

5.3 BEHAVIOURAL RISK FACTORS

The common behavioural risk factors are related to diet, physical activity, use of tobacco and misuse of alcohol.

5.3.1 DIET: NUTRITIONAL TRANSITION IN SRI LANKA

Consumption of cholesterol-rich food increases the risk of NCD, particularly cardiovascular diseases. On the contrary, higher intake of fruits and vegetables decreases the risk of NCDs such as some types of cancers and cardiovascular diseases. Fruits and vegetables have protective effects partly because they contain antioxidant, potassium, fibre and folate. Vegetables also have other protective compounds such as flavonoids, phytates, lycopene, carotenoids, and other phytochemicals. Besides, they are good sources of complex carbohydrates (not simple varieties), vitamins, minerals and other substances that are important for good health.

Sri Lanka seems to be in a “nutritional transition” state. There seems to be a shift from its traditionally vegetable-rich diet to one that is stuffed with animal fat and free sugar.

A. DECLINING CONSUMPTION OF VEGETABLES

During the past quarter of a century, there appears to be a decreasing trend in the vegetable consumption habits in Sri Lanka (**Figure: 5-22**). The shift may have started sometime in the 90's. Although the fruits consumption has picked up during the past five years as compared to the previous years, the per capita consumption remained at 29 kcal per day.

A survey on the nutritional status of Sri Lankan school children revealed that the overall consumption of fruits, green leaves and other vegetables among children aged 10-12 years is **not within satisfactory levels (Figure: 5-23)** the percentage of children who had green leaves everyday was 24.4% only. Likewise, 5.4% of children never had other vegetables. Those who had it everyday were no more than 23.3%. The same situation was seen in the case of fruits, the respective values being 2.1% and 26.6%.

According to the survey conducted by the NCD Unit of the MoH in the year 2003, it was seen that those who consumed 2 servings or more of fruit was less than even 8% and most of them were pensioners nearing their sixties. The study showed more disturbing trends: majority of the people (71%) consumed less than one serving and 21% had just one serving. All these highlight the inadequacy in the fruit intake.

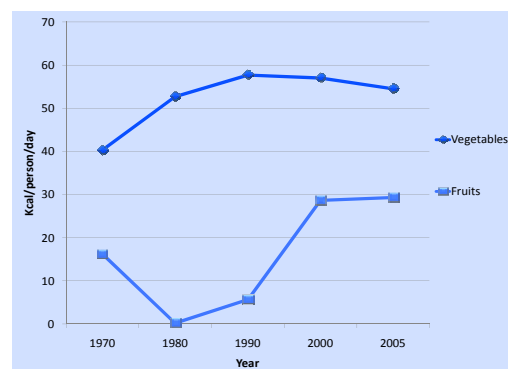


FIGURE 5- 22: CONSUMPTION OF VEGETABLES AND FRUITS, 1970-2005¹

¹Department of Census, 2000

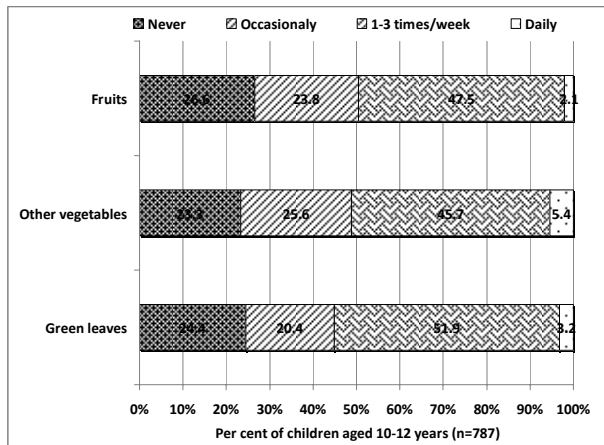


FIGURE 5- 23: CONSUMPTION OF FRUITS AND VEGETABLES AMONG 10-12 YEARS²

Another study was designed to assess the nutritional status and dietary and physical activity pattern of 8-12 year old school children in an urban area of Sri Lanka¹. From 7 schools situated in Colombo, 1266 students, showing a fair representation of all social levels, were randomly selected. One of the interesting results of the study was that the fruit consumption was not satisfactory even though the vegetable consumption was high. In addition, the prevalence of obesity and overweight increased with family income whilst high prevalence of

thinness was seen among low-income groups. The study shows that socio-economic standard is the main factor that influences the nutritional status and related behaviour and therefore health programmes should be designed targeting these groups.

