

# Health Literacy And Physical Activity Impact In Kanyakumari District

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## ABSTRACT

Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. Regular physical activity, exercise, and wellness are a key determinant of both physical and mental health. Physical activity is a modest and solid method for anticipation of diseases, improvement health and prosperity. Regular physical activity or more prominent physical activity applies useful impact on numerous parts of health and lessens the danger of a few chronic diseases. Because of both the health, economic, and social advantages of physical activity just as the significant expenses of inactivity, rising obesity and diabetes, and maturing populations a few nations have executed national activities to advance physical activity. Health literacy may improve information and aptitude of the individuals from the general public that thusly demonstrations an instrument to address health imbalances. Health literacy implies subjective and social aptitudes of a person that decide their capacity to get to, understand and use health data so as to advance and keep up great health. The present study deals with the perceived opinions towards health and health literacy in Kanyakumari district and the physical activities adopted by the adults in the study area. Here, socio-economic status of the adults, perception of health, health literacy, physical activities and its effectiveness, health consciousness are some of the dimensions taken for analysis. Population sampling is defined as adult above 25 years residing in Kanyakumari district of Tamil Nadu. Questionnaire for primary and secondary data have been followed. The questions of the questionnaire are taken for analysis. Kruskal Wallis 1-way Anova test, Neural Network Model, were used as analytical tools. After performing SPSS, the significant values of all variables related to health perceptions of the adults are greater than 0.05. So the health perceptions and physical activity of the adults are same across the categories of the age, gender, marital status, occupation, geographical region etc.

**Key words:** Anova, Kruskal wallis, Neural network, Sampling, SPSS, Questionnaire

## 1. INTRODUCTION

Regular physical activity, exercise, and wellness are a key determinant of both physical and mental health. Physical activity is a modest and solid method for anticipation of diseases, improvement health and prosperity. Regular physical activity or more prominent physical activity applies useful impact on numerous parts of health and lessens the danger of a few chronic diseases. Because of both the health, economic, and social advantages of physical activity just as the significant expenses of inactivity, rising obesity and diabetes, and maturing populations a few nations have executed national activities to advance physical activity. These days, physical activity for transportation like strolling and cycling, utilization of open vehicle became object of intrigue. The adequacy of interventions to increment physical activity was quickened by developing consciousness of overall overweight and obesity, proof of chronic sickness in children and adolescence, and maturing populations in many pieces of the world through health literacy. Health literacy has been perceived as one of the determinants of remaining healthy, recouping from ailment and improving health-related personal satisfaction in people. Health literacy may improve information and aptitude of the individuals from the general public that thusly

demonstrations an instrument to address health imbalances. Health literacy implies subjective and social aptitudes of a person that decide their capacity to get to, understand and use health data so as to advance and keep up great health. Health literacy is a moderately new and rising idea, in light of the possibility that both health and literacy are critical for day by day life. In forecast of an individual's health, health literacy is more grounded than his/her age, race, training, pay and work status. Health literacy is significant for health as well as for socioeconomic improvement since constrained health literacy expands health care cost, present issue in instructing patients with chronic diseases as well. All things considered, the significance of health literacy is more than having the option to make clinical arrangements and read leaflets. Individuals need to understand and utilize health data so as to pick a healthy way of life or to exploit preventive measures or to realize how to look for clinical consideration, and so forth. There are numerous obstructions to use of health care and to the appropriation of healthy oral health rehearses. These range from money related issues, absence of access to suppliers and sufficient preventive consideration to a range of natural, conduct, community and social components. Low health literacy is likewise one among these components.

Physical activity is characterized as any substantial development created by skeletal muscles that requires vitality use, including exercises embraced while working, playing, completing family unit errands, voyaging, and taking part in recreational interests. Regular and sufficient degrees of physical activity improve strong and cardio respiratory wellness, improve bone and useful health, diminish the danger of hypertension, coronary illness, stroke, diabetes. An expansion in the utilization of "latent" methods of transportation additionally adds to insufficient physical activity. Insufficient physical activity is one of the main hazard factors for death around the world. The major difference between physical activity and health-related physical fitness components are body composition, immunity, briskness, strength and agility. Though there are certain differentiations between the aspects of physical activity, there is no rational opinion among the components of physical activity and health-related physical fitness concerned. The purpose of this study was to compare general physical fitness and health related physical fitness among professionals and non-professional adults and was to establish relationship between general and health-related physical fitness. Health literacy gives the knowledge and skills to thrive physically, mentally, emotionally and socially. Some of the research questions arised in this study are

1. What are the health literacy concepts to educate the adults in India?
2. What are the perceived opinions towards health among adults?
3. What are the physical activities aspects adopted by the adults?
4. What is the Impact of physical activity over the adult's health aspects?
5. What is the impact of health literacy and physical activity adopted by the adults in Kanyakumari District?

