poor health outcomes
- They have lower educational achievements Very few have had tertiary education, even though their intellectual capacity is good
- They are less economically active
- Experience higher rates of poverty
- Cannot live independently or participate fully in community activities

All the above are interconnected. They are linked to poor education, lack of access to employment opportunities and other related factors. They are also caused by barriers to education, employment and mobility

What can be done?

Disability is part of human beings. Almost everyone will be temporarily or permanently disabled at sometime in our life. Those who survive to old age will experience increasing difficulty in functioning.

Every effort must be made to

1. Enable access to all mainstream policies systems & services
2. Invest in specific programs & services for people with disabilities
3. Adopt a National disability strategy and plan of action
4. Involve people with disabilities in formulating, implementing policies laws and services. They should be consulted and actively involved
5. Improve Human resource capacity
6. Provide adequate funding and improve affordability
7. Increase public awareness and understanding of disability
8. Improve disability data collection
9. Strengthen and support research on disability

How can we translate Recommendations into Action?

The responsibility to put into effect all that has been said lies with all sectors of the society

1. The *Government* should
   a. revise exiting legislation and policies and make them consistent with the recommendations of the Convention on the Rights of Persons with Disability and ensure that there is compliance and enforcement legislation
   b. Improve national and regional Disability statistics. In this, functional disability rather than that of impairment statistics should be collected
   c. Develop a National disability policy
   d. Allocate sufficient resources for disability rehabilitation
   e. Government should ensure that their staff working with disabled like PHIs, PHM, PHNs of the Health Ministry and Social Service officers in the Department of Social services and Department of Probation and child care provide services and referral to appropriate institutions
2. *United Nations Agencies and Development agencies* should
   a. Include disability in their programs
   b. Provide technical assistance to Governments regards disability
3. *Disabled persons Organizations* should
   a. Create awareness among the disabled about their rights and services available
   b. Support disabled children's education
   c. Contribute to monitoring & evaluation of services
   d. Conduct audits of environment to identify the physical and information barriers which exclude persons with disabilities from accessing the services
4. *Service providers* should
   a. Carry out frequent audits to identify the barriers to the disabled in their institutions and take corrective measures
   b. Where necessary carry out individual service plans in consultation with the disabled and disabled organizations
   c. Ensure that people with disability are informed of their rights and the mechanism of complaints

5. *Academic Institutions* should
   a. Include education on Rights of the disabled and UNCCRPD
   b. Remove barriers to the recruitment and participation of students and staff with disabilities
   c. Ensure professional training courses have adequate information on disability
   d. Conduct research on lives of persons with disabilities, on disabling barriers in consultation with disabled persons' organization

6. *The private sector* should
   a. Facilitate employment of persons with disability for appropriate jobs.

7. Communities should
   a. Challenge and improve their own beliefs and attitudes towards the disabled
   b. Protect rights of persons with disabilities
   c. Promote inclusion and participation of disabled in community and social events
   d. Challenge violence against and bullying of disabled

8. People with disabilities and their families should
   a. Support other people with disabilities through peer support, information sharing and advice
   b. Promote rights of the disabled within the community
   c. Become involved in awareness and social marketing programs
   d. Participate in forums to determine priorities

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(Ms. AnnaluxmiSinnathamby Memorial Lecture delivered at "Vaazhvahan", Sabapathy Road, Maruthanarmadam, Uduvil on September 11, 2012.)

Leprosy in the Village of Kaatupulam in Jaffna*

6

Summary

A new pocket of leprosy cases was discovered in the Jaffna District at Kaatupulam. In this village with a total population of 514, there were 57 cases of leprosy - 5 lepromatous and 52 tuberculoid. These cases were all confined to 29 families out of a total of 104. The commonest clinical manifestation was either single or multiple hypo-pigmented macular lesions with a variable loss of touch, pain and temperature sensation in the limbs

Introduction

It is well known that cases of leprosy tend to occur in certain areas in clusters as pockets of infection. We are already aware of such pockets of infection in Jaffna, at Pungudutivu, Valvettithurai and Atchuveli. Few years ago we noticed a number of new cases of leprosy arriving from Kaatupulam a small hamlet at Thiruvadinilai 12 miles from Jaffna town. These cases were referred to the clinic by patients or volunteer workers. A survey was organized in the village itself in February 81 to detect new cases and to study the clinical features. Suspected cases were further investigated at the leprosy clinic in General Hospital Jaffna. Slit skin smears were done in all cases. The cases already registered from the area are also included in this study.

Results

A total of 57 cases of leprosy were diagnosed from this area which has a population of 514 with 253 males and 261 females. Of these 27 were males and 30 females. The age distribution is given in Table I and families with more than one case is given in figure I. Of the total 104 families all the cases were confined to 29 families.

Of the 57 cases 5 were lepromatous and 52 tuberculoid. The lepromatous cases were all males and included a father and son. Father was diagnosed in 1970 and son in 1979. Other cases were diagnosed in 1975, 1980, 1981. The tuberculoid cases number 52 and consisted of 22 males and 30 females.

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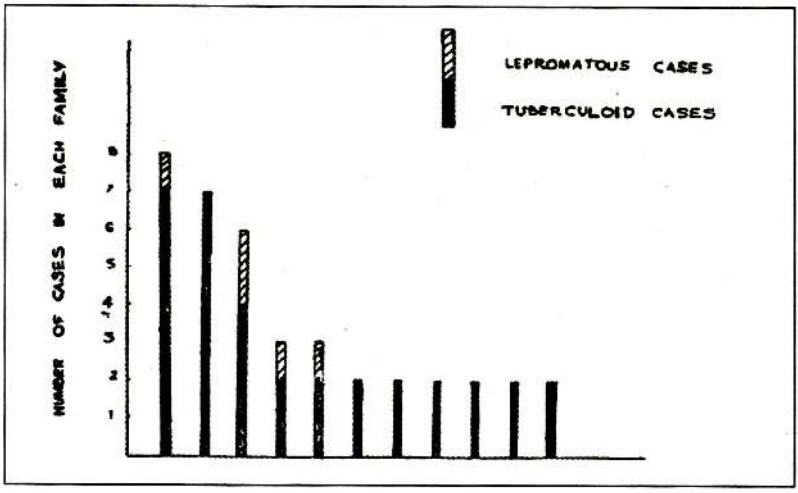
Table: I Cases of leprosy by age distribution

Age	No. Cases
0-10 Years	9
11- 20	13
21 – 30	15
31 -40	4
41- 50	4
51- 60	7
Over 61	5

Figure 1: Distribution of Cases in Each of the II Families with Multipe Cases



Commonest clinical presentation of the lepromatous cases was generalized nodular infiltrates with thickenning. All these cases had their slit skin smears positive for leprosy bacillus. These cases were already diagnosed and attending the leprosy clinic for treatment although not regularly.

The tuberculoid cases had single or multiple hypopigmented macular Jesions with variable loss of touch, pain and temperature senses. Some of the lesions had a raised margin with central flat area. Few others had an erythematous appearance. The lesion was single in 25 cases. Of these 19 were found on the limbs, 4 on trunk and 2 on face. The other 27 had multiple lesions on trunk and limbs, The size of the lesion was variable from a few millimeters to several centimeters, The shape of the lesion was oval or rounded. In 24 cases the nerves were thickened and Palpable. Only ulnar nerve was thickened in 14 cases, greater auricular and ulnar nerves in 8 and lateral popliteal in 2. One case presented without any skin lesions with ulnar nerve thickening and palsy.

Duration of symptoms and signs at the time of diagnosis was under 6 months for 25 cases and between 6-12 months for 26 cases and 2 years for one case.

None of the cases had my permanent deformities

Discussion

The number of cases of leprosy in the world is estimated to be around 15 million of which about 3 million are found in the Indian Subcontinent. Africa has the greatest prevalence rate of 20 -50 per thousand.[1] Prevalence rate for Sri Lanka is O.74 per thousand[2] and that of Jaffna) 57 per thousand[3]. For Kaatupulam the rate is 110 per thousand. Table II gives a few other comparable rates[4]. These rates although not strictly comparable are very high. It is known that in certain villages in endemic areas virtually all the inhabitants contract leprosy sooner or later. This situation may occur at Kaatupulam if active surveillance and treatment are not carried out.

Table II: Prevalence rates of leprosy in certain selected countries

Country	Prevalence rate per 1000 population
Argentina (Chaco)	5-6
Thailand (Khonkaen)	12- 4
Brazil (Candeias)	10 -6
Cameroon	25-8
Northern Nigeria (Katsina)	28-8
Burma (Shewebo)	32- 6
Burma (Myingyan)	44- 4

Leprosy can occur at any age. In our series the youngest was 3 years old and eldest 76. 47% of cases were clustered in the 11-30 years age group. This tendency is seen in other series too[6] The possible reason for this their greater exposure and greater exposure and greater susceptibility.

In this series all the lepromatous cases were males while in the tuberculoid cases were males while in the tuberculoid cases 22 were males and 30 females. Leprosy in adults is more prevalent in males than in females. (1.6:1) Lepromatous rate is significantly higher in males than in females. However in children there is no significant difference between sexes.[7] The overall figures in our series are 27 males and 30 females.

21 cases (36.8%) were found in 3 families. The current view explains this by a dual mechanism of heredity and contagious transmission. The disease is believed

to appear in persons hereditarily susceptible when exposed to infection. This may have happened at Kattupulam. The two lepromatous cases discovered in 1971 and 1975 may have provided the source of infection for all these cases

In this study 29 patients (50.9%) had skin lesions and nerve enlargement. 27 patients (47.4%) had only skin lesions and one (1.7%) had only nerve enlargement. In the who leprosy BCG study in Burma[8] the corresponding figures were 9.8%: 79.5%: 10.6% respectively. The possible reason for the variance may be because most of the patients in WHO study were children. However the total number of patients with skin lesions was 98% compared to 90% in the WHO study.

Skin lesions may be single or multiple. In this study 25 patients (43.8%) had single lesions and of these in 19 (76%), the lesions were found on the limbs and in 4 (16%) on trunk and 2 (8%) on face. The comparable figures in the WHO trial, are given in table III.

Table III
Distribution of single lesion compared with leprosy B. C. G. trial in Burma

Area Involved	Kattupulam	Burma
Limbs	76%	84.6%
Trunk	16%	12.6%
Face	8%	2.5%

These figures clearly show the ease with which these can be spotted. It is essential for medical officers to look for and test for hypopigmented anaesthetic lesions. If this is done routinely we could detect many more cases of leprosy early.

One consoling feature was that none of these patients had any permanent deformities. The possible reason for this is the fact that these patients had contracted illness only within the last few years. Good results can be achieved if these cases are treated regularly.

Acknowledgement

We would like to thank Mr. V. Wijeyaratnam, Public Health Inspector, Anti – Leprosy Campaign who has been of immense help in preparing this paper. We would also like to thank SHS Jaffna and the Health Educator for organizing the survey.

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Our Society is Aging, are We Ready to Face the Challenge?

Dr. Jega D. Pasupathi, Immediate Past president, Past president members of the counsil, teachers colleagues, students and friends.

The office of Presidency of this association is the supreme honor that members could bestow on one of the members , I am grateful for casting this honor and confidence in me. I accept this post with humility and solicit your unstinted co-operation without which it will not be possible to discharge my duties satisfactorily

The acceptance of the post of president carries an implied obligation of delivering a presidential address. Tonight I propose to speak on the problem of aging in our society

Introduction

Today we are witnessing a new phenomenon in the history of mankind: the extraordinary increase in the proportion of older people in the population

The age structure of societies is changing rapidly. Older people who were rarely visible earlier now feature prominently in families, neighborhoods, and communities

The emigration of younger people, may have contributed to this in our country, but there is a definite major demographic change occurring throughout the world, resulting in an increase in the proportion of elderly people in every society.

One of the major reasons for the increase in the elderly population is the increase in longevity. This is an achievement for the entire medical world. But it has also created problems in other ways

When the proportion of elders becomes too high in relation to the work force of a country it becomes an economic burden on the society and the country.

An increase in the number of families with fewer or no children has led to a higher proportion of old people with no children to look after them. This, in addition to the emotional deprivation it brings, results in the need for community and state assistance.

With the increase in the life span, 4 or even 5 generations will be living at one time and it would mean that a couple in the working age will have 2 or even 3 generations of dependant elderly parents, in addition to their own children.

The children of the elderly are themselves old and unable to look after them selves or their parents.

Old people have been shown to utilize the health services more often than other age groups and thereby cause a drain on the health services.

World Trends in aging

Since time immemorial, some people have lived to a ripe old age, but they have formed only a very small proportion of the population. Today they constitute a sizeable number and a larger proportion of the population

Very few countries in the world have accurate demographic data pertaining to the last century. However, Table I gives an indication of the percentage of elderly persons living in some selected countries during the year 1850, 1900 and 1950.

