

## Consumption-related health habits: An analysis based on urban residents in Sri Lanka

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### Abstract

Consumption pattern of people has been identified by many health experts as a main cause associated with many health problems. In addition to the suffering of people from many diseases, the health cost to the government can also be minimized if people can avoid such harmful consumption and related practices. Health specialists have identified many good consumption-related health habits for the people to improve their health. The aim of this paper was to identify how far the urban residents in Sri Lanka have been practicing these good health habits. The results revealed that urban residents are not low in practicing good health habits. Especially, the response is good in 'taking breakfast every morning', 'avoiding alcohol' and 'avoiding smoking'. These habits may have prevented many health problems that could be arisen otherwise. However, the low level of consumption of alcohol and smoking is due to the absence of such consumption habits in women in Sri Lanka. Furthermore, since many other good health practices do not involve a cost of adopting, only the educating of people in such practices would give positive results. The study also provides a good rational basis for initiating educational programs to improve good health practices since it found a strong positive relationship between the level of education and the health index.

**Keywords:** Health habits, Consumption, Composite index, Practice of health habits

### 1. Introduction

A person's good health is important not only for himself/herself but also for the whole society. A healthy life of an individual increases his/her productivity of work and therefore the income. Moreover, the health cost to the Government is reduced due to the better health habits of people. Life expectancy and quality of human life also improve if the people are in good health. However, this is largely associated with the pattern of consumption or consumption-related practices of people.

As health specialist point out, if people regularly and properly accustomed to practice good health habits, they would be able to prevent or avoid many health troubles that they are suffering. Among these, cancer, diabetes, cardiovascular disease (heart disease and stroke) and lung disease, etc. are some of the diseases that can be prevented by good health behaviors. In Sri Lanka, more than 13,000 new cancer cases are diagnosed per year at present (National Cancer Control Program, 2007) [8]. Meanwhile, heart disease gets the highest percentage in the total number of deaths per year and this has accounted for 22.7 percent in 2007 (Department of Census and Statistics, 2008) [5]. The number of all cases of deaths per annum, which is above 30,000 in 2007, can be considerably reduced by adopting better consumption and health practices on regular basis.

Even if Sri Lanka is high in health-related socio-economic indicators, the country statistics show that some indicators still remain unfavorably high. Especially, the statistics related to the problems caused by malnutrition, non-communicable diseases, TB, Dengue, filariasis, diabetes, heart and kidney diseases do not show a good trend. The government health expenditure as a percentage of total government expenditure

has exceeded 7 percent after 2005 while the per capita health expenditure exceeded Rs. 2700 (Department of Census and Statistics, 2008) [5]. It can be argued that if people are used to practice good health habits, some of these unfavorable trends and indicators can be transformed into a favorable direction.

A review of literature shows that a large number of good health habits of people have been identified by the health specialists worldwide. They are in the concept that good health habits make socio-health indicators like life expectancy, death rate, birth rate, etc. favorable so that increasing the physical quality of life of people. Cobb-Clark *et al.* (2012) [4] conducted a study on the connection between diet, exercise, and locus of control. Interestingly they found that men with an internal locus of control maintain healthy habits because they derive greater satisfaction from those activities than women. This implies that women are more reluctant to maintain healthy habits compared to men.

Evagelou *et al.* (2014) [6] conducted a research on the nursing students' dietary habits. They mention that studying the university students' dietary habits is important since they are living away from home in a different environment. They found that 88.7 percent of students preferred home cooked meals. They found that there was a significant difference between male and female eating habits. Female students had family made food often while male students often had ready meals outside. Consumption of meat by males was significantly higher than that of girls while there was no difference between them in the consumption of fish. As such, this study is important to understand that there is a gender aspect in health habits.

Ashakiran & Deepthi (2012) [2] also studied the impact of fast food on health. They mention that the consuming junk food

on a large scale is unhealthy and it needs to switch over this consumption to healthy eating habits. Obesity and associated problems are also a result of this consumption pattern. Among the existing health practices, food related practices are very much important as it directly affects the health of people. As they mention, it is essential to look for solutions or alternative measures to substitute the adverse dietary practices with favorable practices.

Fogle & Pettijohn (2012) also studied the stress and health habits of college students. The study was focused on 135 college freshmen and hypothesized “students with lower stress levels would be male, would have better self-care health habits, would experience fewer minor medical health issues, would have higher academic performance, and would experience fewer daily hassles and more daily uplifts than students who experienced high perceived issues” (P.1). They found a strong relationship between the students with low perceived stress and better health habits.