The research takes the socio demographic factors of the adults in the selected area of the study are considered for the study. Perception of Health, Health Literacy, Physical activities adopted by adults, effectiveness of physical activity and Effectiveness of the health literacy are taken as the major independent variables and Health consciousness and satisfaction of Adults are taken as the dependent variable. The research is studied how and to what extent the independent variables make changes in the dependent variable.

## **2. REVIEW OF LITERATURE**

Verena Menec, Judith, Chipperfield and Raymond Perry (2004) examined the association between health perceptions and control-upgrading methodologies in managing an age-related test over which effort of control is likely conceivable. All the more explicitly, we concentrated on how older adults manage troubles with relaxation exercises. The quest for relaxation exercises takes on an especially significant job in later life.

In this regard, Heckhausen (1997) indicated that while objectives identified with work, family, and funds were appraised as significant by young adults, relaxation, health, and network related objectives prevailed in older adults.

Kim and Jung (2015), who found that health-promoting conduct has a solid and positive connection with health observation, health awareness and abstract health status; and revealed that religion and social help positively affect current health perceptions, gloom and future health viewpoints.

Teresa Soares Souto, Ana Ramires, Angela Leite, Vanessa Santos, Raquel Espírito Santo (2018), assessed that the view of health is the past history and the current health circumstance and not health points of view, health concerns, protection from ailment, or disorder direction. Truth be told, concentrates with populaces of subjects with hereditary changes that cause lethal ailments present a superior health observation than subjects of everybody before they become suggestive (*Leite, Paúl, and Sequeiros, 2002*), and along these lines it appears that subjects see their health contrarily just within the sight of symptomatology or during the unequivocal indication of a disease.

The novel commitment of health perceptions to mortality is generous for both older adults and all inclusive community tests, with individuals rating their health as "poor" being somewhere in the range of 1.5 and multiple times bound to kick the bucket than people who see their health as "incredible." The connection between health perceptions and mortality is a powerful one and continues when measurably controlling for

target health measures, yet in addition for various different factors, for example, health related conduct like liquor use, work out, smoking stresses over health (Wolinsky and Johnson, 1992), and so forward. Health literacy is a generally new and developing idea, in view of the possibility that both health and literacy are urgent for day by day life. In expectation of an individual's health, health literacy is more grounded than his/her age, race, instruction, pay and business status.

3.

### **MATERIALS AND METHODS**

#### **3.1. METHOD OF DATA COLLECTION**

Primary and Secondary data collection methods have been used in research study. Primary data is collected by researchers, especially to answer research question-for instance, when you observe certain production and managerial operations and measure their cost, or when mind writer surveys its complete care towards its respondents to see what changes would improve their satisfaction. The primary data collection method consists of a structural closed ended and open ended questionnaire. Secondary data is collected from journals, websites and magazines.

#### **3.2. PILOT STUDY**

Pilot study was directed to evaluate the attainability of the study. It was in reality a preliminary run done in anticipation of the last study and was instrumental in structuring the research convention, distinguishing and settling the example, and, in deciding the device of information assortment. Through conversations with the respondents, the pilot study empowered to evoke data of the respondents about their socio economic status, the information about the health perceptions considered for the study and about the physical activity and health literacy possessed to improve the health consciousness and satisfaction. The pilot study additionally assists with distinguishing the potential and useful issues in information assortment. It helps in disposing of immaterial inquiries and to re-word the troublesome or uncertain inquiries. The essential changes and alterations were made and the questionnaire was finalized.

#### **3.3. DIMENSIONS OF THE STUDY**

Apart from the socio demographic factors of the respondents, the present study takes the following dimensions for it analysis.

- Socio- Economic Status of the adults.
- Perception of Health.
- Health literacy
- Physical activities adopted by adults.
- Effectiveness of Physical activities.
- Effectiveness of Health literacy.
- Health conscious and satisfaction

These are the dimensions considered for the research study.

#### **3.4. AREA OF THE STUDY**

The research study is performed in Kanyakumari district of Tamil Nadu state. The sample is restricted to adult respondents who are above 25 years of age.