Table 1: Proportion of the Population 65 years and over (in%) in selected countries

	Years		
Countries	**1850**	**1900**	**1950**
Brazil		2.1	2.5
India		2.4*	3.6
Germany		4.9	9.3
France	6.5	8.2	11.8
Great Britain	4.6	4.7	10.8
Italy		6.2	8.1
United States of America		4.1	8.1
Europe		5.7	8.7

**In 1910*

Source : The aging of population and economic and social implications United Nations 1956 (Sales No: 1956 - Xii-6) World Health Statistics Quarterly 35, No. ¾ 1982. p 129. W. H. O. Geneva.

Table 2: Projected increase in the elderly population (65 years and over) of the world

Area	Projected increase (in Million)by 2000 A.D
The world	138
Developing areas	100
China	32
India	17
Other	51
Developed areas	
U. S. S. R.	10
U. S. A.	7
Other	21

Source: W. H. O. (1984) Technical Report series 706, W. H. O. Geneva

In 1980, there were 259. 5 million people, 65 years and over in the world. This is expected to increase to 402.9 million in the year 2000 –an increase of 55.3%

In 1980, 50.8% of the elders were living in the less developed regions of the world. By the year 2000 A. D. , 58. 8% of the elders will be living in the less developed regions, of the world.

The projected increase of the elderly from 1980 to the year 2000 A. D. is given in Table 2. It will be seen that the world's poorer countries account for most of the projected increase. No significant change is expected in the proportion of these elders to the total population, in the developed countries.

Among individual countries, the projected increases, in the U. S. S. R. (10 million) and the U, S, A. (7 million) are dwarfed by the increase in china (32 million) and India (17 million)

Trends in Sri Lanka

Sri Lanka has 4.2% of its population consisting of persons 85 years and over. The comparable figure for Sweden is 16 %, for U. K, 15% and U. S. A, 11% *(1)*During the census of 1881, the percentage of persons 65 years and over was 2.2% (Table 3), and this gradually increased during the next century.

While the total population of Sri Lanka increased by five times between 1881 and eleven times during this period.

Table 3: Percentage distribution of population 65 years and over, Sri Lanka 1881-1981

Census Year	Total census Population ('000)	Percentage 65 +Years
1881	2760	2.2
1891	3008	2.1
1901	3566	1.4
1911	4106	2.3
1921	4498	2.4
1946	6657	3.5
1953	8098	3.5
1963	10582	3.6
1971	12711	4.2
1981	14850	4.2

The high fertility rates during the period. 1920 – 1950 has given rise to large birth cohorts around these years and this together with decreased mortality and increased life expectancy is likely to result in a large number of elders (65 years and over) later

It is estimated that the 636,000 elders, in 1981, will swell to 1,340,000 by the year 2001 A. D. - an increase of 110%

Even among the elders, there is a group of 'very old' people emerging. This group assumes importance in policy making and health planning, as this is the group which will need more heath care and probably institutional care. Out of the 636,000 persons, 65 years and over, in 1981, 100,000 were over 80 years constituting. 15.9% of the elders. By 2001 A. D. – this number will be 450,000, constituting 33.6% of the elders.

In the developed countries, there is an imbalance in the sex distribution of the aged population, with more females than males.

In the U. S. A. in 1970, there were 80 males to every 100 females in the 65- 69 age group; while among those in the age group 85 years and over there were only 56 males to 100 females. In Sri Lanka, the corresponding figures were 122 males for every 100 females in the group 65-69 years old and 108 males for every 100 females among those 80 years and over.

In the developed countries excess in the female population in the older ages, is due to higher mortality among males than females. In Sri Lanka, as in other developing countries, this is not so. But, it should show itself during the next decade, when these females born after the 1930's enter the elderly group; as these are the females who reaped the benefits of the reduction in maternal mortality which occurred in the 1940's. The females also benefited by the social changes, as for example educational opportunities, that gave equal rights to females.

As a result of the lower expectation of life for males, and the fact that husbands are considerably elder than their wives in our society, a large number of the elderly females are going to be widows. A higher percentage of widows in the population is bound to have social implications. Many women will have to live for a substantial number of years with out a husband's support. In Sri Lanka, a woman widowed at 70 years, will live on an average, a further 10 years.

Services Available for the Elders in Sri Lanka

The health services in most of the less developed countries of the world are directed at improving the well being of families through maternal and child health, control of infections, fertility regulation and environmental sanitation. However many developing countries in the world, like Sri Lanka have shaken free from the legacy of shortened life expectancy and have started to achieve declines, in fertility and increase in life expectancy.

We have a comparatively younger population with 46.1% under 20 years of age. This demographic pattern quite naturally has resulted in high priority in state policies for Health care, Education and Employment for the younger generation. Sri Lanka has accepted the primary health care concept and the care of the elderly has not been included in this list. Time is now opportune with the shift in the demographic pattern to give serious thought to the establishment of health care services for the elders.

The major problem faced by the elderly are socio-economic and health. Current policies and practices towards the aged are contradictory. Overtly, society endorses the principle that the older persons deserve the conditions necessary to lead a decent life, after sacrificing a good portion of their lives in contributing to the economy and well being of their family, society and country. But the services available for the elderly fail to achieve this objective. Retirement benefits are available only to those who are employed in the state or private sector, and they constitute a minority. The majority, who are self employed have to continue working until they are unable to work anymore.

A study was carried out in 1985 in the Kokuvil area, which is a periurban area with a majority of the people in self employment (Table 4). In this study. 1614 males and 1730 females, 55 years and over were interviewed. Out of those over 55years of age, 46.5% of the males and 3.9% of the females were working. Analysis of the male aged, by age groups indicates that 60.4% of the males in the 55-64 years age group were employed; among the male, 65-74 years old, 39.4% were employed and among those who were 75 and over, 15.1% were still working *(2)*

In the state sector, the optional age of retirements is 55 years with a possibility of extension up to 60 years. On retirement a state employee gets a pension, while

an employee in the private sector gets a lump sum from the provident fund. The latter besides being inexperienced in handing such large sums of money, is already faced with debts. or family responsibilities, such as further education of their children or settling daughters in marriage. After meeting their commitments they are left with little or nothing for their own support.

Table 4: Distribution of employed males 55 years and over in the Kokuvil area

Age Group (in years)	Total Population		Employed Number%
55-64	820	495	60.4
65-74	556	219	39.4
75+	238	36	15.1
	1614	750	46.5

Source: Sivarajah N. (1985) Resources available to the needy elderly take the form of Public assistance allowances from the state funds. However these allowances barely meet the basic needs of an individual. Another alternative for those who are destitute is to enter a state or private home for the elders where food and lodging is provided free. Sri Lanka has four state homes for the elders, 45 homes run by voluntary organizations and 14 cottage homes accommodating about 3000 elders *(Administration Report of the Director of Social Services for 1970-71, 1976) (3).*

The state home for the elders (formally called the homes for the aged) were started in the early part of the 1950's to accommodate the old people who had no one to look after them. Generally, admission to these homes is confined to persons over 60 years and eligible for public assistance and of fair health and sound mind. Most of the inmates of these homes have been beggars and vagrants.

Voluntary homes are run by voluntary organizations with state assistance. These are better maintained than the state homes.

Problems of the Elders

The problems of the elders are social, economic and medical. Our customs and traditions incorporate the elderly into the life of the extended family and the community. The elders commanded authority and respect within the family and in the community. They provided leadership and were the decision makers. In our culture wisdom was equated with old age.

In an extended family system, with three or four generations living together, it was possible to care for the elders. Today with modernization and urbanization this system is breaking down. The greater mobility of the working population, the migration of the younger generation away from villages to urban areas and far away lands, employment of women and smaller families, make it harder for the families to care for their elders. Further, with the increase in the expectation of

life, the children of the very old are themselves old. As a result, many old people will be forced to live alone. Even those who presently live as part of an extended family live alone for most part of the day.

Table 5: Distribution of elders (in%) according to the persons with whom they live Age group (in years) and sex

	65 – 67		75+	
	M	F	M	F
Spouse	67.8	21.5	44.2	5.2
Daughter	14.6	39.7	30.3	45.2
Son	8.1	18.8	14.7	25.9
Relation, friends or others	2.7	3.8	4.6	5.3
Brother or Sister	1.1	1.3	0.8	1.3
Grand child	0.2	2.0	0.8	7.0
Lives alone	5.6	12.9	4.6	10.1

Source: Sivarajah N, (1985) (2).

Presently solitude does not appear to be a major problem. As shown in a study carried out in the Kokuvil area *(2)* only a very small percentage were living alone (Table 5)-However with the present trend in emigration of younger people solitude is likely to be a problem in the near future.

Retirement brings about financial and psychological strain on the individuals. It is more so when they are forced to retire at a time when they feel fit to continue working. Further, with the rise in the age of marriage, the children of those who reach the age of retirement of 55 years, are heavily dependent on their parents. When a bread winner has to retire at this crucial time, it is a serve financial and mental strain as he has to live on less than what he has been earning. He also loses his social status which may cause much anxiety.

A major problem among the elderly is ill health. What do old people actually suffer from?. In persons 65 years and over, the main discharge diagnosis from state hospitals in the United States of America were, diseases of the circulatory system (29%). Diseases of the digestive system (12.7%), neoplasm's (11.0%) and diseases of the respiratory system (9.9%) *(4)*. A ten year follow up of 70 years old people in Copenhagen (in Denmark) showed that cardiovascular diseases accounted for about half of the total hospital days; the rest being other chronic diseases, senile psychoses and traumatic lesions.

However hospital records in our country give very little information about the prevalence of illnesses in the community especially because most elders

consider some symptoms of illnesses to be an inevitable consequence of old age. Many of them also resort to indigenous treatment, information on which is not readily available. Severe dementia persons for example are unlikely to get admitted to hospitals. At the same time only few of the total number of patients with arthritis are likely to get admitted to hospitals

Elders are more concerned about their disability than a particular illness.

Health Care for the elderly

What are we trying to achieve by providing better care for the elderly? The motto of the World Health Assembly's meeting in 1982, in Vienna, "Add years to life", partly answers this question. What the elderly need is not to be kept alive to an advanced age by over-enthusiastic medical intervention; but they wish to stay fitter, longer and have a short period of terminal dependency. They would like to carry on with their normal activities like housekeeping, preparation of food, transportation, personal care and social interactions until the terminal stages.

The aim of health care for the elderly should be to achieve these objectives through

1. Prevention of ill health
2. Promotion of health
3. Care of the ill, disabled and handicapped

Prevention of Ill Health

Preventing premature aging is an important aspect of the care of the elderly. Prevention of premature aging depends more on social and cultural, than on medical measures. Preparation for retirement, opportunities for part-time work, a certain amount of physical and intellectual activity, community life, social contacts, and financial security are among the best means of combating premature aging. Since premature aging is the direct or indirect consequence of everything that happens through our life, preventive measures should, in fact start from childhood. However a good start in prevention could be made from about the age of 50. It involves healthy living and eating, adequate physical exercise, early detection and treatment of chronic diseases like hypertension, arteriosclerosis, cardiovascular diseases, diabetes and rheumatic diseases. Social environment and economic circumstances affect not only the health of an individual but also the aging process.

Many of these factors were identified at a WHO seminar on the health protection of the aged, held in Kiev in 1963 *(5)* and preventive measures recommended. Some of them are:

1. Regular, medically supervised moderate exercise.

2. Alteration in the national retirement policy to include flexibility in the age of retirement, pre-retirement counseling, and short or part time post – retirement employment.

3. Housing units for the elderly should be designed taking into account the physical deficiencies of the aged people, their difficulties in moving about without support, their problems in negotiating stairs (in our case steps and wells), their forgetfulness and the dangers this creates. They should not be isolated from the community.

Privacy is important to most people. But it appears to be more important to older persons, to permit sedentary recreation and meditation.

Promotion of Health

Health education and routine health examination are the two main means of promoting health and preventing chronic diseases in the elderly. Although Health education is most effective if begun in childhood, many problems of aging can still be slowed down by appropriate education of the middle aged and elderly. Health education should include, maintenance of mental health, oral health, Adequate nutrition prevention of accidents, recognition of a reduced tolerance to drugs, the proper use of leisure, preparation for retirement and old age, and the utilization of the existing preventive and curative health services.

Routine health examination aims at early detection of physical, mental and social deviation from health. It has been suggested that such examination be carried out during middle age. Just after 40 years and at six months before retirement. The last one should include pre retirement counseling. However, the 'cost effectiveness' and 'cost efficiency' of this procedure is being argued. Further research in this direction is needed. In any case, this could be implemented as a pilot study among the staff of the Department of Health services. It is customary to screen persons on recruitment. This is necessary to ensure that healthy persons are recruited. But it's a pity to see that a good number become incapacitated or die at a time when they are well trained and at the zenith of their career, because their illness had not been detected and corrected a little earlier.