Yien *et al.* (2011) [10] conducted a research to explore the effect of applying a game-based learning approach to nutrition education. Using two classes in an elementary school for a four week learning to one class while the other remaining as the control group, they carried out the experiment. The experimental group learned the computer-based game while the control group learned according to the traditional method. The results revealed that the learning achievement of the students of the experimental group was significantly better than the performance of the control group. This study shows the significance of exploring for innovative methods to turn the young generations into good health practices.

Vereecken *et al.* (2005) [9] also investigated on the adolescents’ food habits in 35 countries of several regions. The study found variations of the consumption of different food items between countries. They point out for the need for health habit promotion programs for the adolescents both at national and international level.

The review of literature unveils that consumption practices are strongly and very closely associated with health problems of people. Therefore, this study focuses on the analysis of the practice of good health habits by the people in Sri Lanka. Since it is generally accepted that urban and educated people are the best in understanding this situation, the study delimits the analysis for one urban residential area in Sri Lanka. Therefore, the main objective of the study was to identify how far the urban residents are used to consumption-related good health habits or practices. The achievement of the objective will reveal what practices is the lack in the case of urban residents while identifying the rich consumption habits. Therefore, the study can give recommendations for the necessary stakeholders to take necessary actions for making favorable adjustments in the consumption pattern.

## 2. Methodology

### 2.1. Data and collection methods

The study was mainly based on the primary data collected from one residential area in the Niyandagala Grama Niladari Division of Homagama Divisional Secretariat division. The sample size was 110 and all the sampling units were randomly selected using a sampling frame of households. The instrument used in the collection of data was a structured questionnaire. One adult from each selected household was

interviewed for the purpose of filling the questionnaires. Those who did not respond properly due to non-availability of adults at the time of visiting houses were revisited to collect data.

### 2.2. Analytical methods

The indicators of good health habits which were identified in the concepts section and also in the literature review were included in a questionnaire with a five point likert scale that shows the level of practice of the respondents. The five levels were as follows:

1. Very low
2. Low
3. Average
4. High
5. Very high

The list of health habits was as follows:

**Table 1:** List of good health habit indicators

Q.N.	Health habit
H1	Take breakfast every morning
H2	Get enough sleep (8 hours a day during night)
H3	Have social connections (relaxation)
H4	Exercise for better health
H5	Practice dental hygiene
H6	Take regular vision care
H7	Wear sun glasses in hot sunshine
H8	Drink more water generally (at least 3 litres a day)
H9	Take a daily walk (at least 30 minutes a day)
H10	Have a good hobby
H11	Use information about nutrition in my food choices
H12	Take regular vacations
H13	Avoid close contact with people who are sick.
H14	Stay home when you are sick
H15	Cover your mouth and nose with a tissue when coughing or sneezing
H16	Wash your hands often
H17	Avoid touching your eyes, nose or mouth
H18	Avoid smoking
H19	Avoid alcohol
H20	Think positive
H21	Eat more fiber meals
H22	Eat more fruits and vegetables
H23	Take majority of your food prepared at home
H24	Sit less and stand more
H25	Go to a doctor for necessary check ups
H26	Eat fish more compared to meat
H27	Avoid eating heavy meals before you go to bed.
H28	Eat lots of brightly colored vegetables (tomatoes, carrots, beets etc.)*
H29	Use coconut oil for cooking
H30	Avoid eating in front of the TV, a computer or while reading a newspapers
H31	Drink vegetable or tomato juice instead of fruit juices
H32	Laugh several times everyday

The analytical tools used in the study were statistical table, bar-charts, scatter plots, correlation tests, Principal component factor analysis, and a composite index. Health habit are exhibited by each of the above 32 indicators. Since the construction of composite indices well incorporates all different dimensions (Amidzic *et al.*, 2014; Chandrakumara, 2010) [1, 3], this study also constructed a composite index

incorporating all 32 health habits and their level of practice of each habit. However, weights were assigned to each habit using the coordinates of the first principal component so that it was unbiased. The index was calculated according to the following formula.

$$HHI = \sum_{i=1}^{32} RLP_i (W_i)$$

where HHI is Health Habit Index,  $RLP_i$  is the Respondent's Level of Practicing of  $i^{th}$  health habit and  $W_i$  is the weight assigned for  $i^{th}$  health habit.