##### **3.4.1 Kanyakumari District**

Kanyakumari District, one of the smallest districts in the state of Tamil Nadu, lies at the southernmost tip of Peninsular India where there is a confluence of Indian Ocean, the Arabian Sea and the Bay of Bengal. It is predominantly an agricultural region with vast natural resources and variety of geological features, including the rich heritage of rural coastline. It stands second in terms of population density among the districts of Tamil Nadu and the second most urbanized, next only to Chennai district. It is also the richest district in Tamil Nadu in terms of per capita income, and also tops the state in Human Development Index (HDI), literacy and education. The district's headquarters is Nagercoil. Kanyakumari district has a varied topography with the sea on three sides and the mountains of the Western Ghats bordering the northern side. Except for a small stretch of land to the west of Kanyakumari town, almost the entire district is sandwiched between the Western Ghats and the Arabian Sea - the only district in Tamil Nadu state facing the Arabian Sea. Geologically, the landmass of the district is much younger when compared to the rest of the state - faulted as late as 2.5 million years during the Miocene, after which numerous transgression, as well as regression of sea, had shaped the western coast of the district. The district is popular for its educational excellence. Schools and Colleges of higher education are found throughout the district. Government schools are in good numbers comparing private institutions. Government schools compete with private schools in excellence. The district is divided into two revenue divisions viz., Padmanabhapuram and Nagercoil, having headquarters at Thuckalay and Nagercoil respectively. There are four Taluks namely Agasteeswaram, Thovalai, Kalkulam and Vilavancode. The district has been divided into 9 Panchayat unions namely Agasteeswaram, Thovalai, Rajakkamangalam, Kurunthencode,

Thuckalay, Thiruvattar, Killiyoor, Melpuram and Munchirai. The district has four municipalities namely Nagercoil, Padmanabhapuram, Colachel and Kuzhithurai, six Assembly Constituency and one Parliamentary Constituency.

### **3.5. POPULATION SAMPLING**

A research population is known as a well-defined collection of individuals or objects known to have similar characteristics. If a population is not properly defined, a researcher does not know what units to consider when selecting the sample. This study also owns infinite population (population with indefinite members) and therefore the population is defined as the adult individuals above 25 years residing in the study area Kanyakumari District of Tamil Nadu state under the chosen municipalities of the Districts.

## **FRAME WORK OF ANALYSIS**

### **3.6.1 SOCIO - DEMOGRAPHIC PROFILE OF THE ADULTS**

Demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. The demographic factors like Gender, Age, Marital Status, Education Qualification, occupation, Income, Area of residence, etc. helps to identify the needs, interest, and affordability of the respondents.

### **3.6.2. SETTING QUESTIONARE:**

The questions of the questionnaire have been taken for analysis in the chronological order. Responses of every question are tabulated and then analyzed.

### **3.6.3. PERCENTAGE ANALYSIS**

In the percentage analysis, responses for every question are analyzed with the help of percentages. The percentages are the common tools used for analyzing the data and the percentage is the appropriate tool to determine the majority and minority classification in respect of the responses.

### **3.6.3. STATISTICAL ANALYSIS**

The statistical analysis section consists of 67 test of hypothesis. Krusal-Wallis 1-Way Anova Test, Kendall's W Test Multiple Regression, Neural Network Model, Factor analysis and SEM were used as analytical tools.

#### **3.6.4.1. KRUSKAL–WALLIS TEST**

A significant Kruskal–Wallis test indicates that at least one sample stochastically dominates one other sample. The test does not identify where this stochastic dominance occurs or for how many pairs of groups stochastic dominance obtains. Since it is a non-parametric method, the Kruskal–Wallis test does not assume a normal distribution of the residuals, unlike the analogous one-way analysis of variance. If the researcher can make the assumptions of an identically shaped and scaled distribution for all groups, except for any difference in medians, then the null hypothesis is that the medians of all groups are equal, and the alternative hypothesis is that at least one population median of one group is different from the population median of at least one other group.

#### **3.6.4.2. NEURAL NETWORK (NN) METHOD**

Neural Network method is a modelling technique used to model problems having parameters with complicated mapping relationships. NN is a computing system made up of a number of simple and highly interconnected processing elements, which processes information through its dynamic state response to external inputs.

#### **3.6.4.3. MEAN AND STANDARD DEVIATION**

Mean is one of the measures of central tendency that summarizes the data and discloses the feature of the data. It is a widely used statistical tool that discloses the selected characteristics of the data. In this study, the mean is applied to study the feature of the data. At the same time, the extent of reliability of the mean is a factor that is determined with the help of standard deviation. The standard deviation is a tool to measure variability of the data. Higher the value of the standard deviation lesser is the reliability of the data. So, the extent to what level the mean discloses the exact characteristics of the data are determined with the help of the standard deviation.