B. DECLINING INTAKE OF TOTAL FATS BUT INCREASING INTAKE OF ANIMAL FATS

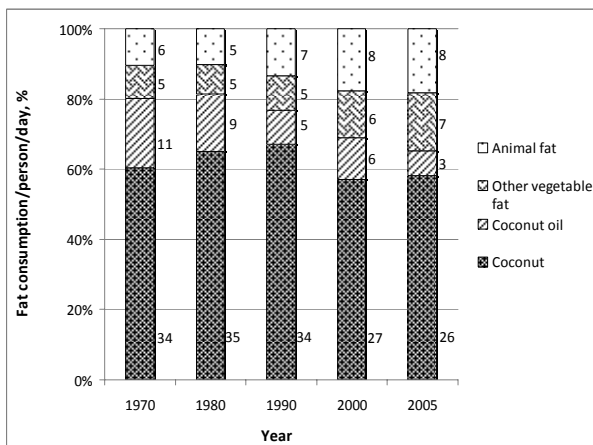


FIGURE 5- 24: TRENDS IN SOURCES OF DIETARY FATS, 1970-2005³

The total fat consumption in Sri Lanka has been consistently lower than the average global per capita consumption of 73 grams daily. During the past 3 decades, there has been a decreasing trend in the amount of total fat intake in Sri Lanka. The total reduction between 1970 and 2005 is about 12 grams per person per day or that is more than a fifth from the baseline level of 56 grams of total fats.

While Sri Lankans have continued to use coconut and coconut oil as their major source of fat, they have consumed significantly lesser amounts throughout the decades. As such, there is an absolute and relative reduction in the use of coconut and coconut oil. Specifically, the average person consumed about 10g of coconut oil per day in 1970, whereas in 2005 this value was about 3g only.

On the other hand, the consumption of animal fat and other vegetable oils has increased in terms of their absolute values (the numbers inside the bars in (Figure: 5-24) and their relative weights or as percentages of

¹ MRI, 2003, Nutritional Status of School Children

² Wickramasingha, 2005

³ Department of Census, 2000

the total fats. **The average Sri Lankan in 2005 consumed 2 grams of animal fat per day more than his/her counterpart 35 years ago.**

c. INCREASING INTAKE OF FREE SUGAR

The per capita food consumption has remained within 1900 to 2500 kcal per day during the past 5 decades (**Figure: 5-25**). It is lower than the world statistic of 2803 kcal between the years 1997 and 1998. It has not reached the 2825 kcal food consumption of developing countries.

Compared to other developing countries, Sri Lanka depends mainly on rice and sugar as the source of energy and less from wheat flour, other grains, roots and tubers. During the past half a century, the rice consumption of Sri Lankan has been declining but it is still 230 kcal more than the average figure for people in developing countries (**Figure 5-26**). From the 80's onwards, the intake of sugar in Sri Lanka appears to be rising. Also, an average Sri Lankan consumed 144 kcal more of sugar than another person from developing countries who had about 200 kcal per day in the year 2005.