### 3. Results

#### 3.1. Socio-economic characteristics

Socio-economic-demographic characteristics are important in understanding the respondents in the area. This study considered four main characteristics namely 'age distribution', 'gender', 'profession' and 'level of income' with regard to the respondents.

##### 3.1.1. Age distribution

Age of the sampling units ranges from 20 years to 63 years showing a large diversity. This is because the interviews were conducted with any of the responsible adults above age 20.

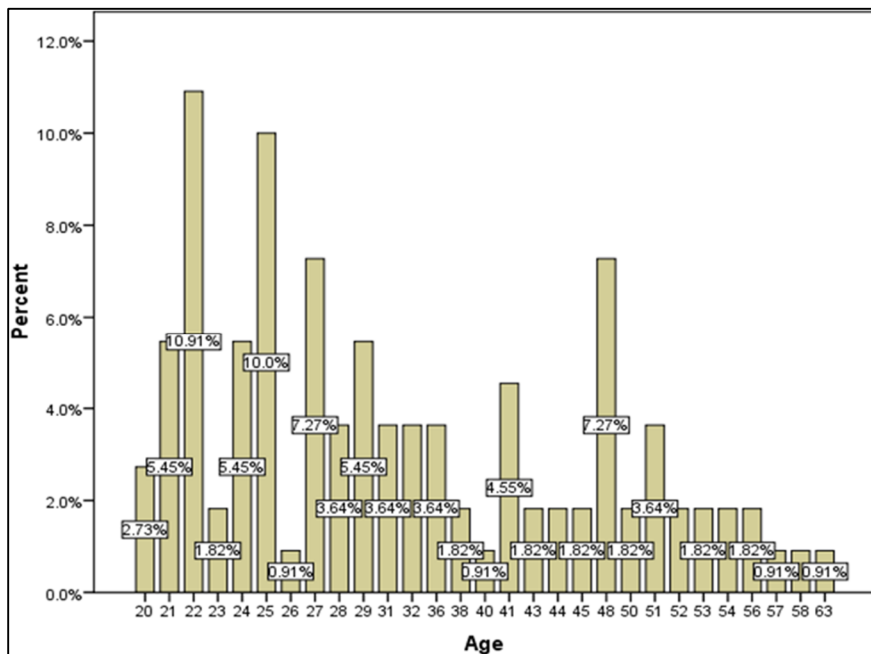


Fig 1: Age distribution

##### 3.1.2. Gender

Gender distribution of the sample shows that the majority of the respondents in the sample are females. This is mainly because the males are not at home during the day time.

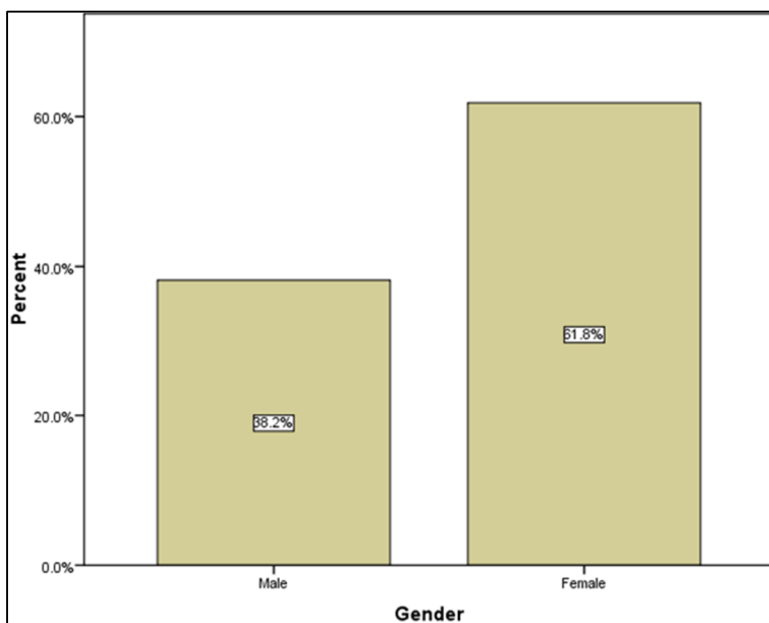


Fig 2: Gender distribution

**3.1.3. Profession**

The respondents were classified into six groups based on their profession. Among the six categories, executives represent the highest percentage while laborer or equal represent the lowest percentage. Teachers are the secondly important group of respondents though it is not much larger than the category

of clerk or equal. Being an urban residential area, the representation from the category of laborer and equal jobs is not much significant and it shows the lowest representation. The category 'other' consists of all the remaining respondents who are not included in other categories.