Care of the Ill, Disabled and Handicapped

The WHO defines *(6)* impairment as any loss or abnormality of psychological. physiological or anatomical structure or function. Disability is defined as a restriction or lack, resulting from an impairment of the ability to perform an activity in a manner or within the range considered normal for a human being. A handicap is defined as a disadvantage for given individual resulting from an

impairment or disability that limits or prevents the fulfillment of a role that is normal (depending on age, sex and social and cultural factors) for that individual.

Most health professionals, family members, friends and others tend to interpret all problems of the elderly as being of a medical nature. But most elders speak of their inability to do something rather than worry about their health *(7)*. This supports the view that most elders want to be independent rather than healthy. In the Kokuvil study only 1% of the 3344 persons, 55 years and over who were interviewed, indicated that they were unhappy due to ill health

What elders need is to be able to carry on with their activities of daily living. Like washing. bathing, feeding, getting into the toilet, moving about, continence and social interactions. The care of the elders should be designed to fulfill these demands. Vision is an important factor in the carrying out of the daily activities. In the Kokuvil study, this appeared to be a major handicap. Out of the elders who needed glasses to carry out their activities only 30% used glasses.

Most elders consider Poor vision to be an accompaniment of old age and suffer in silence. It is essential that the vision of all elders is tested and appropriate action taken to correct the defects. Loss of hearing is also a handicap which needs correction though not as important s vision. Dental hygiene is also very poor among the elders in Sri Lanka. The Kokuvil study showed that an overwhelming majority of the elders had periodontal disease. Only a small number of elders used dentures, resulting in inability to chew the food in the majority leading to malnutrition.

Provision of appliances, from a simple walking stick to spectacles, hearing aids and dentures are of primary importance. This is one field where a relatively small intervention like providing a pair of spectacles, or hearing aid can make a profound effect on the physical and mental well being of the elders.

Malnutrition also appears to be a problem among the elders living in communities which do not produce the food this was evident in the estate sector of Sri Lanka during the famine in 1974 *(8)*. During the periods of famine the infants and the elderly suffer most.

The medical problems of the elderly are mostly chronic illnesses which need regular monitoring and follow up. In the Kokuvil study preliminary data indicate that 80% of the diabetics who were supposed to be under medical care were not under control, thereby exposing themselves to all the possible complications of diabetes. The same is true in the case of hypertensive patients.

The elderly people who suffer from chronic illnesses have to be continuously monitored. Initial diagnosis and commencement of treatment and even regular monthly visits to the specialists' clinics does not ensure cure or control of the illness. Regular treatment and continuous monitoring of the elderly, preferably

at home, is necessary This could be achieved by involving the family health workers. F.H.W. (The Public Health Midwives) in Geriatric care. Home visits form the major component of the work of these family health workers who could incorporate geriatric care into their routine health care.

1. They could help in self care, like advising on nutrition and personal hygiene, assist in foot care and wound toilet in the elderly diabetics. Most diabetics develop wounds and cellulitis of the feet. Prevention of minor injuries and early wound toilet is a prerequisite in the prevention of these complications.

2. They could assist in geriatric care by educating the family, especially school going children who are very receptive to education, on the prevention of disability among the elders. They could educate and train the family members in basic care like, wound toilet, administration of insulin and testing of urine for sugar.

3. The family health worker could assist in screening the elderly for illnesses like diabetes, hypertension, cancer, vision and hearing. Coupled with a good referral system, this could be of immense help to the elders.

4. The family health worker could monitor the diabetics, hypertensives and others with chronic illnesses so that further disability or handicaps do not develop. Initial diagnosis and commencement of treatment and even regular monthly visits to specialist's clinics does not insure against cure or control of the illnesses. It has been found in the kokuvil study that a majority of persons suffering from diabetes and hypertension are not under control and the elders themselves are unaware of it. It has been found that patients know the investigation or measurements that will be done at the clinic and prepare themselves just before they come to the monthly clinic. For example some elderly diabetics are strictly on a diabetic diet only for a few days before the clinic and once they return home after the clinic they are lax until just before the next clinic. The same is true in the case of hypertensives who strictly adhere to the drug regime just before the clinic. The elders who do not adhere to the drug or diet regime prescribed to them are liable to develop complication which may incapacitate them for life. The F H. W could assist by advice, monitoring and referral where necessary.

5. The F. H. W. should be able to provide services, like administration of insulin, testing of urine. Dressing of diabetic ulcers, super vision of drug administration to elders who are unable to do so by themselves, or do not have assistance at home. This should be done only in situations where the elders or someone at home cannot be trained to undertake these tasks.

All these activities could be carried out efficiently by the F.H.W, only if she is sufficiently trained. The present training programme of F.H.Ws, is heavily biased towards midwifery. Today's F. H. W are merely former P.H.M. with a change in designation and with no major changes in the training curriculum. The curriculum of F.H.Ws should be geared towards primary Health Care and and appropriate training given so that they could carry out these activities effectively. They should not be interchanged with midwives in hospitals who should be trained separately for that purpose.

In most villages there are, at present, a large number of volunteers who assist the P.H.M's in the clinics and in the field. They should also be utilized in domiciliary geriatric care.

The older people suffer more from chronic illness than acute illness. They utilize the health service more but the extent to which they utilize depends on availability, affordability and accessibility of those services.

In most developed countries where studies have been carried out, the utilization of health services increases with age *(4)* In Scotland, elders in the 65 – 74 years old group made 4.4 visits to a physician in an year while elders 85 years and over made 7.9 visits per year. Admission to short term hospitals also increased with age. In the U.S.A., the admission to short term hospitals increased from 243 per 1000 in those aged 65 – 69 years, to 469 per 1000 persons 85 years and over. Similar studies have constantly shown a higher utilization of health service as age advances. The cost of health care is also higher in the elders. In the U.K., the estimated total combined costs of health and social services per head per year by age group in 1980 was as follows:

Age	0 - 4 year	£ 160.00
	5 – 64 years	£ 85.00
	65 – 74 years	£ 250.00 and
	75 – years	£ 635.00

Unlike in developed countries, in Sri Lanka there is no organized geriatric health services. The general surgical and medical services are utilized by the elders. A considerable number of general surgical and medical beds are occupied by elderly patients. Separate geriatric wards and clinics in hospitals will relieve the general physician of much time and at the same time provide a better service to the elders.

Traditionally, the family has been the main support for most elders. Though there is no legal obligation for the young to support their elders, the moral obligation is not disputed. In a family it is ultimately the daughters or sometimes

the daughters in – law who care for the elders, and attend to their day to day needs. With the changing role of women and their participation in the work force, this support the elders have so far received, is gradually decreasing. It is time that we start thinking of decent institutions for the care of elders who do not have anyone to look after them.

In the North today there is a need for even paying homes for elders. Several elders with financial support find themselves destitute with no one to look after them during times of illness. Home care and ambulatory care in the form of 'meals on wheels' are available in several developed countries. Such care may be an extravagance and a premature venture for a developing country like ours. But some arrangement for the care of our elders has to be made through our primary health care network and by the establishment of a geriatric health service. I hope this will be achieved at least before most of us assembled here become old.

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A Study of the Registration of Deaths of Infants and Pre-school Children*

8

Summary

The registration of deaths of 97 infants and 44 pre-school children who died in the area of the Medical Officer of Health, Kopay was studied. The deaths of 64% of the infants and 66% of the pre-school children were not registered by the Registrar of Births and Deaths. Ninety Six of these 141 children died in hospitals and 49% of these deaths were not registered. The reasons for non-registration are discussed, and suggestions for improvement in registration are given.

Introduction

This paper is a by-product of a study undertaken to determine the pattern of mortality among infants and pre-school children. During this study, under registration of infant and pre-school deaths came up prominently, and this was investigated.

The infant mortality rate (IMR) of a country or region is taken as a good indicator of the socio-economic conditions of that place. The IMR for Jaffna is reported as 18 per 1000 live births,[1] and this figure compares well with that of the developed world. This low rate as compared with the national figure of 35, has been the subject of discussion by several research workers, including Patel[2] recently. The low rate may be due to the well known factors like high literacy rates, high socio-economic status, effective health services etc.; or due to poor registration of deaths. In fact, Rao[3] has suggested 11 comprehensive studies of various aspects of death registration in the districts of Sri Lanka. The IMR in the 24 administrative districts in Sri Lanka range from 18 to 79 per 1000 live births (Table 1).

It was generally felt that these rates, especially those that are low, may be inaccurate. Therefore, during our study on infant deaths we also looked into the accuracy of registration.

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Ceylon Medical Journal, 1984, 29, 177-184.

Area of Study

The study was carried out in the area of MOH Kopay which has a population of 111,649 (estimated for 1982) living' in 136 square kilometers. The area is divided into 20 public health midwife (PHM) areas. At present there are only 16 PHMs in the area, four posts being vacant, and the work in these areas is looked after by the adjoining PHMs. The area of study has a mixed urban and rural population and is representative of the rest of the Jaffna district.

Table 1: Infant mortality rates by selected districts, 1979[1]

District	Infant mortality rate (per 1000 live births)	Rank (by all 24 districts)
Iaffna	18	1
Mullaitivu	18	1
Polonnaruva	18	1
Trincomalee	19	4
Anuradhapura	21	5
Galle	38	20
Ratnapura	55	21
Badulla	57	22
Kandy	60	23
NuwaraEliya	79	24
Sri Lanka	38	-

There is a central dispensary (Kokuvil), a central dispensary and maternity home (Kondavil), a peripheral unit (Atchuvely) and a rural hospital (Kopay), within the area of study. The rural hospital has a medical officer and the other medical institutions have Assistant Medical Practitioners. The Base Hospital, Point Pedro is about l6 kilometers from the northern end of the area of study, and the General Hospital, Jaffna is about 35 kilometers from its southern end. Both these hospitals have pediatricians. The channel of referral from the medical institutions in the area is directly to the Base Hospital, Point Pedro or General Hospital, Jaffna. In addition, the people have access to several western and Ayurvedic medical practitioners in the area, and in the adjoining Jaffna town.

Materials and Methods

The period of study was one year from 1st June 1982. The public health midwives were requested to notify all deaths of children below 5 years, occurring in their area or in the areas they were looking after. Trained health volunteers assisted them. The deaths in the area were also obtained from registers in the hospitals

in the area, General Hospital Jaffna and Base Hospital, Point Pedro. Deaths were also detected by visiting schools (during the 'measles survey') and enquiring from children regarding deaths in their families or neighborhood. For the purpose of our main study, every notification was investigated by one of the authors by visiting the homes of the deceased.

Five months after the completion of the study, the PHMs were requested to visit again these homes and ascertain whether the deaths were registered. If not registered, the reason for non registration was enquired.

In the case of all hospital deaths, the authors checked the notes or bed head tickets (B.H.T.) of the case, the hospital death registers, and the records of the registrar of births, and deaths, in order to confirm the registration of deaths.

Results

During the one year period of study, 141 children under 5 years died in the area. 97 (69%) of them were infants, and 44 (31%) were pre-school children (Table 2).

29 (30%) of the infants, and 16 (26.4%) of the pre-school children died at home in spite of the availability of free health care services within a few kilometers from their residences. Of the 141 deaths, 96 (64.5%) remained unregistered at the end of five months after the completion of the study. Of the infants, 64% and of the pre-school children, 66%, were not registered (Table 3).

Discussion

In spite of the area of study being provided with free health services, and being in close proximity to a general or base hospital with availability of the services of paediatricians, 30% of the infant deaths and 26.4% of the pre-school deaths have been in the homes.

This study shows that only 36% of the infant deaths have been registered. Half the infant deaths in the hospitals have not been registered and only one out of the 29 infant deaths at home has been registered. Even this single registration was due to the over-enthusiasm of a public health midwife who notified the death.

The number of births reported by the public health midwives in the areas (including the vacant areas) for 1982, was 2738. The IMR calculated from the 97 infant deaths is therefore 35.4/1000. It is possible that this figure is also an underestimate as the reporting of deaths from the few PI-IM areas where there was no permanent PHM has been incomplete. On the basis that only 36% of the infant deaths are being registered, and assuming that the area of study is representative of the Jaffna District, the correct IMR for the Jaffna District should be around 50/1000 live births. Hence the IMR for Jaffna is probably a figure between 35.4 and 50/1000 live births, and not 18 as reported in official statistics.

Out of the 96 children (0-4 years) who died in a hospital 81 (84.4%) died at General Hospital, Jaffna. Of these, 36 (44.5%) remained unregistered, 5 months after the study was completed. It is unlikely that the unregistered deaths will be registered in the future, since registration of deaths after 3 months is a tedious procedure_ and neither parents nor the hospital authorities are likely to initiate such a course of action.

Of the 45 deaths at home, only one death was registered and of the 96 hospital deaths, 49 were registered. The reasons given for non-registration by the parents, whose children died at home, are shown in Table 4

The percentage of under registration in hospitals ranged from 40% to 100% (Table 5). It is to be noted that 44.5% of the deaths were not registered even in General Hospital, Jaffna.