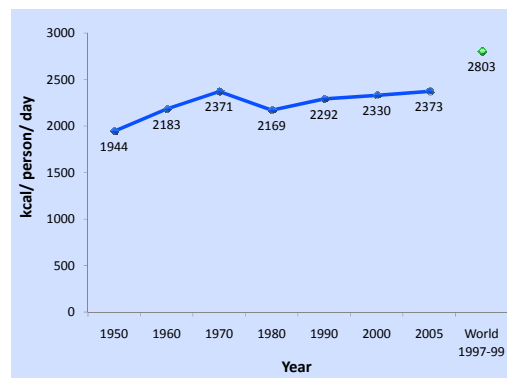


FIGURE 5- 25: PER CAPITA FOOD CONSUMPTION, 1950-2005¹

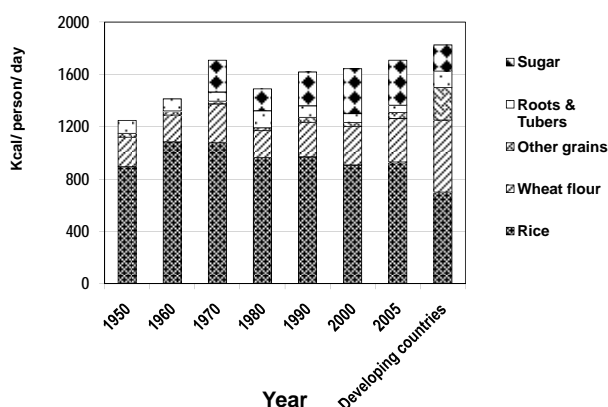


FIGURE 5- 26: CONSUMPTION OF CALORIES FROM MAJOR SOURCES²

d. SKIPPING MEALS

A survey done on the nutritional status of schoolchildren in Sri Lanka by the MRI revealed that increasing percentages of children skip breakfast (**Figure 5-27**). The lowest percentage of adolescents who skipped breakfast was from Monaragala district, being 4.1%. The highest numbers were reported from Ampara district where 20% of children skipped their breakfast. The districts of Rathnapura, Kurunegala,

¹ Department of Census, 2000

² Ibid

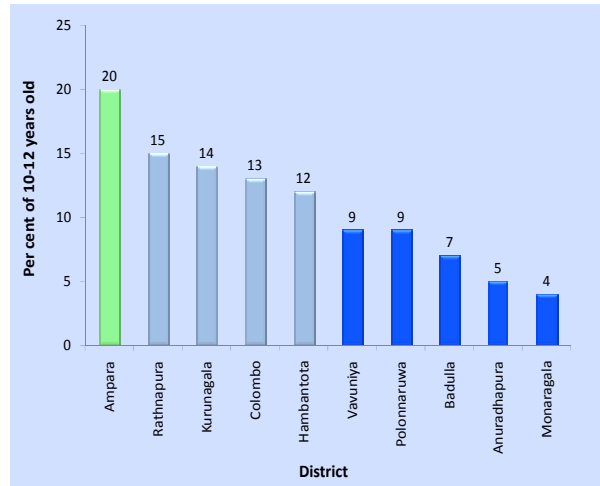


FIGURE 5- 27: SKIPPING BREAKFAST AMONG 10-12 YEAR OLD CHILDREN IN 10 DISTRICTS (N=9904)¹

Colombo and Hambantota have percentages of skipping meals that are between 10 and 20.