## **4. RESULT AND DISCUSSION**

### **4.1. SOCIO- DEMOGRAPHIC PROFILE**

Demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. Thus socio demographic factor gains its own importance for framing the hypothetical statements to discover the positive and negative effects over the dimensions considered for the study. The demographic factors like Gender, Age, Marital Status, Education Qualification,

occupation, Income, Area of residence, etc. helps to identify the needs, interest, and affordability of the respondents.

The socio demographic values of 700 selected respondents of the study is exhibited in the table 4.1 and it infers that 46.9% of the respondents selected for the research survey are mostly under the age group of 25 - 35 in majority and the next majority is from the age group 36 - 45 that accounts to 25.4%. From this demographic character it is understood that, the respondents chosen as sample are between the age group 25 to 45. The majority of 70.0% of them are male and the female respondents' accounts to 30.0% only. The Adults who are taken as sample respondents are mostly married (58.6%). Regarding the Educational Qualification, most of the respondents are educated and a majority of 43.0% are qualified SSLC. 28.9% of the respondents are qualified HSC and 14.3% of the respondents are qualified with graduation. Most of the respondents say 39.4% of them are doing business as occupation and 35.3% of the respondents are Professionals. Considering the Geographical region of the adults, the majority of the sample respondents say 45.1% reside in urban area. Regarding the monthly income, 35.6% respondents in majority are earning 10000-50000 rupees. 32.1% of the respondents are earning monthly income below 10000 rupees.

#### 4.2. ANALYSIS OF HEALTH PERCEPTIONS OF THE ADULTS

The analysis on Health Perception of the adults include the opinion statements of the respondents such as 'Health care is the most important, Manage health condition, Aware of my medications, Self-medication, Understand causes of health condition, Knowledge on different medical treatments available, Prevention is better than cure and Maintain the lifestyle changes' are the variables taken for testing the hypothetical statements framed.

##### 4.2.1 MEAN AND STANDARD DEVIATION ON HEALTH PERCEPTIONS OF THE ADULTS

The empirical calculations obtained from the above table infers that, the mean score identified for all the variables of health perceptions of the adults considered for the study such as 'Health care is the most important, Manage health condition, Aware of my medications, Self-medication, Understand causes of health condition, Knowledge on different medical treatments available, Prevention is better than cure and Maintain the lifestyle changes' seems to appear on the measuring scale 'Neither agree Nor Disagree' as the mean is greater than 3 and less than 4. The attributes such as 'Manage health condition, Aware of my medications, Self-medication, Understand causes of health condition, Knowledge on different medical treatments available, Prevention is better than cure and Maintain the lifestyle changes' deviates from the scale 'Neither agree Nor Disagree' to 'Agree' except the factor 'Health care is the most important', where the others remain same thus determining the standard deviation. This shows that the standard deviation indicates that the factors are spread out over a wider range of values. As the standard deviation is nearer to the mean, the above result explores the fact that the opinion statements of the adults regarding their Health Perceptions considered for the study are suitable for the analysis.

##### 4.2.2. KRUSAL-WALLIS 1-WAY ANOVA TEST FOR HEALTH PERCEPTIONS OF THE ADULTS

###### Krusal-Wallis 1-Way ANOVA Test for health perceptions of the adults and age of the adults

###### Hypothesis

**Null hypothesis  $H_0$** —The distribution of health perceptions of the adults is same across the categories of the socio-demographic profile of the adults.

**Alternative hypothesis  $H_1$**  -The distribution of health perceptions of the adults is not same across the categories of the socio-demographic profile of the adults.

Based on the result generated by SPSS 21, the significant values of all the variables related to health perceptions of the adults are greater than 0.05. So the null hypothesis is accepted in all cases. Therefore, the distributions of health perceptions of the adults are same across the categories of the age of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the age of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on their age. Therefore we can conclude that there is no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the gender of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the gender of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on their gender. Therefore we can conclude that there is no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the marital status of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the marital status of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on

their marital status. Therefore we can confine that there is a no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the education of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the education of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on their education. Therefore we can confine that there is a no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the occupation of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the occupation of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on their occupation. Therefore we can confine that there is a no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the geographical region of the adults. The evaluated results and its inference derived from the table conclude the fact that the variables related to health perceptions of the adults considered, had no implications on the geographical region of the adults. The opinion statements of the adults regarding the health perceptions do not vary with any difference based on their geographical region. Therefore we can confine that there is a no statistical significance of the hypothetical statement.