The 81 deaths which occurred in General Hospital, Jaffna were followed up retrospectively to determine the points at which there was a failure in the registration of deaths (Table 6). Out of the 81 deaths, the bed head tickets could be traced only in the case of 58. All these Bed Head Tickets (B.H.Ts) had the cause of death certified by the medical officer. The B.H.Ts of the balance 23 deaths could not be traced. These deaths had not been registered by the registrar of births and deaths. Out of the 58 deaths where a medical officer had certified death, only 55 were entered in the hospital death register. Of these 55, only 45 were finally registered by the Registrar of births and deaths, after five months since the event occurred.

Table 2: Deaths of children 0-4 years by place of death

Place of death	Infants (under 1 year)	Pre-school children (1-4 years)	Total (0~4 years)
Hospital	68 (70%)	28 (63.6%)	96 (68.1%)
Home	29 (30%)	16 (26.14%)	45 (31.9%)
Total	67 (100%)	44 (100%)	141 (100%)

Table 3: Under registration of deaths of children 0-4 years by place of death

Place of death	Infants (under l year)		Pre-school children (1-4 years)		Total (0—4 years)	
	Number of deaths	Number not registered	Number of deaths	Number not registered	Number of deaths	Number not registered
Hospital	68	34 (50.0%)	28	(46.4%)	96	(49.0%)
Home	29	(96.6%)	16	(100%)	45	(97.8%)
Total	97	(64.0%)	44	(66.0%)	141	(64.5%)

Table 4: Reasons given by parents for non registration of their children's deaths that occurred at home

Reason	Number
Ignorance that death had to be registered	10
Small child	9
Non possession of food subsidy stamp by the child	5
Lack of domestic help	3
Miscellaneous (One mother was a psychiatric patient on investigation by the authors)	5
No reason given	12
Total	44

Table 5 Registration of hospital deaths

Name of hospital	No. of deaths	Unregistered deaths	
		No.	%
General Hospital, Jaffna	81	36	44.5
Base Hospital, Point Pedro	5	2	44.0
Local hospitals	2	2	100.00
Private nursing homes	8	7	87.5
Total	96	47	49.0

Table 6: Pathways leading to registration and non registration of deaths at General Hospital, Jaffna *(Numbers indicate deaths)*

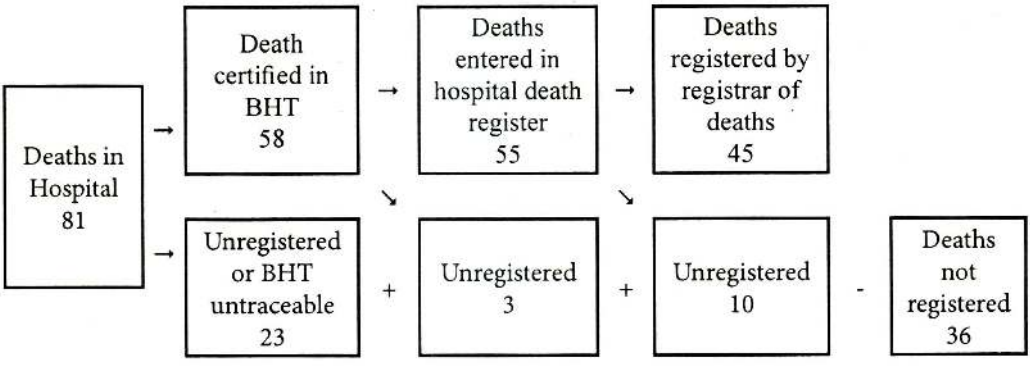

Table 6 shows the points at which registration failed. In the case of 23 deaths (28.4%) the B.H.Ts were not traceable, and therefore it was not possible to ascertain whether death was certified or not. However none of these 23 deaths had been registered by the registrar of deaths. In a majority (63.9%) of cases of non registration, the B.H.Ts was not traceable. In a considerable number (27.8%)

of cases of non registration, the deaths have been entered in the hospital death register but not registered by the registrar of births and deaths. The commonest reason given is that the diagnosis has not been entered in the death register and this in turn was mainly due to the BHT being misplaced. We feel that the loss or misplacement of the B. H. T, which is due to it being carried from one place to another, plays an important role in the under registration of hospital deaths.

The authors suggest that a form (annex 1) be used whenever a death occurs in the hospital. These forms, in addition to ensuring complete or near complete registration in hospitals will also facilitate any future studies on mortality. The annexed form is being tried out at General Hospital, Jaffna. Registration of vital events forms the foundation of a sound vital statistics system, which in turn is the basis for health planning. Research on published data that is inaccurate may not give reliable conclusions; for example it has been claimed that the lowest IMR in Sri Lanka is in Jaffna and that it is better than the IMR in Washington D. C.[4] As such we recommend that registration of deaths, especially infant deaths be organized in a more systematic manner.

Acknowledgements

We are grateful to Dr. C. S. Nachinarkinion, Medical Superintendent, Teaching Hospital, Jaffna and Dr. K. Mylerumperumal, District Medical Officer, Point Pedro for allowing us to study the patients records in their hospitals. We thank the Public Health Midwives of the Health Unit, Kopay for their assistance. We are also thankful to Miss M. Canaghasabai for the clerical assistance throughout the study and typing the script.

The study was carried out with funds made available from the Thillaiambalam~Kanagasabai fund of the University of Jaffna.

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(Published in N. Sivarajah, C. Sivagnanasundram and A. Wijayaratnam, *Ceylon Medical Journal*, 1984, 29, 177-184.)

Annex 1

REGISTRATION OF DEATHS

Name of Hospital: Serial Number:.....
(Give number entered in C. 1)
(To be completed by overseer)

Part A, B and C must be completed before any dead person is removed from the hospital.

PART A.

(To be completed by the nurse in charge of the ward where the death occurred, or by the overseer if he/she was dead on admission).

A.1 Full name of deceased:.... ....

A.2 Full Address:..... .....
(To be obtained from next of kin and checked with B. H. T)

A.3 Age: Days/ Months/Years B. H. T. Number:.....

A.4 Sex: Male/Female Ward Number:.....

A.5 Date of death:.... ..... Ward death Register Number:.... .....

A.6 Time of death:.... ..... a. m/p. m.

....
(Signature of Nurse/Overseer)

PART B*

(To be completed by the medical officer who attended on the patient or performed the post mortem)

CAUSE OF DEATH I		Approximate interval between onset and death
Disease condition directly leading to death‡	a)	.....
	due to (or as a consequence of)	
Antecedent causes		
Morbid condition, if any, giving rise to the above cause, stating the underlying condition last.	b)	....
	due to (or as a consequence of)	
	c)	

* Taken from The International Classification of Diseases Volume 1 1975 Revision. World Health Organization, Geneva (1977).

‡ This does not mean the mode of dying e. g. heart failure, asthenia, etc. It means the disease, injury or complication which caused death.

II **Other significant conditions** contributing to the death but not related to the disease or condition causing it	.....	.....

Diagnosis made (Tick appropriate column) Clinically ☐ Postmortem ☐

..... (Name of medical officer) ..... (Signature of Medical officer)

Designation:..... Date:.....

PART C.

(To be completed by the overseer after entering the particulars in the register

C.1 Death register Number:.....

C.2 Name and address of the person to whom the body was handed over: .....

.....

.....

.....

(Signature of overseer)

PART D.

(To be completed by the Registrar of Births and Deaths and returned to overseer)

D.1 Date Registered:.. ....

D.2 Registration Number:..... .....

..... (Signature of the Registrar of Births & Deaths)

PART E.

(To be completed by the overseer after making the entries in part D, in the Death Register)

E.1 Date received from the:.....

..... (Signature of overseer)

PART F.

(To be completed by the R. M. P.)

I have checked parts A to E found them to be completed.

..... (Signature of R. M. P.)

After completion of parts A to F the forms should be filed in order by the RMP and submitted monthly to the Medical Superintendent, for perusal.

A separate file should be maintained for each year.

A Study of the Knowledge and Attitudes of Students in a Girls School Regarding Population and Family Planning

Introduction

This is at preliminary study to get information on the knowledge and attitudes of students, in a girl's school regarding population and family planning. The data collected will be of some benefit in planning population education programmes in schools. The findings of the study show the importance of collecting this information before a programme of education on family planning and allied subjects.

Materials and methods

The General Certificate of Education, ordinary-level and advanced-level students in a semi-urban girl's schools were selected for the study. A seminar on population education and family planning lasting 2 hours, was arranged with the collaboration of the head of the school and the department of education. Sixty five O-level students and sixty A-level students attended the seminar. Sixteen teachers who taught in the school also attended the seminar.

The mean age of the students in the O-level class was 16.4 years (Range 15-18 years) and of those in the A -level class was 17.7 years (Range 16-21 years). The age of the teachers ranged from 31 years to 50 years with a median of 39 years. There were 2 male teachers and 14 female teachers.

A questionnaire containing 13 questions of which 12 were multiple choice questions was issued. The first four questions were designed to test the knowledge regarding, the population 'of Sri Lanka, the population of the Jaffna District and the knowledge regarding birth and death rates. The next eight questions were aimed at identifying their attitudes towards the age of marriage, the interval between marriage and the first child, family size and preference for male and female children. The last question was to test the knowledge regarding family planning methods.

Results

Demography

88% of the students and 94% of the teachers were able to indicate correctly the population of Sri Lanka. (Table I) However, only 12.3% of the O-level students. and 25.6% of the A-level students were able to give the percentage of the population living in the Jaffna District. The difference between them is statistically significant. (P=<0.05)

Table 1: Knowledge Regarding Popuiation and Birth and Death Rates

(Percentage giving correct answers)

	O-level	A-level	Teachers
Knowledge regarding population of Sri Lanka	87 6 %	88 3 %	94 %
Knowledge regarding population of Jaffna	12.3 %	26.6 %	38%
Birth rate	16 %	31.6 %	25%
Death rate	23%	38%	31%

Only 16% of the O-level students and 31.6% of the A-level students were able to indicate correctly the number of births they would expect in a population of 1000. The difference between the O-level and A-level students were statistically significant. (P=<0.05).

23% of the O-level students and 38.3°/n of the A-level students were able to give the number of deaths they would expect in a population of 1000. The difference between the O-level and A-level students was not statistically significant.

Age of Marriage

A majority of the students in the O-level (66.2%) preferred a lower age of marriage for girls (Table 2). In the A-level the shift was towards a higher age of marriage. 60% preferred to get married between 15 and 29 years. The attitude of the teachers was similar to that of the O-level students.

The attitudes regarding the age of marriage for boys also showed a similar shift with A-level students preferring a higher age (Table 3). A majority of students in both classes preferred to maintain a 5 year gap between the partners. Here too the teachers' attitudes were similar to that of the O-level students.

Late marriage is one of the methods adopted to control an increase in population. In China' the late marriage rate ranges from 87.6 to 96.6% in the different provinces. (Late marriage rate is the percentage of couples marrying in a calendar year, at or after the ages set by the late marriage norm.)

Interval between Marriage and First Child

37.7% of the O-level and 90% of the A-level students wished to have their first baby during or after the 2nd year of marriage. A majority (41.5% of the O-level, and 41.7% of the A-level students) wished to have their first baby during the 2nd year of marriage. (Table 4)

Table 2: Attitudes regarding ideal age of marriage for girls

Age of Marriage	O-level	A-level	Teachers
Under 20	1.5%	3.3%	-
20 - 24	66.2%	36.7%	62.5%
25 - 29	30.8%	60.0%	37.5%
30 and over	1.5%	-	-

Table 3: Attitudes regarding ideal age of marriage for boys

Age of Marriage	O-level	A-level	Teachers
Under 20	1.5%	0	0
20 - 24	16.9%	3.3%	0
25 - 29	63.1%	40.0%	56.3%
30 and over	18.5%	56.7%	43.7%

Table 4: Interval between marriage and first baby

Year after Marriage	O-level	A-level	Teachers
1st	12.3%	10.0%	6.2%
2nd	41.5%	41.7%	37.5%
3rd	26.2%	33.3%	43.8%
4th	12.3%	13.3%	12.5%
Other	7.7%	1.7%	0%

Table 5: Family size (No. of children they would like to have)

No. of Children	O-level	A-level	Teachers
1	0	0	0
2	83.1%	76.7%	43.8%
3	6.2%	20.0%	12.4%
4	10.7%	3.3%	43.8%
Over 4	0	0	0

Family Size

A majority of the student: (83.1% of the O-level and 76.7°/, of the A-level) wished to have n 'two child' family. Not even a single student wished to have more than four children. 43.8% of the teachers preferred 4 children. In countries like China[1], 95% of married couples in the cities and 90% of married couples in the country side are expected to have a one child family. The idea of the 'one child family' is being gradually introduced into this country too. But not even a single student wished to have a one child family.