5.3.2 PHYSICAL INACTIVITY

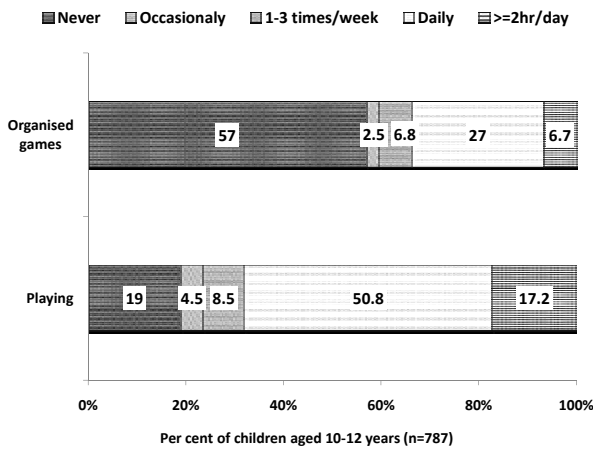


FIGURE 5- 28: PHYSICAL ACTIVITY PATTERN OF CHILDREN AGED 10-12 YRS DURING THE PRECEDING WEEK (N=787)²

With regards to Sri Lankan children aged 10-12 years, a survey revealed that 1 of 5 had never engaged in playing and more than half (57%) had never engaged in organized games (Figure 5-28). Half of the children did not play daily but every 6th child had a chance to play at least 2 hours per day. Nowadays, children seem to spend more time with things other than playing. Half of them reported watching TV daily; between 1 of 3 and 1 of 4 children watched at least 2 hours per day (Figure 5-29). After their regular classes, every 3rd child would attend tuition daily or weekly.

¹MRI, 2003, Nutritional Status of School Children

²Ibid

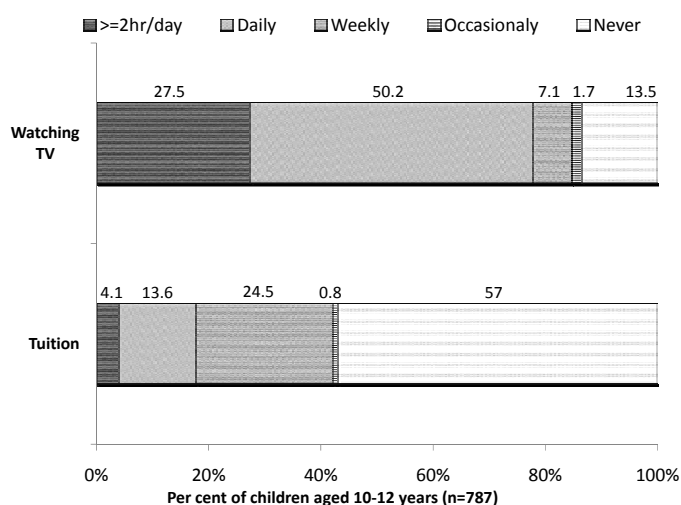


FIGURE 5- 29: SEDENTARY ACTIVITY PATTERN OF CHILDREN AGED 10-12 YRS DURING PRECEDING WEEK (N=787)¹

5.3.3 TOBACCO USE

Tobacco is a silent killer that robs the lives of many and affects those of a great many more. It kills about one sixth of the world population, 4.9 million people every year or one person every 8 second. The number that succumbs to this habit is shocking. The number of new smokers every year is about 84,000 youths from middle and low income countries, and 15,000 from affluent countries.

The adverse health consequences of smoking are an endless list. They will only get worse and not otherwise unless one quits. Exposure to tobacco smoke increases the risk of NCD. Specifically, smoking:

- ▶ Is a strong risk factor for developing asthma – **90% of** the cases of chronic obstructive pulmonary diseases (**COPD**) are attributed to smoking;
- ▶ Increases the risk of developing NCD from 2 to 3 folds, for succumbing to this disease even further and for poor metabolic control;
- ▶ Increases the risk of strokes 4 folds; and
- ▶ Enhances the destruction of main blood vessels in 8 fold and the development of peripheral vascular diseases in 16 fold.

In other words, smoking increases the chances of death and diseases by multiple folds.

There are 8 forms of cancer which are mainly associated with smoking - cancers of the mouth, pharynx, oesophagus, larynx, lungs, pancreas, kidney pelvis and bladder. A cigarette contains about 4000 poisons. The health disasters connected to smoking henceforth need no special mentioning. Some such poisons are as follows: ammonia (used by cleaners); arsenic

¹MRI, Nutritional Status of School Children, 2003

(used as poison); carbon monoxide (present in car exhausts); hydrogen cyanide (used in gas chambers); naphthalene (moth balls are made of this); nicotine (used to kill insects); tar (the sticky substance used to surface roads); and radioactive compounds (used in nuclear weapons). It seems as if subjecting one's system to nothing less than a torture chamber. Hence, smoking causes premature deaths because it causes fatal and debilitating disease.