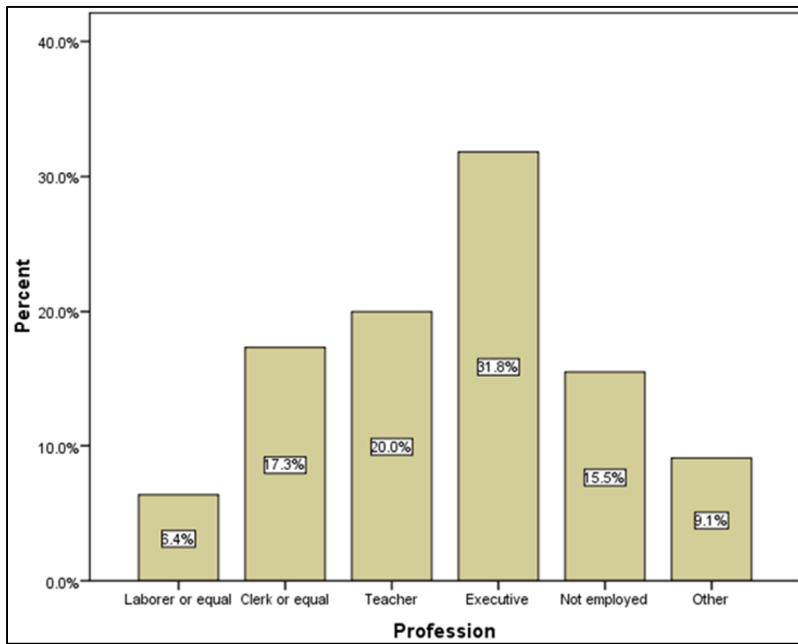


Fig 3: Distribution by profession

**31.4. Distribution by income level**

Distribution of respondents by income levels shows that the highest percentage belongs to the 30,001-60,000 category. However, the percentage of respondents who earns above

60,000 also account for nearly 25 percent. Meanwhile, the percentage of respondents below 30,000 is nearly 33 percent. This is the general situation one can observe in an urban settlement.

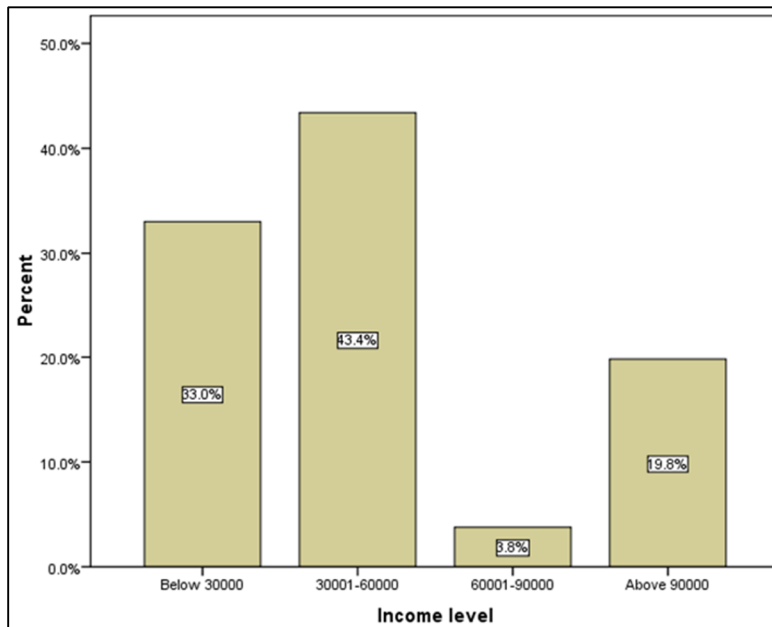


Fig 4: Distribution by income level

**3. 2. Practice of health habits by multiple indicators**

Figure 36 takes all the indicators of good health habits together into one bar-chart. It helps compare between

different habits of the respondents. Vertical axis shows the indicators from H1 to H32 while the horizontal axis indicates the percentage of respondents belong to different categories

of health habits practicing levels in five scale that vary from 'Very low' to 'Very high'. It shows that best practicing health habits are as follows (Very high):