Preference for Male and Female Children

A majority of the students (93.8 % of the O-level and 83 3% of the A-level students) indicated that there must definitely be a male child in the family. (Table 6) Similarly, a majority of the students (92.3% of the O-level students and 86.7% of the A-level students indicated that there must definitely be a female child in the family. (Table 7)

This creates a situation where a family with two children of the same sex will try to have a child of the opposite sex. Since no one in the study group wished to have more than 4 children it is likely that they will try until they have 4 children and then stop.

60% of the O-level and 63% o" the A-level students indicated that their first child should he a boy. (Table 8)

Family Planning Methods

The knowledge regarding family planning methods was poor 74 % of the O-level students and 38% of the A-level students could not mention a single temporary method of contraception (Table 9), though a good majority of the students wanted to postpone the birth of their baby to the second or subsequent years of marriage. Out of the temporary methods mentioned a majority of students mentioned oral contraceptives. (Table 10) The knowledge regarding the permanent methods was also poor. (Table 11). In this study, whenever 'stertilisation' was mentioned it was taken as female sterilization and counted as one method only. Only one student in the A-level classes mentioned vasectomy as a permanent method of contraception.

Knowledge and Attitudes of Teachers

The study was originally planned only for the students. Bur the l6 teachers who attended the Seminar were also requested to answer the questionnaire. The total number of teachers in the school were 38 and only 16 attended the seminar.

Regarding demographic data and vital statistics the knowledge of the teacher; was not much different from that of the students. (Table l, 2, 3, 4)

Table 6: Preference for male child (Question: Do you definitely need a male child?)

	O-level	A-level	Teachers
Yes	93.8%	83.3%	93.7%
No	6.2%	15.0%	6.3%
No answer	-	1.7%	-
	100%	100%	100%

Table 7: Preference for male child (Question: Do you definitely need a female child?)

	O-level	A-level	Teachers
Yes	92.3%	86.7%	93.7%
No	6.7%	11.6%	6.3%
No answer	-	1.7%	-
	100%	100%	100%

Table 8: Preference for the first child to be a boy

	O-level	A-level	Teachers
Yes	60%	63%	31%
No	40%	35%	69%
No answer	-	-	-
	100%	100%	100%

Table 9: Knowledge regarding permanent family planning methods

No. of methods	O-level	A-level	Teachers
1	38%	58%	31%
2	0%	2%	0%
None	62%	40%	69%
	100%	100%	100%

Table 10: Knowledge regarding temporary family planning methods by number of methods

No. of methods mentioned	O-level	A-level	Teachers
1	15%	35%	6%
2	6%	17%	25%
3	5%	10%	6%

Four and above	74%	38%	63%
	100%	100%	100%
	100%	100%	100%

Table 11: Knowledge of temporary methods of contraception by methods

Method	O-level	A-level	Teachers
Oral contraception	48%	60%	27%
IUCD	14%	18%	46%
Depoprovera	38%	15%	9%
Condom	0%	7%	9%
Coitus interruptus	0%	0%	0%
	100%	100%	100%
Total number of methods mentioned	21	57	11

The teachers preferred a lower age of marriage (20-24 years for girls and 25-29 years for boys) and were comparable to the O-level students. However unlike the O-level students, 93.8% of them preferred to have their first baby during the second or subsequent year of marriage. One striking feature was that 63% of the teachers could not mention a single temporary method of contraception and (19% could not mention a permanent method. A majority of teachers mentioned IUCD as a temporary method of contraception. Some of the 'contraceptive methods' given by the teachers were late marriage, natural method, abstinence and involvement in social activities.

Discussion

The idea of introducing population education in schools has been discussed for over a decade. In March 1972, the curriculum development centre, at a seminar organized in collaboration with the Ministry of Planning and Employment recommended the introduction of population education in schools.[2]

Eleven years after this recommendation, population education is only being carried out in a limited way, in the O-level, by including demographic data and effects of population explosion in Mathematics, General Science and Social Science.

Several views have been expressed regarding the implementation of population education in schools? Population education would have to involve more than knowledge of family size and proportion if the introduction is to bring about behavioral changes in the young school leavers.

According to this study the attitudes towards the family size appears to be in keeping with the present programmes. However knowledge about family planning methods is severely lacking especially among the O-level students.

In the Jaffna District, over 95% of the '5 year olds' enter school.[3] Of them 39.3% reach the O-level class. Of the students in the O-level, 30% will continue their studies in the A-level. The balance 70% is to leave school and probably start raising a family. Since the mean age of marriage of a female in Sri Lanka is 24 years and since the mean age of an O-level student (as in this study) is 16.4 years, a girl has about 8 years between leaving school and getting married to gather information regarding family planning. But unfortunately such information is not freely available to an unmarried girl. Therefore it is essential that population education (including sex education and family planning methods) should be introduced in schools-especially for girls. The content area should include the physiology of menstruation and contraception by oral pills, injection and IUCD. With this basic idea, they could widen their knowledge later. The next question is as to who should impart this knowledge. The best person is no doubt the class teacher. But before this is started, the knowledge and attitudes of the teachers should be evaluated.

The present study involving the teachers is not satisfactory. The teachers who attended the seminar may have been those who did not know about family planning and therefore come for the seminar and hence a biased sample.

This study raises a question of fundamental importance. Are teachers with the present knowledge and attitude suitable to impart population education to students? This is a subject for further study.

Acknowledgements

I wish to thank Mr. S. Thevadasan of the Department of Community Medicine Faculty of Medicine, Jaffna, for assisting in the statistical work.

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BCG Vaccination and Development of a Scar*

10

Summary

Nine hundred and seventy six children who had been given BCG vaccine previously were examined for the presence of a scar. It was found that 13.9% of them did not have scar. The absence of a scar was more among those who were given BCG immediately.

Introduction

BCG vaccine was included in the Expanded Programme of Immunization (EPI) and island wide coverage was commenced in 1978. EPI coverage assessment surveys have indicated that there was almost 100% coverage for BCG. But at the same time there were a considerable number of BCG vaccinations being given in grade 1 during school BCG vaccination programmers.

It was also noted by the authors that several children who had been given BCG had not developed a scar. This study was carried out to estimate the proportion of children who did not develop scars following BCG immunization and to identify the reasons for the absence of scars.

Material and methods

The study was carried out in the Kokuvil – Kondavil Community Health project (KKCHP) area which is the field training area of the faculty of Medicine, University of Jaffna.

The area had an estimated mid -year population of 29,250 during 1985 and 29,700 during 1986. The study population consisted of all children born during the 2 year period from 01.01.85 and registered by the family Health Workers (FHW).

These children were examined by one of the authors for the presence of a BCG scar.

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Ceylon Medical Journal, 1990, 35, 75-77.

Results

The FHW registers indicated that 1,337 children were born during the period of study (01,01,85 to 31.12.86) The estimated births for 1985 and 1986 were 1 356, calculated on the basis of a birth rate of 23.2 for 1985 and 22.9 for 1986 for Jaffna District[2 3]

Of these 1 337 children, 976 (73.6%) attended the KKCHP area clinics and were examined for scars. According to records available, all these children had been given BCG. Out of the non-responders, 147 (11%) had left the area, 24 (1.8%) had died and 190 (14.12%) were attending clinics outside the KKCHP area

Table 1: Place of delivery and time of BCG vaccination

Place of delivery	Number vaccinated Before leaving hospital	Number vaccinated subsequently	Total	%
General Hospital Jaffna	641	15	656	67.2
Maternity Home	26	72	98	10.1
Peripheral Unit	32	1	33	3.4
Private Nursing Home	10	122	132	13.5
Home	-	39	39	4.0
Not recorded	10	8	18	1.8
Total	719(74%)	257(26%)	976	100.0

Table 1 gives the place of delivery and the time of BCG vaccination. 719 (74%) children were vaccinated before leaving hospital and the balance were vaccinated at the child welfare clinics. Among those who were vaccinated subsequently, only 51.4 were given the vaccine within the stipulated 4 weeks after delivery.

Of the 257 who were not vaccinated soon after delivery, 93.8% were not vaccinated due to non availability of vaccines at the place of delivery. The balance were not vaccinated due to an illness or prematurity.

Of the 976 children examined 136 (13.9%) did not have a BCG scar. The presence of scar by time of vaccination is given in table 2 Among those who were vaccinated immediately after delivery, 17.1 did not develop a scar and among those vaccinated later at the clinics, 5.1% did not develop a scar. The difference is statistically significant ($P<0.01$)

Of the 136 children who did not have a scar, 124 were revaccinated and every one of them developed a scar. One child developed two scars. The balance 12 who were interviewed at the beginning of the survey were not vaccinated.

Table 2: Time of BCG vaccination and presence of scar

Time of	Number of Children given BCG	Number of children without scar	Percentage without scar
Before leaving hospital	719	123	17.1%
After leaving hospital	257	13	5.7%
Total	976	136	13.9%

Source: Ceylon Medical Journal

Discussion

According to the EPI, BCG vaccine has to be administered between 12hours after delivery and before discharge from hospital or within 4 weeks of delivery[3], Vaccination after leaving hospital is usually carried out in child welfare.

On intradermal administration of BCG vaccine a swelling appears at the site of injection. Two or three weeks later a small red slightly tender swelling develops and remains for another week. This develops into a small abscess which ulcerates and crusts. The crusts disappear leaving a small red swollen scar which becomes smaller, paler and sunken and remains for years When BCG vaccine is given the appropriate entry is made in the immunization record, and this is taken as proof of successful immunization. No verification is done to identify whether a scar has been formed. Hence these children are missed until they enter school; where all children without a BCG scar are given BCG vaccine.

The finding that 17.1% of the neonates given BCG in hospitals do not develop a scar is significant.

The reason for non-development of the scar may be

1. Faulty technique, including leaving the prepared vaccine for long periods, leaving the prepared vaccine near a flame or in direct sunlight, not expelling the vaccine in the heated needle, and injecting subcutaneously instead of intradermally.

2. Use of vaccine which is not potent.

3. BCG may not have been given even though an entry is made, This could happen, since the cards are usually completed before the vaccination is given. Some mothers could slip away with their babies during this procedure.

4. The immune response system may not have been developed sufficiently immediately after delivery. This may explain the higher scar rate when vaccinated in the clinic.

It is recommended that extra care should be taken when BCG is given in hospitals. FHWs should look for the scars when children come for DTP vaccine and mark it on the immunization record. The presence of a scar should be taken as proof of vaccination and not the entry that BCG has been given.

Further studies are necessary to find out whether this phenomenon is island wide and also to determine, whether there are sufficient antibodies in spite of the scar being absent.

Acknowledgements

The authors thank the field staff in the KKCHP area for the assistance in conducting this study.

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Infant Deaths in a Health Unit Area of Northern Sri Lanka*

11

Summary

Ninety-seven infant deaths that occurred during 1 year were almost equally distributed in the neonatal and post-neonatal periods. The low infant mortality rate (IMR) reported for the area was found to be due to poor registration of deaths. The actual IMR is 35.4. Lower respiratory tract infections and gastroenteritis were the chief causes of death, with low birth weight contributing to it. Among these deaths, as a conservative estimate, 20 have been identified as preventable. Prevention of these deaths would reduce the IMR to 28.1. Practitioners of indigenous medicine need training on the management of dehydration in infants, and the mothers should be taught the proper use of oral rehydration solution. Families belonging to low 'social caste' were more at risk of infant deaths. This study shows the importance of small, community-based investigations in order to identify vulnerable small socio-cultural groups in developing countries.

Introduction

Demographic statistics published in Sri Lanka (Department of Census and Statistics, 1982) gives the island's IMR for 1979 as 38 per 1000 live births. It also shows regional differences in the rates ranging from 79 in the NuweraEliya District to 18 in the Jaffna District in the northern region. This regional variation has been the subject of discussion at seminars that attempted to postulate the possible reasons for it, such as medical care, socio-economic levels, nutrition, sanitation and housing.

We present a descriptive epidemiological study of infant deaths in one health unit in the district of Iaffna.

Materials and Methods

Area and Population

This study was performed in the area of Health Unit Kopay, in the district of Jaffna. It has a population of 111, 649, and is divided into 20 Public Health Midwives

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(PHM) divisions. It consists of peri-urban and rural agricultural areas and adjoins the municipal town of Jaffna. There are two rural hospitals, four central dispensaries, one maternity home and 14 maternity and child welfare centres in the area. The Jaffna General Hospital is 5 miles away from the centre; 10 miles away from one border of the area is Base Hospital, Point Pedro. Communication by bus routes is good. Ninety-seven infant deaths that took place during l year (1 Iune 1982-31 May 1983) are analyzed.

The Survey

The number of births in the area was reported by PHMs who collected this by field visits, from health volunteers and in child welfare clinics. The infant deaths were reported by PHMs, Public Health Inspectors and volunteers, and collected from hospital registers. Children in schools were also asked regarding infant deaths in their families and neighborhood; this gave us deaths undetected by other methods. Every infant death was investigated by one of us, by interviewing the mother in her home and consulting hospital records. An investigation form was used to record the data pertaining to the birth and death of the infant, the socio-economic factors of the family and the use of the health services. Enquiry about most of the deaths was undertaken within 1 month of the event.