The unjust fact about smoking is that, these undesirable consequences are witnessed not only by smokers themselves. Many others are being affected drastically and almost equally despite not being active smokers. Those who enter the category of passive smoking suffer a great deal. It was estimated by the WHO that 700 million children are exposed to second hand smoking¹. Passive smoking is associated with 10- 43% increase in the risk of COPD. If a child is born to a parent who is an active smoker by the time the child turns 2 it is as if the child has smoked six hundred cigarettes.

In Sri Lanka, ADIC undertook a survey in 2004 in 6 districts - Colombo, Gampaha, Galle, Kegalle, Anuradhapura and Matale² (ADIC , 2005). The study key findings are as follows:

- ▶ 43.9% of the respondents were tobacco users;
- ▶ Majority (51.1%) of the smokers were at least 40 years old;
- ▶ Almost 86% were daily users;
- ▶ More than a third (36.4%) of the users does it out of habit; and
- ▶ Of those who did not smoke, 40.8% said it was "a pointless act" and 22% said it was "harmful to health".

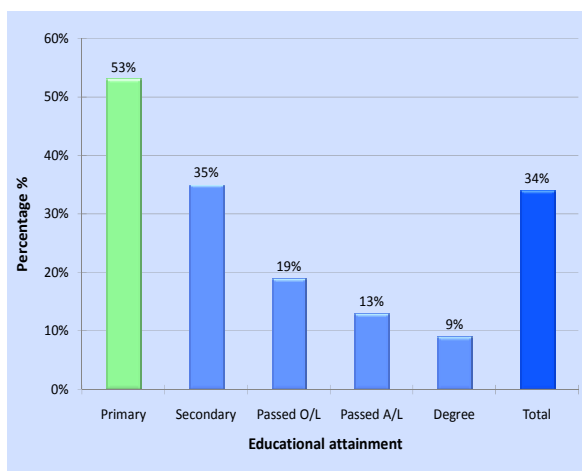


FIGURE 5- 30: CURRENT MALE SMOKERS BY EDUCATIONAL ATTAINMENT³

There is a high prevalence of smoking in the estate community as well as the urban slum communities. The common trait in both of these when observed closely is poverty as well as ignorance, both of which contribute a great deal to this problem.

Another survey documented that 1 of 3 (34%) of the male respondents were current smokers. It seems the probability of smoking is lower among men who have higher educational attainment; there is inverse relationship between smoking and educational level. For example, only 1 of 10 degree holders was a smoker whereas 1 of 2 men with primary education reported to be current smokers.

A descriptive cross sectional study was carried out among the students in Grade 12 in the Kandy educational zone with the objective of describing the students' attitudes on smoking and their awareness regarding promotional strategies of tobacco companies as well as to identify methods of acquiring knowledge regarding these strategies⁴. Of the 204 students who were in the study sample,

¹ Somatunga,2006: Seminar on NCD

² ADIC,2006

³ Somatunga,2006: Seminar on NCD

⁴ Alagiyawanna, 2005

- ▶ More than 80% of both sexes perceived smoking as a negative characteristic;
- ▶ Most of them were of the view that people get addicted due to lack of proper understanding; and
- ▶ Most students acquired the knowledge regarding indirect promotional strategies of the tobacco company via mass media.

The awareness with regard to indirect promotional strategies was satisfactory, yet 41% had poor or very poor knowledge about such. Compared to other groups, those who acquired their knowledge by participating in seminars/workshops conducted by anti-narcotic organizations (nearly 38%) showed a significantly higher level of understanding on the promotional strategies than others. Between 8 and 9 out of 10 students (85.8%) were not aware that advertising specially targeted girls.

In terms of promotional activities, the electronic media dominates. Even though direct advertisements on alcohol and tobacco are banned, the industry has found many alternative routes and methods to break the barrier. For example, smoking scenes are flashed as part of tele-dramas and being glamorised so it becomes an integral part of social norms.