- H1 Take breakfast every morning
- H18 Avoid smoking
- H19 Avoid alcohol

**Table 2:** Distribution of respondents by level of practice of health habits

Health habit indicators	Very low	Low	Average	High	Very high
H1	3.6	7.3	15.5	19.1	54.5
H2	5.5	8.2	30.9	33.6	21.8
H3	5.5	5.5	41.8	35.5	11.8
H4	3.9	23.6	20.9	19.1	5.5
H5	29.1	20	35.5	10	5.5
H6	36.4	23.6	22.7	14.5	2.7
H7	53.6	16.4	13.6	14.5	1.8
H8	15.45	16.36	26.36	23.64	18.18
H9	25.5	21.8	29.1	14.5	9.1
H10	17.27	15.45	34.55	18.18	14.55
H11	6.4	20	30	27.3	16.4
H12	13.6	24.5	30.9	23.6	7.3
H13	8.2	13.6	41.8	21.8	14.5
H14	11.8	9.1	27.3	31.8	20
H15	4.5	14.5	21.8	20.9	38.2
H16	5.5	8.2	19.1	30.9	36.4
H17	9.1	27.3	16.4	30.9	16.4
H18	23.6	0.9	4.5	1.8	69.1
H19	18.2	4.5	10	12.7	54.5
H20	1.8	3.6	25.5	50.9	18.2
H21	0	8.2	48.2	34.5	9.1
H22	0.9	15.5	39.1	26.4	18.2
H23	4.5	14.5	9.1	32.7	39.1
H24	12.7	15.5	44.5	23.6	3.6
H25	21.82	26.36	28.18	12.73	10.91
H26	7.27	21.82	24.55	24.55	21.82
H27	9.1	19.1	46.4	14.5	10.9
H28	3.6	20.9	31.8	25.5	18.2
H29	0	6.4	17.3	35.5	40.9
H30	30.9	20	26.4	10	12.7
H31	44.5	30.9	14.5	3.6	6.4
H32	1.8	6.4	34.5	35.5	21.8

Majority of respondents belong to the very high level of practicing the above three health habits. However, avoiding smoking and alcohol have shown such a great performance since the women in Sri Lanka do not generally smoke. The second best category includes the following habits (High + Very high):

- H2 Get enough sleep
- H14 Stay home when you are sick
- H15 Cover your mouth and nose when coughing or sneezing
- H16 Wash your hands often
- H20 Think positive
- H23 Take majority of your food prepared at home
- H29 Use coconut oil for cooking
- H32 Laugh several times daily

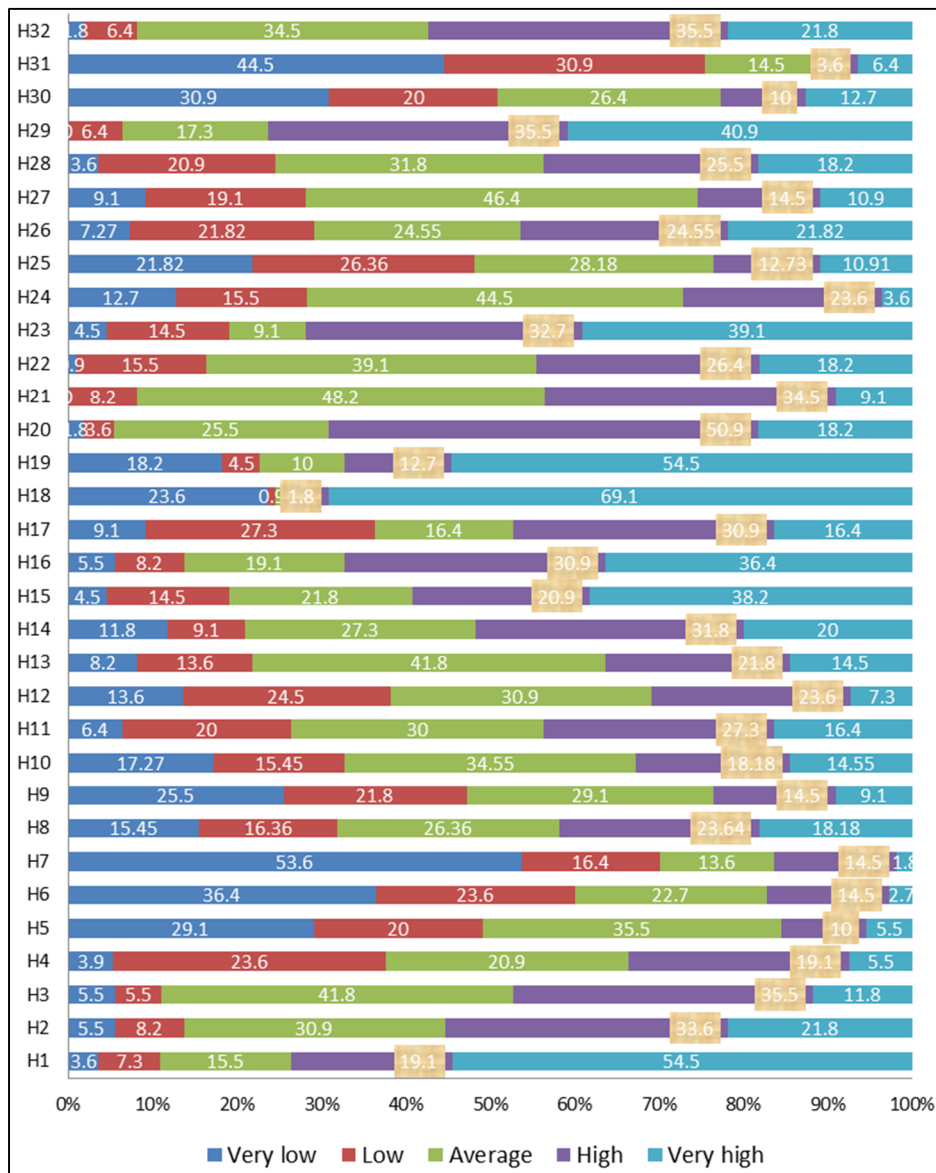
The above eight are the habits that include the respondents belonging to the 'High' and 'Very high' levels of practicing.