The distribution of health perceptions of the adults are same across the categories of the monthly income of the adults (Expect Health care is the most important, Manage health condition, Knowledge on different medical treatments available). The evaluated results and its inference derived from the table conclude the fact that the variables "Health care is the most important (.019<.05)", "Manage health condition (.031<.05)" and Knowledge on different medical treatments available(.011<.05)" related to health perceptions of the adults considered, had implications on the monthly income of the adults. The opinion statement of the adults regarding their health perception does not vary with any difference based on their monthly income. Therefore we can confine that there is a statistical significance of the hypothetical statement and it has 95% chance of being true.

#### **4.2.3. ANALYSIS OF OVERALL SATISFACTION WITH REGULAR PHYSICAL ACTIVITY ON HEALTH PERCEPTIONS OF THE ADULTS BY USING THE NEURAL NETWORK (NN) METHOD**

The Neural Network architecture, used in this study, is a multilayer feed forward network using SPSS 21. The architecture which provides the best fit for the data is the network with three hidden layers and an output layer. The learning and momentum parameters are 0.6 and 0.9 respectively and error convergence falls below 0.01 Percent. Tan sigmoid is the activation function chosen for the hidden layers, and the pure linear function is used to get the output layer which is the real time values. The architecture which provides the best fit for the data is the network with seven input layers, eight covariate variables and one hidden layers and one output layer, as shown in figure 4.2.3.1.

The neural network model stems from the studies on the working of human brain systems, and serves as an associative memory between the input and output patterns. These models contain many densely interconnected elements called Neurons or Nodes. The neuron has a set of "n" inputs "x"<sub>j</sub>, where the subscript "j" takes a value from 1 to "n" and indicates the source of the input signal. Each input "x"<sub>j</sub> is weighted before reaching the main body of the processing elements, by the connection strength or weight factor "w"<sub>j</sub>. (Multiplied by "w"<sub>j</sub>). In addition, it has a bias term "w"<sub>0</sub>, a threshold value that has to be reached or exceeded for the neuron to produce a signal, a non-linearity function F that acts on the produced signal (or activation) R, and an output O. The non-linearity function used in this network is the sigmoid. The sigmoid is very popular because it is monotonic, is bounded, and has a derivative: f'(s) = kf(s) [1-f(s)]. The model used in this work is the Feed Forward Multilayer perception, using the Back Propagation Algorithm. Where (4-3-1)

7- Input layers

8- Covariates layers

1- Hidden layers

1- Output layer

All inputs are analyzed in the experimental validation part, with appropriate output results by the illustration of graphs so that the influences of the parameters of tensile strength are taken into consideration. The network information is presented in the table. The validation of the estimated NN and Experimental value illustrations is shown in Figure.

parameters are modelled by using the Neural Network Method. The parameters are optimized so as to determine the set of parameters, which will influence the increase in the overall satisfaction with regular physical activity on health perceptions of the adults by using Neural Networks Architecture and network information.

## 5. CONCLUSION

Unforeseen weakness in health literacy is related with unexpected frailty practices and results. Despite the fact that anybody can have low health literacy, low health literacy is fundamental to health inequalities as distraught or weak gatherings, especially those from impeded financial foundations, debilitated individuals, more seasoned individuals, and transients and individuals from ethnic minority bunches are most in danger. As an individual's literacy, language and numeracy aptitudes are not fixed - they can be improved, and health literacy is in like manner a manageable determinant of health. Nearby strategies to improve health literacy hence can possibly improve health results all the more comprehensively, just as to diminish health inequalities. To be powerful, be that as it may, health literacy strategies need to address the two people's capacities and health and social consideration responsiveness – the capacity to serve individuals' needs, paying little heed to singular capacity. Strategies that focus on expansive populaces and which consolidate a specific spotlight on serving and connecting low health literacy populaces are probably going to deliver the best profits in decreasing health inequalities. A wide scope of partners have a task to carry out in fortifying health literacy. Experts (over all levels of associations) from health and social consideration administrations should be upheld by different parts, including youngster and grown-up instruction, managers and the third segment, just as by families and networks themselves, to address health literacy and decrease health inequalities at the neighbourhood level.

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## TABLES

**TABLE - 3.1** SAMPLE SIZE ACROSS THE STUDY AREA

Name of the municipalities, sample respondents, sample responses are in the table.

Name of the Municipalities	Target Sample respondents	Valid Sample responses
Nagercoil	200	179
Padmanabhapuram	200	163
Kuzhithuri	200	178
Colachel	200	180
<b>Total</b>		<b>700</b>

**TABLE - 4.1.** FREQUENCY ANALYSIS OF SOCIO –DEMOGRAPHIC PROFILE OF THE ADULTS  
Socio- demographic profile of the adult are recorded in the table.