Causes of death were given by the attending physician. In the case of home deaths, the illness was identified from hospital records if treatment was obtained. Otherwise, the investigators arrived at a presumptive diagnosis from the history and signs described by the mother. A post mortem was performed in only one of these deaths.

Results

Registration of Deaths and IMR

There were 2738 births and 97 infant deaths during the 1 year period, giving a birth rate (BR) of 24.5 per 1000 population and an IMR of 35.4 for the health unit area of Kopay. The reported BR and IMR for Jaffna district to which Kopay belongs, are 28.6 and 18, respectively (Department of Census and Statistics, 1982).

Only 35 (369/1,) of the 97 infant deaths were found to have been registered, and this figure would have given a rate of 12.8 in official documents, instead of the actual rate of 35.4. Twenty-five deaths took place in the homes and none of these were registered; of the 62 deaths in the two large hospitals only 34 (55%) entered the registrar's records.

Age and Causes of Death (Table l)

Fifty-one infant deaths (52.6%) were in the neonatal period. Four-fifths of these were within 7 days. All except two were born in hospital. Of the 46 post-neonatal deaths, 21 were over 6 months, i.e. 21.6% of all deaths.

Lower respiratory tract infections (pneumonia and bronchiolitis) and gastroenteritis (47.4%), together with low birth weight were the diagnosed causes of 62.9% of the infant deaths. In the post-neonatal period 76.1% of the deaths were due to lower respiratory tract infections and gastroenteritis. The nine cases classified as 'others' were meningitis (2), encephalitis (2), convulsions (2) and one each of asphyxia, chicken pox and intussusception.

Lower Respiratory Tract Infections (LRTI)

Deaths due to pneumonia and bronchiolitis (Table l) are considered under LRTI.

Table 1. Causes of death in neonatal and post-neonatal periods

	Neonatal		Post-neonatal	Infant	
Causes	7 days and under	8-30 days		Number	Per cent
Pneumonia	6	2	14	22	22.7
Bronchiolitis	0	2	2	4	4.1
Gastro-enteritis	0	1	19	20	20.6
Low birth Weight	12	3	0	15	15.5
Asphyxia in new born	6	0	0	6	6.2
Congenital abnormality	3	0	2	5	5.1
Birth trauma	2	1	0	3	3.1
Haemolytic disease of new horn	2	1	0	3	3.1
Septicaernia	0	2	1	3	3.1
Other	2	1	6	9	9.3
Ill defined and unknown causes	2	3	2	7	7.2
	35 (36.1)	16 (16.5)	46 (47.4)	97 (100%)	100.0

Twenty-six deaths (26.8%) were clue to LRTI, 10 of them in the neonatal period. Five of these 10 infants were born at home and three had no treatment. Of the 10 neonates six were of low birth weight, two of these were born before term. All gave a history of respiratory distress and fever, and died within 24h of onset of symptoms. Of the 16 deaths in the post-neonatal period 10 occurred between 1-6 months and six after 6 months. Selected data concerning these 16 deaths is given below:

Number who had LRTI after measles	3(18-3%)
Number with malnutrition (under weight for age; < 80 % standard weight)	4 (25-0%)
Number from a satisfactory house	8 (50.0%)
Number who had western treatment only (nine of them in hospital)	l0 (62.9%)
Number who had indigenous treatment and were later hospitalized for western treatment	3 (18.8%)
Number of cases where treatment was delayed	5 (31.3%)
Duration of illness ranged from 2-14 days.	

Gastroenteritis

The deaths included in this category were those with suspected or proved intestinal infection. Only one was in the neonatal period. The 19 deaths in the post—neonatal period were spread evenly during the 11 months. Selected information related to these deaths is given in Table 2.

The duration of illness ranged from I to 40 days (median 6 days). Fifteen infants were hospitalized for a period, from 0.5 h to 40 days (median 3 days). Three were discharged as being cured, but had a relapse and died at home within 2 days. In six cases the delay of 14 days in getting effective treatment for dehydration could be attributed to the child being given indigenous medicine (*Siddha Ayurvedic*), before western treatment. In three cases the delay was due to neglect by the mother, two of whom were separated from their husbands and one a mentally ill patient. In another case, seeking occult help by tying a charmed thread was the cause of the delay. All of the IO mothers to whom oral re-hydration solution (ORS) was given for their children had little or no knowledge of the proper use of the solution, and had given insufficient amounts, some using medicinal—sized doses.

Low Birth Weight

Of the 51 deaths in the neonatal period 34 (66.6%) were known to be 2500g or less at birth. Only one of them was born at home with a congenital defect and was admitted to hospital immediately. The cause of death of 15 of the 34 infants was given as 'low birth weight'. In 13 of them the following conditions were associated: pre-eclampsia (4), mitral stenosis in mother (2), placental necrosis (1), twins (6) which included both twins in two pairs. All mothers had received antenatal care in clinics, nine of them regularly. The deaths of the remaining 19 infants were attributed to other causes. This includes six of the 10 neonates dying of LRTI.

Among the post-neonatal deaths, four of the 16 deaths attributed to LRTI and four of the 19 deaths attributed to gastroenteritis occurred in low birth weight infants.

Table 2. Selected data of 19 post-neonatal deaths due to gastroenteritis

Information	Yes/present	No/absent	Not known
Dehydration	16	0	3
Malnutrition	7	10	2
ORS given	10	9	
Delay in treatment	10	9	
Western treatment only	10	-	
Indigenous and later western treatment	8	-	
Horne remedy only	1	-	
Availability of latrine	9	10	

Table 3. Deaths by family income*

	Neonatal		Post-neonatal		Infant	
Rupees**	No.	%	No.	%	No.	%
450 and below 7	7	13.7	15	33.3	22	22.9
451-1000	38	74.5	29	64.4	67	69.8
Over 1000	6	11.8	1	2.2	7	7.3
Total 51	51	100.0	45	99.9	96	100.0

**Income of one family was not recorded.*

*** £ 1 = IRs. 32).*

SOCIO-ECONOMIC FACTORS

Occupation

Fifty-three fathers (54.6%) were laborers. The rest belonged to semi-skilled and clerical grade. Only 10 mothers were employed, nine as laborers and one as a pharmacist. Income Deaths of the infants by family income is shown in Table 3. Among the 22 deaths in the less than Rs.450 income group, seven (31.8%) were in the neonatal period, while in the over Rs.450 group 59.6% (44 out of 74) of the deaths occurred in the neonatal period, a difference that is significant (X2 =5.9, df= 1, P<0.02).

Social Handicap

Of the 97 deaths 49 (50.5%) Were infants whose parents had a 'social handicap' as they belonged to the lowest ranks in the Hindu caste system. Of the 51 neonatal deaths, 25 were in this group. There was no statistical difference by caste between the deaths in the neonatal and post—neonatal periods (X2 =0.11, d.f.= 1, P=NS). Of the 22 families in the under Rs.450 income group 16 (72.7%) had social disability.

Education

Ten (10.3%) fathers and eight (8.2%) mothers had no education; all of these, except one father were in the low caste group. Thirty-one (32.0%) fathers and 28 (28.9%) mothers had education up to 5 years at school. Of these 59 parents, 44 belonged to the low caste.

Clinic Visits

Antenatal visits of 71 (73.2%) mothers were satisfactory. Among the 'low caste' group compared with the rest, the percentages of satisfactory visits were 63.3% and 83.3%, respectively, a difference that is significant (;¢1=4.7,d.f.=1,P<0.05).

Housing, Water Supply and Latrines

Fifty-three (54.6%) families had unsatisfactory housing conditions; 61 (62.9%) had no Well of their own; 45 (46.4%) had no latrines.

Further analysis showed that 45.1% (23) families of the neonatal deaths and 65.2% (30) of the post-neonatal deaths had unsatisfactory housing, and this difference is significant (x'=4.o, d.f.= 1, P<0.05). The difference between families with neonatal and postneonatal deaths as regards availability of latrines and wells is not significant.

Of 49 families that belong to the low caste 39 (79.6%) had an unsatisfactory house, 42 (82.7%) no latrine and 42 (82.7%) no well of their own. Thirty—four (69.4%) had all three of these disadvantages.

Discussion

Only 62% of the infant deaths were registered in the Kopay area. This was an incidental finding, and was unexpected, as the district of Jaffna has a high literacy rate of 85.5% (Central Bank of Ceylon, 1983), and 71% of the deaths took place in government hospitals. It is very likely that there is under-registration in the other seven health unit areas in this district, which accounts for the low IMR of 18 given in official statistics. The figure obtained by us for Kopay is 35.4 and this is comparable with the figure of 38 reported for the whole island.

The percentage of deaths in the neonatal and post-neonatal periods is almost equal. In developing countries the post-neonatal component of infant deaths lies between 60 and 80% (Harfouche, 1979), and in developed countries it is around 32%. The mixed socioeconomic features of Kopay—high rate of literacy, high use of clinical and hospital services (maternity and child care), but low income and poor environmental conditions— are reflected in the neonatal and post-neonatal distribution of infant deaths.

PREVENTABLE DEATHS

Data on the causes of deaths show that a reduction in the infant mortality is possible in the study area, and it is more easily achieved by reducing the 'preventable deaths' in the post-neonatal period. Neonatal causes of death appear less amenable to correction. Of the 51 infants who died in the neonatal period, all except two were born in a hospital, 37 of them in a major hospital. The care at delivery may be considered satisfactory. Further refinement in obstetric are would be beyond the means of this country for some time. Low birth weight has been the certified cause of 15 neonatal deaths and a contributory factory in another 19 deaths. The neonatal mortality rate in this study is 18.6. Prevention of deaths from LRTI, especially in the late neonatal period (8-30 days) could cause a slight reduction in this rate. In the post-neonatal period LRTI and gastroenteritis caused 74 % of the deaths. In our study malnutrition, measles and unsatisfactory housing conditions, were contributory factors to death from LRTI. Since many deaths have occurred even after inpatient treatment, hospital based studies of LRTI appear necessary in order to evaluate the efficacy of drugs, nursing care and other factors in hospital care. True pathology will still be in doubt unless post-mortem examinations are performed. Even under the prevailing circumstances we surmise that among the LRTIs, at least five deaths where treatment was delayed, and one death following measles could have been prevented.

Analysis of the deaths due to gastroenteritis reveal that severe dehydration was the cause in the 10 cases where treatment (rehydration) was delayed. These were preventable deaths. Six of the infants had been taken to Siddha Ayurvedic physicians, whose treatment did not correct dehydration. In four deaths, delay was due to neglect, ignorance and family disorganization. We have included four more deaths among the preventable deaths; three infants had been discharged from the hospital as fit to go home, but died within 2 days from relapse. Their mothers who were given ORS at the time of discharge did not know how to use it correctly. Another infant was given only home treatment. We stress the need for suitable training programmes on the management of dehydration to Siddha-Ayurvedic physicians. Effective education of the mothers on the use of ORS is essential in the treatment of diarrhoea in infants.

Thus, we have classified six LRTI deaths and 14 deaths due to gastroenteritis as preventable. Elimination of these deaths would have brought the post-neonatal mortality rate to 9.5 from the present 16.8; and there would have been a reduction in the IMR from 35.4 to 28.1—a figure that could be achieved under present Sri Lankan conditions. As in the case of LRTI, improvement in medical and nursing care of the cases of gastroenteritis may also reduce case fatality and therefore IMR.

INFLUENCE or INCOME

Although the median monthly income of families in the study zone was Rupees 451 (Central Bank, 1983), the deaths in the families earning below Rs.450 were only 22.9% (Table 3), i.e. much less than the expected 50 % , even if income is not an important factor in determining mortality. Among all neonatal deaths only 13.7% are in the under Rs.450 group, in which 73% have the social—caste disability. An explanation that could be given is that there may be a high rate of still births in this group and therefore deaths after birth, especially in the neonatal period are low. Only studies on pregnancy wastage could give a clearer picture.

SOCIAL HANDICAP

Half the infant deaths were in families of labourers, who predominantly belonged to the low social caste. Caste of the families appears to be a factor associated with the deaths, the 'low caste' group being more vulnerable. The social structure of the people of Iaffna is based on the caste system (Thambiah 1954). In this study we have grouped the Nalavars, the Pallas and Parayars who were earlier slaves of the high caste Hindus, as belonging to the 'socially handicapped' group which is comparable to the Indian 'scheduled castes'. Many of them still live in a state of abject poverty.

Population census by caste is not done in Sri Lanka, but the population in the low caste group in the study area, obtained from other sources is a figure between 30 and 35% of the whole population. The value of 50.5% for infant deaths in this group was therefore greater than had been expected.

The low caste group is handicapped in the important socio-economic parameters— environmental conditions, educational status and income. This study raises, perhaps for the first time in Sri Lanka, the association of caste and infant mortality. In developing countries similar cultural disparities may exist among various social groups and small scale community based studies help to expose the risk due to social disadvantages.