All the eight habits are sustained by a percentage of respondents exceeding 50 percent.

Next, the practice of the following habits is not satisfactory when considering the percentages of respondents that at different levels of practice:

- H5 Practice dental hygiene.
- H6 Take regular vision care.
- H7 Wear sun glasses in hot sun shine.
- H30 Avoid eating in front of TV, a computer or while reading a newspaper.
- H31 Drink vegetable or tomato juice instead of fruit juice.

The practice of above five habits by the respondents remains lower than the average level of practice (in the two levels of 'Very low' and 'Low').



**Fig 5:** Practice of health habits by multiple indicators

In addition to the above main features, Figure 37 and also Table 2 show that some habits are generally practiced by a substantially higher percentage of respondents. They are given below:

- H3 Have social connections.
- H13 Avoid close contacts with people who are sick.
- H21 Eat more fiber meals.
- H27 Avoid eating heavy meals before going to bed.

Sri Lankans, by culture, are said to have good social relationships. This study also has proved that idea. As health specialists points out, this feature is important since people get relaxed by being exposed to the society. The other three

features are also important for prevent or at least helping to reduce some health troubles of people.

### 3.3. A composite index of good health habits

Although the above simple indicators clearly show how far the respondents are used to practice consumption-related good health habits, they do not provide an aggregate opinion in order to take important decisions. All are not good in practicing all habits. One may be good in several consumption habits although he is weak in some other habits. Therefore, in order to takes all such things into account and show how the respondents are in the practicing of overall habits are presented through the composite index given in Table 3 and Figure 6.

**Table 3:** Composite Index of Consumption-related Health Habits (For individuals)

1	33.458	21	31.004	41	43.497	61	48.057	81	52.722	101	45.361
2	52.722	22	36.201	42	49.262	62	49.749	82	48.414	102	47.676
3	48.414	23	52.385	43	45.361	63	31.525	83	46.008	103	39.921
4	46.008	24	52.667	44	47.676	64	43.048	84	52.166	104	38.28
5	52.166	25	39.335	45	39.921	65	47.67	85	45.564	105	50.803
6	45.564	26	46.125	46	38.28	66	29.302	86	42.637	106	51.993