Socio - demographic profile of the adults		Frequency	Percent
Age of the adults	25 -35 Years	328	46.9
	36 -45 Years	178	25.4
	46 -55 Years	144	20.6
	Above 55 Years	50	7.1
	Total	700	100.0
Gender of the adults	Male	490	70.0

	Female	210	30.0
	Total	700	100.0
Marital status	Unmarried	290	41.4
	Married	410	58.6
	Total	700	100.0
Educational of the adults	Secondary	301	43.0
	Higher secondary	202	28.9
	Graduate	100	14.3
	Post Graduate	97	13.9
	Total	700	100.0
Occupational of the adults	Business	276	39.4
	Professional	247	35.3
	Housewife	83	11.9
	Student	31	4.4
	Any other	63	9.0
	Total	700	100.0
Geographical region of the adults	Rural	228	32.6
	Urban	316	45.1
	Semi-Urban	156	22.3
	Total	700	100.0
Monthly Income of the adults	Below 10000	225	32.1
	10000-50000	249	35.6
	25000-50000	124	17.7
	50000-100000	67	9.6
	Above 100000	35	5.0
	Total	700	100.0

**TABLE – 4.2.1** MEAN AND STANDARD DEVIATION FOR HEALTH PERCEPTIONS OF THE ADULTS  
Mean and standard deviation for health perception of adults are recorded in the table.

Health perceptions of the adults	Mean	Std. Deviation	Variance
Health care is the most important	3.83	.783	.613
Manage health condition	3.61	1.286	1.655
Aware of my medications	3.32	1.322	1.749
Self-medication	3.65	1.267	1.606
Understand causes of health condition	3.30	1.284	1.648
Knowledge on different medical treatments available	3.63	1.326	1.757
Prevention is better than cure	3.38	1.256	1.578
Maintain the lifestyle changes	3.24	1.292	1.668

**TABLE – 4.2.2.** KRUSAL-WALLIS 1-WAY ANOVA TEST FOR HEALTH PERCEPTIONS OF THE ADULTS AND SOCIO-DEMOGRAPHIC PROFILE OF THE ADULTS

Health perceptions of the adults (Null Hypothesis)	Age		Gender		Marital Status		Education		Occupation		Geographical Region		Monthly income	
	Sig. value	Decision	Sig. value	Decision	Sig. value	Decision	Sig. value	Decision	Sig. value	Decision	Sig. value	Decision	Sig. value	Decision
The distribution of Health perceptions of the adults in respect of Health care is the most important is same across the categories of socio – demographic profile of the adults	.278	Retain	.945	Retain	.142	Retain	.456	Retain	.286	Retain	.103	Retain	.019	Reject
The distribution of Health perceptions of the adults in respect of Manage health condition is same across the categories of socio – demographic profile of the adults	.965	Retain	.445	Retain	.497	Retain	.990	Retain	.575	Retain	.850	Retain	.031	Reject



The distribution of Health perceptions of the adults in respect of Aware of my medications is same across the categories of socio – demographic profile of the adults	.844	Retain	.975	Retain	.835	Retain	.606	Retain	.739	Retain	.623	Retain	.283	Retain
The distribution of Health perceptions of the adults in respect of Self-medication is same across the categories of socio – demographic profile of the adults	.734	Retain	.908	Retain	.119	Retain	.655	Retain	.118	Retain	.451	Retain	.081	Retain
The distribution of Health perceptions of the adults in respect of Understand causes of health condition is same across the categories of socio – demographic profile of the adults	.828	Retain	.918	Retain	.700	Retain	.774	Retain	.688	Retain	.782	Retain	.428	Retain
The distribution of Health perceptions of the adults in respect of Knowledge on different medical treatments available is same across the categories of socio – demographic profile of the adults	.855	Retain	.888	Retain	.203	Retain	.320	Retain	.332	Retain	.400	Retain	.011	Reject
The distribution of Health perceptions of the adults in respect of Prevention is better than cure is same across the categories of socio – demographic profile of the adults	.629	Retain	.707	Retain	.698	Retain	.970	Retain	.870	Retain	.706	Retain	.852	Retain
The distribution of Health perceptions of the adults in respect of Maintain the lifestyle changes is same across the categories of socio – demographic profile of the adults	.873	Retain	.732	Retain	.523	Retain	.854	Retain	.256	Retain	.526	Retain	.962	Retain

Source: Calculated from SPSS 21, Note: The significant values are greater than 0.05, the null hypothesis is accepted&The significant values are less than 0.05, the null hypothesis is rejected

**TABLE – 4.2.3.1. MODEL SUMMARY FOR NEURAL NETWORK MODEL FOR OVERALL SATISFACTION WITH REGULAR PHYSICAL ACTIVITY ON HEALTH PERCEPTIONS OF THE ADULTS**

Training	Sum of Squares Error	233.865
	Relative Error	.991
	Stopping Rule Used	1 consecutive step(s) with no decrease in error <sup>a</sup>
	Training Time	0:00:00.73
Testing	Sum of Squares Error	125.299
	Relative Error	.947
Dependent Variable: Overall satisfaction with regular physical activity		
a. Error computations are based on the testing sample.		