Smoking is a habit that is formed due to many reasons. Some people make excuses while other's have no set reason as to why they smoke. It is a habit when once formed cannot be stopped easily. But it is by no means impossible.

5.3.4 ALCOHOL USE

Worldwide, alcohol consumption contributes to 3% of deaths (1.8 million) annually or in other words, 4% of the global disease burden. It is responsible for 20-30% of esophageal cancer, liver disease, homicide and other intentional injuries, epilepsy, and motor vehicle accidents. It leads to intoxication and addiction. It has a U-shaped relationship with ischemic heart diseases. Alcohol binges is closely related to at least injury and hemorrhagic stroke.

A. CONSUMPTION PATTERNS

In Sri Lanka, governments have taken measures to control the use of alcohol by issuance of licenses with several regulations, closure of liquor shops on certain days including Poya days, banning of the sale of alcohol to young people, progressive increase of taxes, control of advertising, and regulation on drinking and driving¹. In spite of these measures, alcohol consumption and alcohol-related problems have been on the increase (**Figure 5-31**). From 1985 to 2001,

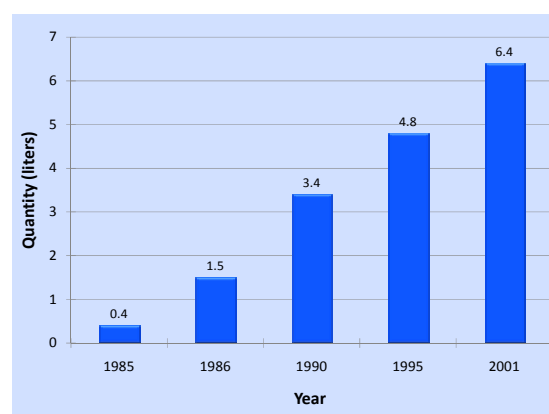


FIGURE 5- 31: PER CAPITA ALCOHOL CONSUMPTION PER ANNUM, 1985-2001

¹De Silva H, 2006

the average alcohol consumption of a Sri Lankan adult has increased 6 times. By 2003, the “current users” of alcohol was reported to be 35.9% of the adult population in Sri Lanka whereas the global level in 2004 was only between 20-30%. **Table 5-2** summarizes the results of several studies that were conducted in several areas of the country on the patterns of alcohol consumption.

TABLE 5- 2: KEY FINDINGS OF LOCAL STUDIES ON ALCOHOL CONSUMPTION

Year	Key Findings
1989	15% of a total 707 patients admitted to one single Medical Unit of the Colombo North Teaching Unit of the Colombo North TH from July 1988-June 1989 had been alcohol dependent
1991 (Hambantota)	Among the 25,274 families, about half (42.5%) of the families had at least one member who had taken alcohol; 42.2% consumed alcohol while a 67.7% consumed both alcohol as well as tobacco.
1991 (Kandy and Matale)	Among a sample of 975 males aged 35- 39 years, alcohol was consumed by 56% of men, 25% of whom consumed alcohol daily.
1991 (ADIC study)	43% of the urban shanty dwellers, 60% of the estate workers and 40-50% of fathers of school children consumed alcohol; in certain areas, consumption of illicit liquor was nearly 50% of the consumption.
1997	A study among males in terms of frequency of consumption during a period of two weeks showed the following trends - 33% occasional drinkers, 22% light drinkers and 15.2% heavy drinkers.
1997 (Gampaha)	Of the 120 clusters of ten voters, the study revealed that 70% of men and 8% of women had consumed alcohol during the preceding year. Of those who were classified as regular drinkers 37.7% were men who consumed an average of 24.1 units per week and 1.6% of women who consumed an average of 6.3 units per week. 13.2% of men consumed more than 21 units per week whereas none of the women exceeded more than 14 units per week. In terms of alcoholic beverages Kasippu contributed to 65% of ethanol consumption of the community while arrack and beer contributed 28% and 3% respectively.
2000	A sub-national survey revealed that of those who consumed tobacco and alcohol, 43% were urban shanty dwellers while 60% were estate workers; both areas severely lack educational and monetary facilities.
2003 (Colombo)	The Director of NCD conducted a survey in Colombo in 2003 that revealed a 35.9% prevalence of current users during the past one year.
2004	A survey done by ADIC showed that 62.7% were alcohol users. More than 3/4 th of the alcohol users liked beer while 1/2 of them also preferred arrack. Like the use of tobacco, the use of alcohol was most common among those who are at least 40 years old (67.6%). Only one out of 10 take alcohol daily. More than 3 of 4 (77.1%) alcohol users preferred beer while half preferred arrack. The two common reasons for not using alcohol were “it was a pointless act” (37%) and “harmful to health” (19.3%).