7	42.637	27	54.516	47	50.803	67	31.004	87	53.474	107	55.659
8	53.474	28	45.122	48	51.993	68	36.201	88	50.462	108	46.937
9	50.462	29	44.01	49	55.659	69	52.385	89	44.954	109	40.253
10	44.954	30	51.654	50	46.937	70	52.667	90	50.366	110	30.042
11	50.366	31	44.837	51	40.253	71	39.335	91	52.289		
12	52.289	32	53.135	52	30.042	72	46.125	92	40.488		
13	40.488	33	58.615	53	26.735	73	54.516	93	36.121		
14	36.121	34	42.681	54	26.438	74	45.122	94	33.904		
15	48.057	35	37.181	55	25.29	75	44.01	95	40.598		
16	49.749	36	33.904	56	23.283	76	51.654	96	39.115		
17	31.525	37	40.598	57	25.552	77	44.837	97	48.036		
18	43.048	38	39.115	58	28.369	78	53.135	98	53.16		
19	47.67	39	48.036	59	32.862	79	58.615	99	43.497		
20	29.302	40	53.16	60	43.339	80	33.458	100	49.262		

It shows that the composite index of health habits is not very low for the urban residents. However, it varies among individuals between 20 and 60. The higher the value, higher will be level of practicing of good health habits and vice versa.

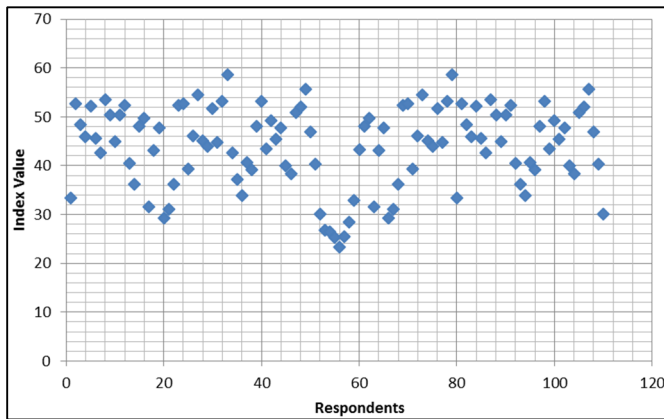


Fig 6: Distribution of index values by respondents

Figure 7 shows that the respondents at the age range of 20-30 are better in practicing good health habits compared to others. It means that younger generation has a more concern about health related consumption and practices.

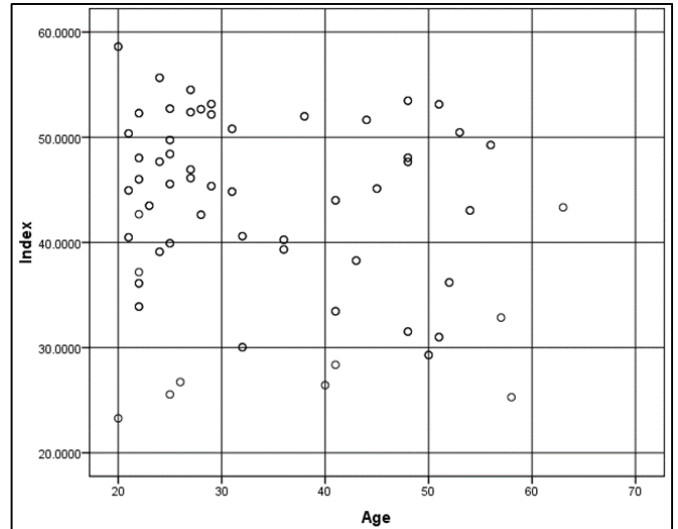


Fig 7: Distribution of index values by age

Furthermore, Figure 8 shows the correlation between composite index and socio-economic variables related to the respondents. As shown by the correlation results, education level of respondents has a significant positive correlation with the composite health index. This means that educated people are more responsive to good adopt good health habits.

Table 8: Correlations (Spearman)

Index	Correlation Coefficient Sig.							
Age	Correlation Coefficient Sig.	-.144 (.132)						
Gender	Correlation Coefficient Sig.	.149 (.122)	-.314** (.001)					
Profession	Correlation Coefficient Sig.	.049 (.608)	-.253** (.008)	.033 (.730)				
Education level	Correlation Coefficient Sig.	.305** (.001)	-.212* (.026)	.159 (.098)	.295** (.002)			
Income level	Correlation Coefficient Sig.	.205* (.035)	.603** (.000)	-.119 (.223)	-.006 (.950)	.301** (.002)		

### 3.4. Discussion of results

The main objective of the study was to identify how far the urban residents are used to practice good health habits and to know the importance of personal attributes of individuals who are adopting good health habits. First, it shows that out of the 32 good health habits considered at the study only three habits were very successfully being practiced by the urban residents. They are 'taking breakfast every morning', 'avoiding

smoking' and 'avoiding alcohol' at very high level. It is important that a number of severe diseases can be avoided through these good practices as identified in the conceptual and empirical literature. However, avoiding smoking and alcohol have been overestimated since females in Sri Lanka generally have no habit to consume alcohol and smoking. Next, the second best category of health habits practicing by the respondents 'get enough sleep' 'stay home when you are

sick' 'cover your mouth and nose when coughing or sneezing' 'wash your hands often' 'think positive' 'take majority of your food prepared at home' 'use coconut oil for cooking' and 'laugh several times daily'. As identified in the conceptual and literature review sections, all these good practices are also important in avoiding many health problems.