Acknowledgement

We are grateful to Dr C. S. Nachinarkinion Medical Superintendent, General Hospital Jaffna and Dr K. Mylerumperumal, District Medical Oficer, Base Hospital Point Pedro for allowing us to study the patient records in their hospitals. We thank the Public Health Midwives of the Kopay Health Unit for their assistance in this study.

Financial assistance for this study was provided from the Thillaiambalam—Kanagasabai fund.

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7வது உலக சைவ மாநாட்டின் அமைப்பாளர்களே, தலைவர் பண்டிதர் தம்பி அவர்களே, தவத் திரு சிவநந்தி அடிகளார் அவர்களே, தவத் திரு சாந்தலிங்க அடிகளார் அவர்களே, அரங்கம் நிறைந்துள்ள சைவப் பெருமக்களே, வணக்கம்.

இந்த மாநாட்டின் இறுதிக் கட்டத்தை நெருங்கிக் கொண்டிருக்கிறோம். சைவத்தையும் தமிழையும் வளர்ப்பதற்கு நீங்கள் எடுத்துக்கொண்ட இந்த பெரும் முயற்சி வரவேற்கத்தக்கது, போற்றத்தக்கது.

கடந்த இரண்டு நாட்களாக இந்த முயற்சிக்கான வழிமுறைகளைப் பற்றி பல கோணங்களிலிருந்து சிந்தித்துள்ளோம், விவாதித்தும் உள்ளோம். பெரும்பாலும் புலம்பெயர்ந்து வாழும் மக்களின் பிரச்சினைகளை மையமாக வைத்தே தீர்வுகளை தேடியுள்ளோம். நம் சொந்த மண்ணிலே, முக்கியமாக ஈழத்திலே தமிழிற்கும் சைவத்திற்கும் எந்த வித ஆபத்தும் இல்லை என்ற ஒரு எண்ணத்தை பலரிடையே இது உருவாக்கியுள்ளது. இது ஒரு தவறான எண்ணமாகும்.

1995ம் ஆண்டு ஒக்டோபர் மாதம் 30ம் திகதி ஏறக்குறைய 700,000 தமிழர்கள் ஒரு இரவில் இடம் பெயர்ந்தார்கள். 7 மாதங்களின் பின் இடம்பெயந்தோரில் அரைவாசிப்பேர் தங்கள் சொந்த இடங்களுக்கு திரும்பினார்கள். அங்கு அவர்களை வரவேற்றது இடிந்த, சூறையாடப்பட்ட வீடுகளும், பள்ளிக்கூடங்களும், கோவில்களுமே.

வசதியுள்ளவர்கள் தங்கள் வீடுகளை திருத்தி அதில் வாழத் தொடங்கினார்கள். வசதியற்றவர் செய்வதறியாது ஏங்கிக் கொண்டிருந்தார்கள்.

அவர்களுக்கு சிலர் உதவினார்கள். இடிந்துபோயிருந்த உள்ளங்களுக்கு ஊன்றுகோலாக இருந்தார்கள்; குடிசைகளை திருத்துவதற்கு உதவினார்கள்; சமைப்பதற்கு பாத்திரங்கள் கொடுத்தார்கள்; பாலர்களுக்கு பாடசாலைகளை அமைத்து ஆசிரியர்களை நியமித்தார்கள்; பாடசாலை செல்லும் மாணவர்களுக்கு உணவு, உடை, பாடசாலை உபகரணங்கள் வழங்கினார்கள். இதற்கு கைமாறாக அந்த மக்கள் தங்கள் சைவசமயத்தை விட்டு, அவர்களின் சமயத்தைத் தழுவினார்கள்.

இது நடந்து முடிந்த கதையல்ல, இன்னும் நடந்து கொண்டிருக்கும் கதை, நாளையும் தொடரும் கதை. இது மதம் மாறியவர்களினதோ அல்லது மாற்றியவர்களினதோ தவறு அல்ல. எங்கள் தவறு, சைவமக்களின் தவறு எமது சமூகத்தில் வாழும் நலிந்த சைவ மக்களுக்கு நாம் உதவவில்லை.

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* டொரன்டோ நகரில் 1999 ஆடித்திங்கள் 30 முதல் ஆவணித் திங்கள் 1 வரை நடைபெற்ற 7வது உலக சைவ மாநாட்டில் வாசிக்கப்பட்டது.

இன்று நீங்கள் யாழ்ப்பாணம் வந்தால் அங்குள்ள ஏறக்குறைய 1500 கோவில்களில், மூன்றில் ஒரு பங்கு கோவில்களில் திருப்பணி வேலைகள் நடைபெற்றுக் கொண்டிருக்கும். மை பூசுவது முதல் புதிய தேர் அமைப்பது வரை நடைபெற்றுக் கொண்டிருக்கும். பெரிய பெரிய வாகனங்கள் அன்பளிப்புச் செய்யப்பட்டிருக்கும். ஆனால் திருவிழாக் காலங்களில் வாகனங்களை தூக்குவதற்கு போதிய ஆட்கள் இருக்கமாட்டார்கள். இந்த திருப்பணி வேலைகள் பெரும் செலவில், பெரும்பாலும் புலம் பெயர்ந்தோரின் பணச்செலவில் செய்யப்படுகின்றன.

கோவில் திருப்பணிக்காக சேர்க்கும் பணத்தில் ஏன் ஒரு பகுதியை கோவிலை அண்டியுள்ள ஏழை மக்களுக்காக செலவிடக் கூடாது?

அண்மையில் யாழ்ப்பாணத்தில் நடத்தப்பட்ட ஒரு ஆய்வின் படி 6 முதல் 14 வயது வரையிலான பிள்ளைகளில் சராசரி 8% பாடசாலை போவதில்லை. யாழ்ப்பாண நகர பகுதியில் உள்ள வசதி படைத்தோரின் பிள்ளைகளில் 100% பாடசாலை சென்றபோதும் பின்தங்கிய கிராமங்களிலும், பின்தங்கிய சமூகங்களிலும் உள்ள பிள்ளைகளில் 30 – 60% பிள்ளைகள் பாடசாலை செல்வதில்லை. இந்த நிலைமைக்கு முக்கிய காரணம் வறுமையாகும்.

பாடசாலை பருவப் பிள்ளைகளில் 10 சத வீதமானவர்களுக்கு தந்தை இல்லை. ஒன்றில் அவர் இறந்திருப்பார், அல்லது காணாமல் போயிருப்பார். 3 - 5 வயதிற்கும் இடைப்பட்ட முன்பள்ளிச் சிறுவர்களில் அரைவாசிக்கு மேல் பாலர் பாடசாலைக்கு போவதில்லை.இந்தவயதினரில்50வீதம்போசாக்கின்மையால்பாதிக்கப்பட்டுள்ளார்கள்.

யாழ்ப்பாணத்தில் உள்ள சனத்தொகையில் 12 வீதத்துக்கும் மேற்பட்டவர்கள் 60 வயதைத் தாண்டியவர்கள் பெரும்பாலானவர்கள் தனித்து வாழ்கிறார்கள். இவர்களில் முக்கால்வாசிப்பேர் மருந்துகள் பாவிக்கிறார்கள். கர்ப்பமாக உள்ள தாய்மாரில் 60 வீதம் குருதிச் சோகையால் பாதிக்கப்பட்டுள்ளார்கள். இதனால் யாழ்ப்பாண வைத்தியசாலையில் பிறக்கும் குழந்தைகளில் 23 சத வீதமானவர்கள் நிறை குறைந்த பிள்ளைகளாக பிறக்கிறார்கள். இப்படிப் பாதிக்கப்பட்டவர்களுக்கு முக்கியமாக சைவ மக்களுக்கு நாம் என்ன செய்கிறோம்?

மற்றைய சமயங்களை சார்ந்தவர்களுக்கு அவர்களின் சமய நிறுவனங்கள் உதவுகின்றன. எனக்குத் தெரிந்தவரையில் யாழ்ப்பாணத்தில் விரல் விட்டு எண்ணக்கூடிய அளவு கோவில்கள்தான் இப்படியான சமூகசேவைகளை செய்கின்றனர். தெல்லிப்பளை துர்க்காதேவி தேவஸ்தானம் இந்த பணியில் முன்னணியில் நிற்கின்றது. கடந்த 17 ஆண்டுகளாக ஒரு மகளீர் இல்லம் நடத்தப்பட்டு வருகிறது. அதில் இன்று 60ற்கும் மேற்பட்ட பெற்றோரை இழந்த பெண் பிள்ளைகள் வளர்கிறார்கள். அனைவரும் பாடசாலை செல்கிறார்கள் நால்வர் பல்கலைக் கழகத்தில் படிக்கிறார்கள். அனாதரவான முதியோரையும் சேர்த்து பராமரிக்க சிவதமிழ்ச் செல்வி தங்கம்மா அப்பாக்குட்டி

அம்மையார் நடவடிக்கை எடுத்திருக்கிறார். அதைவிட சைவநூல்கள் வெளியிட ஒரு அச்சகம், நூல் நிலையங்கள் முதலியவற்றை இந்த கோவில் நடத்துகிறது.

ஆனைக்கோட்டை கரைப்பிரான் பிள்ளையார் கோவிலில் சிவகுமார சர்மா என்ற ஒரு சிவாச்சாரியார் இருக்கிறார். அந்த கோவிலைச் சுற்றி ஏழைக்குடும்பங்கள் பல உள்ளன. அவர்களில் சிலர் மதம் மாறிக் கொண்டிருக்கிறனர். அந்த சிவாச்சாரியார் கோவிலுக்கு அருகாமையில் ஒரு பாலர் பாடசாலையை ஆரம்பித்துள்ளார். இரண்டு ஆசிரியர்களை அமர்த்தியுள்ளார். பாலர் பாடசாலை பிள்ளைகளை ஒழுங்காக கோவிலுக்கு வந்து பிரார்த்தனைகளில் ஈடுபடச் செய்கிறார். குழந்தைகளுக்கு விளங்கக்கூடிய வகையில் சைவ நெறிகளை புகட்டுகிறார். கிராமத்து முதியவர்களை பயன்படுத்தி பிள்ளைகளுக்கு அறநெறி வகுப்புகளை நடத்துகிறார். அத்துடன் பாடசாலைக்கு வரும் பிள்ளைகளுக்கு சத்துணவு வழங்குகிறார், சீருடை வழங்குகிறார். இவ்வளவையும் தனது சொந்தமுயற்சியால் ஊரில் பணம் சேர்த்து செய்கிறார். இப்படி ஏன் மற்ற கோவில்கள் செய்யக் கூடாது?

கோவில் திருப்பணிகளை நிறுத்திவிட்டு சமூகத்தொண்டு செய்ய வேண்டும் என்று நான் சொல்லவில்லை. கோவிலுக்கு சேரும் பணத்தில் குறைந்தது 10 சத வீதத்தையாவது ஒவ்வொரு கோவிலும் சமூகப்பணிக்கு செலவிட வேண்டும் என்றே கேட்கிறேன்.

அன்பர்களே இக்கருத்துக்கள் புரட்சியானவையல்ல, புதியதும் அல்ல இவை எமது பழம் பெரும் சமயப் பண்பாடு. இல்லையேல்

படமாடக் கோயில் பகவற்கு ஒன்று ஈயின்
நடமாடக் கோயில் நம்பர்க்கு அங்கு ஆகா
நடமாடக் கோயில் நம்பர்க்கு ஒன்று ஈயில்
படமாடக் கோயில் பகவற்கு அது ஆமே (திருமந்திரம் 1857)

என்று திருமூலர் கூறியிருக்க முடியாது. "அனத ரட்சகர்" "ஆபத் பாந்தவர்" என்றும் இறைவனை போற்றுவதிலும் அர்த்தமில்லை.

கனடா இந்து மாமன்றம், லண்டன் மெய்கண்டான் ஆதீனம் அறக்கொடை, உலக சைவப் பேரவை போன்ற நிறுவனங்கள் ஒரு நிதியத்தை உருவாக்கி, அந்த நிதியத்தின் மூலம் கோவில்களால் நடத்தப்படும் சமூகப்பணிகளுக்கு முக்கியமாக கல்வி, போசாக்கு, சுகாதாரம் போன்றவற்றுக்கு முன்னுரிமை கொடுத்து பண உதவி செய்யும் முயற்சியை ஆரம்பித்து வைத்தால், அது தமிழுக்கும், சைவத்திற்கும் செய்யும் பாரிய பணி எனவும், இந்த மகாநாட்டிற்கும் கிடைத்த மாபெரும் வெற்றி எனவும் கருதுகின்றேன்.

இந்த ஏழாவது உலக சைவ மகாநாட்டில் பங்கு பற்றும் வாய்ப்பை எனக்கும் எனது துணைவியாருக்கும் தந்துதவியதற்காக மாநாட்டு அமைப்பாளர்களுக்கு நன்றி தெரிவித்து கொள்கிறேன்.