B. HEALTH AND OTHER HAZARDS

Cirrhosis and liver diseases are indicators of a persistent regular high-risk drinking pattern which is existent over long periods of time. Death rates due to liver diseases have increased from 3.8 per 100 000 population in 1975 to 14.1 per 100,000 in the year 2000. The second leading cause of hospital deaths was due to diseases of the

gastrointestinal tract (GI) of which at least 50 % were due to cirrhosis and other liver disease among males. Box lists the health other hazards of alcohol consumption. It is seen that a third of the family income is wasted on alcohol.

In 1997, a survey documented heavy drinking to be associated with an increase in domestic violence against women and children, though it was not with divorce¹. Furthermore, a third (35%) of the minor offences and 76.8% of family disputes reported to the Police department were associated with alcohol consumption.

Health and Other Hazards of Alcohol

Misuse:

- ▶ Hospitalized due to chronic liver disease [Source – MoH]
1989: 1069 1999: 1816
- ▶ Hospitalized due to alcoholic psychosis, dependence or withdrawal [Source – MoH]
1989: 8396 1999: 12832 cases
- ▶ Detections of driving under the influence of alcohol [Source – Department of Traffic Police]
1990: 8.86 1993: 20.75
- ▶ 1/3 of the family income is used on alcohol [Source – ADIC. 2000. Community Survey]

¹Pathmeswaran, 1997

5.4 NON-MODIFIABLE FACTORS: AGEING

Sri Lanka is ageing rapidly compared to many Asian countries (**Figure 5-32**) The median age of the population will shift from 29 years old in 2000 to 35 in 2015¹ In year 2000, 1 out of 10 people in Sri Lanka was an elderly; in 2025, it will be 1 of every 5.

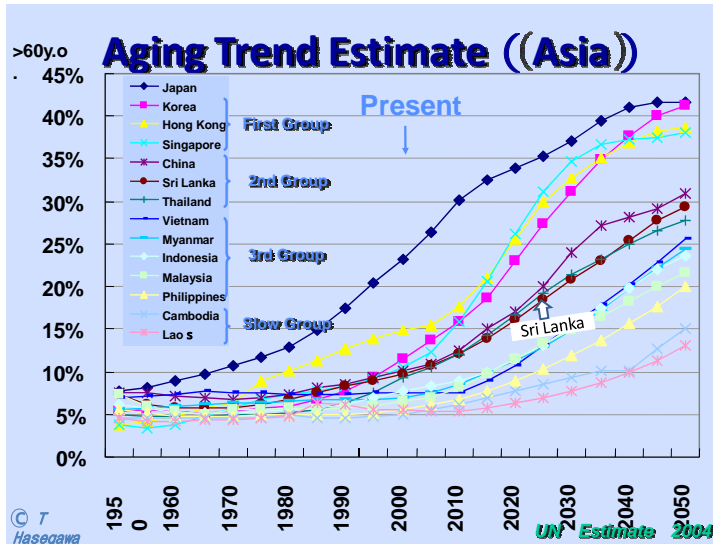


FIGURE 5- 32: POPULATION WHO ARE OLDER THAN SIXTY YEARS IN ASIAN COUNTRIES, 1950-2050

¹MoH -JICA, 2003