However, the practicing of health habits such as 'practice dental hygiene' 'take regular vision care' 'wear sun glasses in hot sun shine' 'avoid eating in front of TV, a computer or while reading a newspaper' and 'drink vegetable of tomato juice instead of fruit juice' is not satisfactory at all. Among these, dental hygiene and vision care should be especially mentioned and should be given due attention of all stakeholders.

#### 4. Conclusion

Practicing of good health habits of the urban people in the investigated area is appreciable especially when considering smoking and alcohol consumption. This is fortunately because there are no such consumption habits of the female population in the country by tradition and the culture. As such, it should be attempted to continue and improve these habits by policy manipulation in the future also.

Most of the other good health habits can be improved with no involvement of any cost of consumption to the adopters. For example, 'avoiding of eating in front of TV, a computer or while reading a newspaper' does not involve any cost for doing it. Education shows a strong positive correlation with the adoption of good health habits. As such, consumption habits can be improved by educating the people through well-designed programs. Educating school children in this regard can also be a good attempt.

#### 5. References

1. Amidzic G, Massara A, Mialou A. Assessing Countries Financial Inclusion Standing: A New Composite Index. IMF Working Paper WP/14/36, International Monetary Fund, Available from: 2014. <https://www.imf.org/external/pubs/ft/wp/2014/wp1436.pdf>, Accessed on 8.1.2016.
2. Ashakiran, Deepthi R. Fast Food and their Impact on Health. Journal of Krishna Institute of Medical Sciences. 2012; 1(2):7-15.
3. Chandrakumara D.P.S. Construction of an Assets Index for Measuring Relative Welfare of Families, Problems and Prospects of Economic Development in the 21<sup>st</sup> Century: A Festschrift in Honour of Professor Dayananda Somasundara, Sunil Shantha, M. *et al.* (eds). Colombo: Godage International Publishers (Pvt) Ltd., 2010, 331-340.
4. Cobb-Clark D.A, Kassenboehmer S.C, Schurer S. Healthy Habits: The Connection between Diet, Exercise, and Locus of Control. IZA Discussion Paper No. 6789, Institute for the Study of Labor, Available from: 2012. <http://ftp.iza.org/dp6789.pdf> Accessed on 05.01.2016.
5. Department of Census and Statistics. Sri Lanka Health at a Glance. Available from: 2008, 1. [http://www.statistics.gov.lk/Newsletters/Health%20Bulletin%20\(Medical%20Stat\).pdf](http://www.statistics.gov.lk/Newsletters/Health%20Bulletin%20(Medical%20Stat).pdf), Accessed date 01.02.2016.
6. Evagelou E, Vlachou E, Polikandrioti M, Koutelekos I, Dousis E, Kyritsi E. Exploration of nursing students' dietary habits. Health Science Journal. 2014; 8(4):452-468.
7. Fogle G.E, Pettijohn T.F. Stress and Health Habits in College Students. Open Journal of Medical Psychology, Available from: 2013; 2:61-68. <http://www.scirp.org/journal/ojmp>, Accessed on 01.01.2016.
8. National Cancer Control Program. Cancer Incidence data. Available from: 2007. <http://www.health.gov.lk/en/publication/cancer/Cancer%20Registry%202007%20final%20version.pdf>, Accessed date 01.02.2016.
9. Vereecken C.A, Henauw S. De, Maes L. Adolescents' Food Habits: Results of the Health Behavior in School-aged Children Survey. British Journal of Nutrition. 2005; 94:423-431. DOI: 10.1079/BJN20051513.
10. Yien J.M, Hung C.M, Hwang G.J, Lin Y.C. A Game-based Learning Approach to Improving Students Learning Achievements in a Nutrition Course. The Turkish Online Journal of Educational Technology. 2011; 10(2):1-10.