PART III - A Selected Bibliography of Dr. N.Sivarajah

A Selected Bibliography of Dr. N.Sivarajah (1967-2012)

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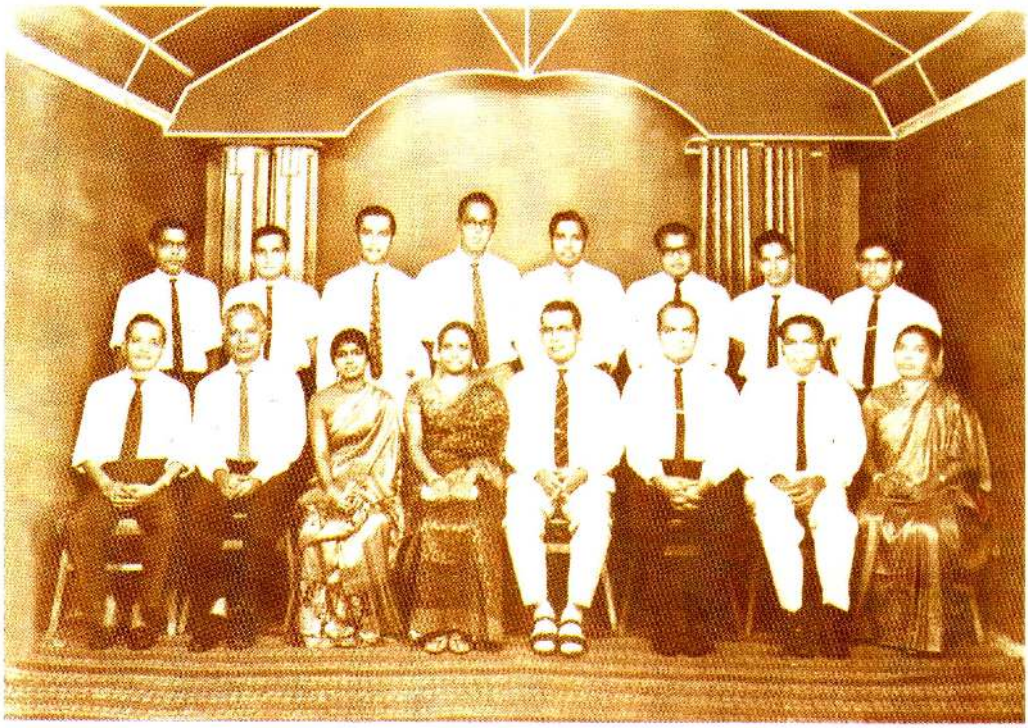
PART IV - Photographs



With Medical staff in Vavuniya - 1973

With Health volunteers at Puliyankoodal, Kayts - 1978

Discussing with Tsunami affected kids

Visiting Kinya Hospital after Tsunami

At a Refugee camp with a spray team

At Refugee camp in Kinya discussing the arrangements after Tsunami

At the Department of Community Medicine

With Prof. Walter Patrick and others at Bali

Lighting lamp

Certificate awarding at Jaffna

United Nations
Office of the Resident Co-ordinator
Colombo, Sri Lanka

20th May, 1998

Dear Dr N Sivarajah,

Visit of Mr. Olara Otunnu
Special Representative of the Secretary-General
on Children and Armed Conflict

We write to express our appreciation of your contribution to the success of the recent visit of Mr Olara Otunnu, Special Representative of the Secretary-General on Children and Armed Conflict. Despite a tight schedule, the arrangements went very smoothly throughout his visit, thanks to the diligent preparations made on the ground. He was also able to meet a wide cross-section of people to learn first hand of the situation of children and women affected by conflict.

We attach a copy of the press release issued at the end of his visit, which describes the significant commitments Mr. Otunnu was able to obtain on behalf of children and women affected by this conflict. These, and other positive outcomes for children could not have been achieved without your support and collaboration.

We also attach a document "**Children: Zones of Peace**", which calls for action to protect children from the effects of conflict. This was launched during Mr. Otunnu's visit and received his strong endorsement as a local level follow-up to the UN Report on the Impact of Armed Conflict on Children (the "Machel Report"). We urge you to maintain the heightened concern for children generated by Mr. Otunnu's visit by responding to the principles and best practices described in this document.

Thank you again.

Yours sincerely

Colin Glennie
UNICEF Representative

Arve Ofstad
UN Resident Co-ordinator

Dr N Sivarajah
Faculty of Medicine
University of Jaffna
Jaffna

PRESS RELEASE

Office of the Special Representative of the Secretary-General for Children and Armed Conflict

SRSG-CAC/PR/5
12 May 1998

IMPORTANT COMMITMENTS ON THE PROTECTION OF CHILDREN MADE BY GOVERNMENT AND LTTE IN SRI LANKA

New York, 12 May – At the conclusion of a weeklong mission to Sri Lanka (3-9 May 1998), Mr. Olara A. Otunnu, Special Representative of the Secretary-General for Children and Armed Conflict, announced that significant humanitarian commitments had been made by the Government of Sri Lanka and by the leadership of the Liberation Tigers of Tamil Eelam (LTTE). He said, "I welcome these commitments, which represent a significant development towards ensuring the protection, rights and welfare of children affected by the ongoing armed conflict in Sri Lanka. I now call upon the parties to take concrete steps to fulfil their respective commitments".

Mr. Otunnu visited Sri Lanka to promote the protection, rights and welfare of children and to witness and assess for himself the multiple ways in which children are affected by the ongoing armed conflict in that country. Throughout his visit, he stressed the humanitarian character of his mission and emphasised that he was concerned with all children and all the dimensions of the impact of war on their lives. He met with the President, H.E. Ms. Chandrika Bandaranaike Kumaratunga, Minister of Foreign Affairs, Mr. Lakshman Kadirgamar, Minister of Justice, Constitutional Affairs, National Integration and Ethnic Affairs, Professor G.L. Peiris, parliamentarians and other Government officials. He travelled to affected areas in the Jaffna peninsula and the Vanni region, where he visited schools, resettlement villages and centres for internally displaced persons. While in these areas, he also met with local government officials, military commanders, religious and civic leaders, as well as with representatives of local and international humanitarian agencies. He had the opportunity to meet with two senior representatives appointed by the leader of the LTTE, V. Prabhakaran – Mr. Thamilselvan, Head of the Political Section, and Mr. Balasingham, Political Advisor.

In his discussions with the Government and the LTTE leadership, Mr. Otunnu raised several issues pertaining to the rights, protection and welfare of children. Among the issues on which the parties made specific commitments were the following:

- Provision and Distribution of Humanitarian Supplies: Impressive efforts are being made to respond to the humanitarian situation in affected areas; but more needs to be done to meet the critical and growing needs of the affected populations. The Government agreed to review the list of restricted items and also to examine procedures to expedite the approval and distribution of necessary supplies. The LTTE leadership made a commitment not to interfere with the flow of humanitarian supplies destined for affected population and accepted the need for a framework to monitor this commitment.

- Free Movement of Displaced Populations: The Government agreed to expedite procedures for the issue of permits for movement in affected areas. The LTTE leadership made the commitment that the movement of displaced populations who want to return to areas now under Government control would not be impeded. They also pledged not to impede the return to their homes of Muslim populations displaced by previous outbreaks of hostilities and they accepted that a framework to monitor these processes should be put in place.

- Recruitment and Participation of Children in Hostilities: The LTTE leadership undertook not to use children below 18 years of age in combat and not to recruit children less than 17 years old. The LTTE leadership accepted that a framework to monitor these commitments should be put in place. The Government of Sri Lanka reiterated its commitment to the policy of not recruiting children under the age of 18 years. Mr. Otunnu welcomed Government assurances that there were no plans to embark on a recruitment drive in schools.

- Observing the Convention on the Rights of the Child: The Government of Sri Lanka has signed and ratified the Convention. It has also prepared a National Children's Charter. Mr. Otunnu stressed the importance for all parties, including non-state actors, to respect the principles and provisions of the Convention. In this connection, he urged the LTTE leadership to make a public commitment to respect the Convention. He was encouraged by the LTTE's readiness to have its cadres receive information and instruction on the Convention.

- Targeting of Civilian Populations and Sites: Mr. Otunnu expressed the gravest concern about the targeting of civilian populations and sites throughout the country. The LTTE leadership acknowledged this to be an important and legitimate concern and undertook to review its strategies and tactics in this regard.

Another important issue that Mr. Otunnu raised with the Government and with the LTTE leadership was the continuing use of landmines by both sides. He very much regretted that it had not been possible on this occasion to obtain a commitment from either party to refrain from using landmines; he indicated his intention to pursue this issue.

During his travel to the conflict-affected areas, Mr. Otunnu witnessed the trauma and distress on the part of affected populations there. He saw how the protracted conflict has undermined the social and ethical fabric of society. He was struck by the deep and widespread yearning for peace on the part of all communities. At a final address in Colombo, Mr. Otunnu strongly endorsed the launching of a local initiative, proclaiming "children as zones of peace", as a systematic effort to apply global recommendations on the protection, rights and welfare of children to the specific context of Sri Lanka.

Mr. Otunnu concluded his visit by launching a strong appeal to the international community to provide more assistance to conflict-affected populations in Sri Lanka, especially for resettlement and the meeting of their urgent health and education needs.

END

I wanted to help save as many lives as I could

Dr N. Sivarajah, Coordinator of the WHO Unit in Jaffna, Sri Lanka

Dr N. Sivarajah, Coordinator of the Jaffna Unit of the World Health Organization in Sri Lanka, has lived and worked in the northern Sri Lankan city of Jaffna for over 30 years. For many years he worked as a Professor of Community Medicine at Jaffna Medical College before heading WHO's Jaffna office. Jaffna had been at the heart of the Asia's longest running conflict, between the Liberation Tigers of Tamil Ealam (LTTE) and the Sri Lankan government, which ended last year after 25 years. In those years, the city and district has been ruled, at various times, by the LTTE, by the Indian Peacekeeping forces, and by the Sri Lankan army. Through it all, Dr. Sivarajah was focused on one goal, " I wanted to help save as many lives of the people as I could."

This was not always easy, especially in the highly sensitive situation. But through his dedication to work, he gained the trust of the people. Health facilities were limited, and there were not enough doctors, as most qualified people emigrated. He often traveled to rural areas, making assessments to highlight the problems of malnutrition especially among children. "Often the male members of the family would be missing due to the ongoing conflict, leaving women and children vulnerable," he recalls.

Access to facilities, he feels, was one of the biggest challenges for patients. He remembers a time when once of his pregnant patients developed complications and urgently needed to be admitted to hospital. But it was dark, and a curfew was in place. The mother and baby died of a ruptured uterus. It took quite an effort to convince the authorities and start an emergency ambulance service (which was not in existence at that time). Since the start of the "Emergency Ambulance Service" maternal deaths due to lack of transport has decreased.

"I have often been asked why I didn't leave Jaffna. But this is my home, and the satisfaction I have got from my work with the people here will be hard to match anywhere else," he says.

(http://www.who.int/hac/crises/lka/sitreps/19august2010/en/index.html)

The Community Doctor

Dr Sivarajah is an expert in community medicine and a lecturer at the University of Jaffna. He reflects on the last thirty years of living in Jaffna and how the challenges keep him in Jaffna

I first met Dr Sivarajah when I was doing a story on a community in Jaffna affected by leprosy. In the early 80s, Dr Sivarajah led a team of doctors to treat a disease that had begun to spiral out of control. I was impressed with his way of approaching life's challenges and his interesting experiences, and I knew he'd be perfect for the "I am" project.

Like many people living through the war years in Jaffna, Dr Sivarajah is a survivor. His key to survival has been to always remain neutral. Not an easy thing during a war which has seen different masters of Jaffna. He has challenged the might of the Tamil Tigers and come out winning. Through his sound reasoning, he made them see sense.

One thing I also wanted to ask Dr Sivarajah about was the Jaffna Tamils' obsession with doctors. Why did Jaffna Tamils prize medicine above all other professions? My mother – a doctor – was disappointed when I decided not to follow her career. And why were so many of my relatives doctors? He suggested that one reason could be to do with the belief among many Tamils that the first hospital in Sri Lanka was the hospital started by American missionaries in the town of Manipay. He believed that the Tamils' link to medicine may have started there. So it took a doctor from Jaffna to explain to me why so many of my uncles, aunts, cousins and second cousins, as well as their spouses, living around the world ended up becoming doctors. But despite his own choice of career, Dr Sivarajah is not so impressed with the narrow ambitions of Jaffna Tamils. He felt they needed to expand their horizons a little. I felt my family could learn a lot from this community doctor's diverse experiences, someone who remained behind to help the people of Jaffna with their unique challenges. Indeed, these challenges are what continues to keep him on the peninsula.

Kannan Arunasalam
February 12, 2011

(http://iam.lk/the-community-doctor/)

Published by
Ayothy Library Services - Kumaran Book House

ISBN: 978-955-659-384-6
Price: £ 15.00