**TABLE – 4.2.3.2 NEURAL NETWORK MODEL FOR OVERALL SATISFACTION WITH REGULAR PHYSICAL ACTIVITY ON HEALTH PERCEPTIONS OF THE ADULTS**

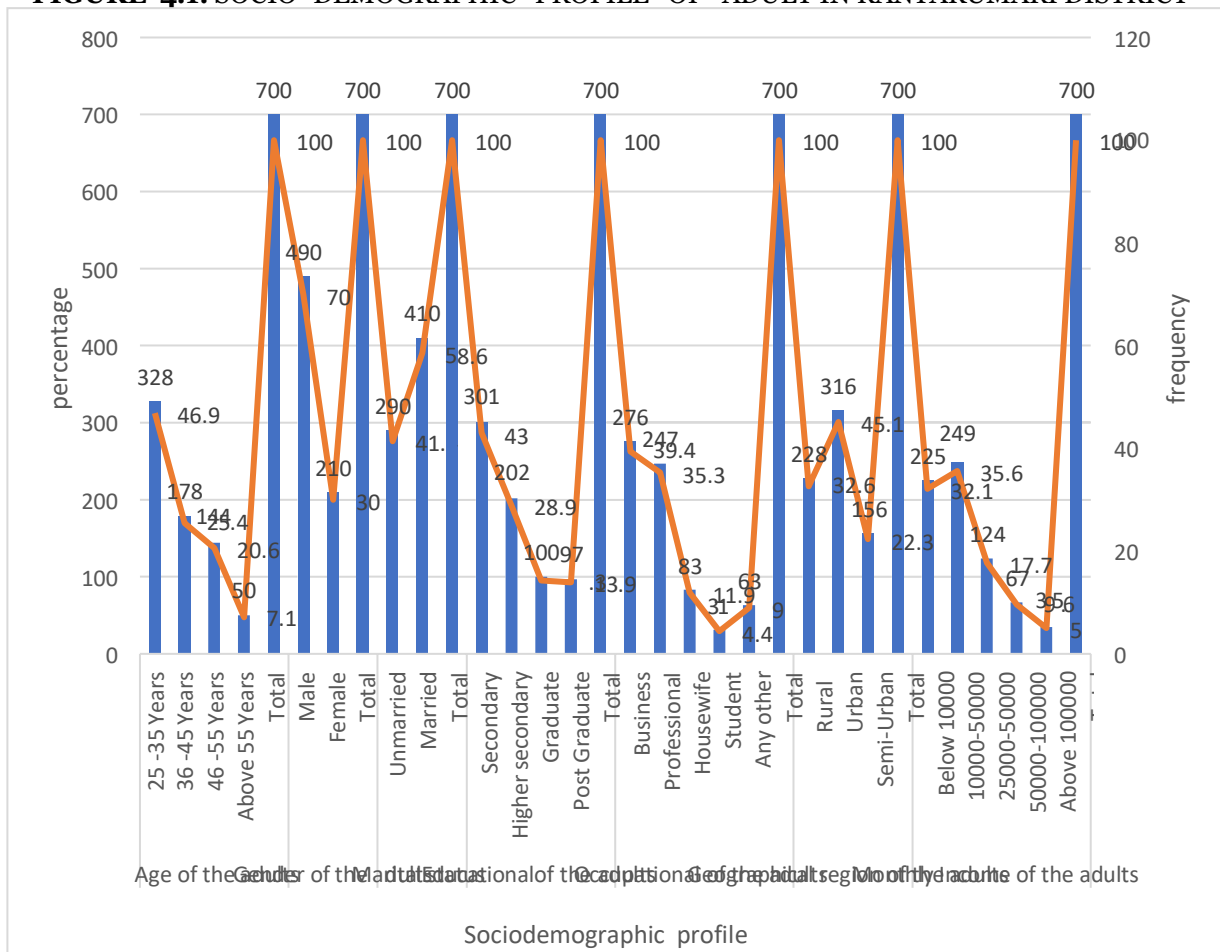
Input Layer	Factors	1	Age
		2	Gender
		3	Marital Status
		4	Education

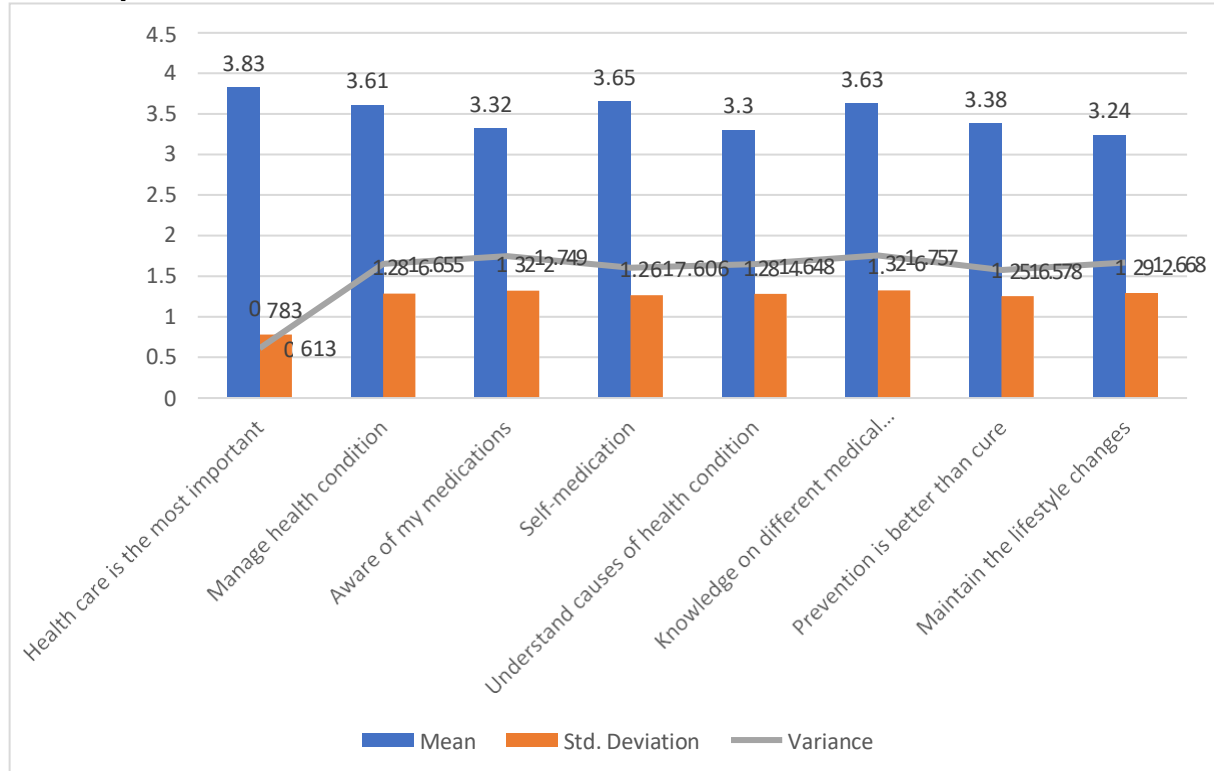
	Covariates	5	Occupation
		6	Geographical Region
		7	Monthly income
		1	Health care is the most important
		2	Manage health condition
		3	Aware of my medications
		4	Self-medication
		5	Understand causes of health condition
	6	Knowledge on different medical treatments available	
	7	Prevention is better than cure	
8	Maintain the lifestyle changes		
	Number of Units <sup>a</sup>	33	
	Rescaling Method for Covariates	Standardized	
Hidden Layer(s)	Number of Hidden Layers	1	
	Number of Units in Hidden Layer 1 <sup>a</sup>	7	
	Activation Function	Hyperbolic tangent	
Output Layer	Dependent Variables	1	Overall satisfaction with regular physical activity
	Number of Units	1	
	Rescaling Method for Scale Dependents	Standardized	
	Activation Function	Identity	
	Error Function	Sum of Squares	

a. Excluding the bias unit

**FIGURES**

**FIGURE 4.1: SOCIO- DEMOGRAPHIC PROFILE OF ADULT IN KANYAKUMARI DISTRICT**



**FIGURE 4.2.1: MEAN AND STANDARD DEVIATION FOR HEALTH PERCEPTIONS OF THE ADULTS****Conflict of interest:**

There is no conflict of interest in the particular research (including financial, non financial, human and animal involvement).