Research Article

Health Literacy In Kanyakumari District And Factors Influenzing The Effectiveness Of Health Literacy Over Physical Activity

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ARTICLE INFO	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.
	Key words: Anticipation, obesity, infirmity, physical activity, exercise

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.

1.1. HEALTH LITERACY IN INDIA

India is one of the biggest vote-based system in the world yet with the health care services at insignificant pace. Improvement in health care and its conveyance till date stays a matter of grave worry for the legislature of India. Health communication incorporates vital planning campaigns, and communication procedures through successful utilization of communication apparatuses, expected to illuminate, advocate, convince and impact individual, family and network choices that improve fitting strides towards a healthy living. Health communication can add to all parts of disease prevention and health advancement and is significant in various settings, including health proficient patient relations, people introduction to, scan for, and utilization of health data, people adherence to clinical suggestions and regimens, the development of general health messages and campaigns, the dispersal of individual and populace health hazard data, that is, chance communication, pictures of health in the broad communications and the way of life everywhere, the instruction of buyers about how to access the general health and health care systems, and the improvement of digital health applications. Health communication has been instrumental in advancing health and forestalling a few chronic diseases in a few regions. Through intuitive communication among the health care suppliers over all levels with the patients, a compelling health plan can be accomplished which is pivotal for healthy India. In this way Health education is worried about the aptitudes and capacities of people, and the demands put on them by the health system. It has gotten practically outlandish for a layman to understand the complexities of the clinical world with specialized terms, super-speciality emergency clinics, drug specialists and the medicines. A refinement has happened whereby patients are hesitant to get to this administration and progressively shows a negative demand. Health communication and proficiency campaigns can separate this indifferent feeling between a health specialist organization and the beneficiary by deliberately focusing on and creating awareness among them to include in physical exercises that upgrade the health system of the adults in the nation.

Despite the fact that healthcare experts by and large accept that the health clarifications and guidelines given to patients and families are promptly comprehended, in all actuality these directions are every now and again misconstrued, now and then bringing about genuine blunders. A typical explanation behind misunderstanding health guidelines might be the patient's low health literacy abilities. Better health literacy creates abilities of the person to acclimatize, fathom and adjust to healthy practices and lessen hazard practices. The degree of correspondence between the supplier and the patient both in the clinical setting, just as community level, can be improved by early location of patients with insufficient HL. At the community level, it is significant so as to properly plan instructive materials and community intervention programs that correspond with the literacy level of the target population.

1.2. IMPORTANCE OF THE STUDY

The health conditions prevailing in India is different. Usually the people care their children health only during childhood and after that when they become adults, they totally neglect about health aspects of their children. When children reach adolescence, they have to choose their career as professionals or non-professionals. Due to various environmental impacts and in the process of life circumstances, they forget about the concept and development of fitness or health-related activities. 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. In recent times, assessment of physical activity, with respect to health-related or performance related happens to be incomplete, if there is lack of knowledge or psychological or sociological parameters considered. This insists an in depth investigation. After passing the adolescent age the adults have to be healthy in particular. The day to day routine of the adults can be identified as going to work, sound sleep, eat food with proper nutrition, looking brisk, smart personality, development of leadership qualities, and positive approach, diseases free, etc. Regular physical activity will help them in developing competency to carry out the task with ease and comfort. There is no universally agreed upon definition of physical activity, health and of its components. In the present contest, we are particularly interested what is not referred to as health related fitness, the physical activity and health literacy impacts that affects more directly on the health status of the adults.

1.3. STATEMENT OF THE PROBLEM

The purpose of this study was to study to analyze about health literacy in Kanyakumari district and the factors influencing the same. Health literacy gives the knowledge and skills to thrive physically, mentally, emotionally and socially. This knowledge helps adults to meet the challenges of their growth and development in the environment they live. It helps them to recognize the causes of illness and to understand the benefits of nutrition, prevention, hygiene and appropriate health care. Through health literacy, adults become aware of

the dimensions related to the situation of good health, physical soundness, vigour, strength, mental alertness and ability to concentrate, expressing emotions in a healthy way, resiliency, and positive relations with family and peers that are necessary for adults to understand and practice health care.

Health education also includes a set of skills to help to be better consumers of information, to manage stress and conflict and to make better decisions in the face of conflicting messages, thus assisting them to live healthier lives. A regular physical activity is necessary to sustain fitness and health. Adults need to apply training principles - frequency, intensity, time and type to achieve personal fitness goals. Physical activity insist individual fitness and this has to be established based on the health-related components namely endurance, strength, flexibility, cardio-respiratory fitness and body composition.

1.4. RESEARCH QUESTIONS

Following research questions arise in the present research study

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 are the factors that influence the effectiveness of Physical activity?
5. What are the factors that influence the effectiveness of health literacy over physical activity?
6. What is the Impact of physical activity over the adult's health aspects?
7. What is the impact of health literacy and physical activity adopted by the adults in Kanyakumari District?

1.5. DIMENSIONS OF THE STUDY

 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.

Some of the factors influencing health literacy are age. gender, marital status of the adult, occupation of the adult, geographical region of the adult , monthly income, management of health care, aware of medication , knowledge on different medical treatment and life style.

By learning and applying these concepts, adults can develop lifelong understanding and good habits for overall health and fitness. The present study focusses on health literacy in Kanyakumari district and factors influencing the health literacy.

2. OBJECTIVES OF THE STUDY

The following are the objectives of the study

1. To know the perceived opinions towards health among adults in Kanyakumari District.
2. To identify the opinion of adults towards the Health Literacy in Kanyakumari District.
3. To evaluate the physical activities adopted by the adults in the Study area.
4. To identify the factors influencing effectiveness of Physical activity in Adults in the Study area.
5. To find out the factors that influences the effectiveness of health literacy among adults in Kanyakumari District.
6. To measure the level of satisfaction and health related consciousness among adults due to the impact of physical activity and health literacy.

3. MATERIALS AND METHODS

3.1. 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.

3.1.1. 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 isa 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 Tamilnadu 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.

3.1.2. MEASUREMENT SCALE

Nominal and Ordinal scaling has been used to find out the Socio demographic factors, health perceptions of the adults, health literacy, physical activity adopted by adults, effectiveness of physical activity adopted by adults, effectiveness of health literacy. Health conscious and satisfaction such as,

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

3.1.3. QUESTIONNAIRE

Primary and Secondary Data collection methods have been followed in the research study.Under the primary data collection method structured questionnaire has been used to collect data from the sample employees. The questionnaire consists of questions which explain about the demography of the respondents like age, marital status, educational qualification, experience, etc., and all the other questions related to the dimensions taken for the study. After pre testing with 50 adult respondents, appropriate modifications were made in the questionnaire.

3.1.4. FRAMEWORK OF ANALYSIS

In the analysis section, the questions of the questionnaire have been taken for analysis in the chronological order. Responses of every question are tabulated and then analyzed. The analysis chapter has two major sections such as percentage analysis and statistical 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. Statistical analysis consist of test hypothesis such as Krusal -Wallis test, 1 way Anova test, Neural network model etc. Reliability and validity of data is checked using Cronbach alpha value.

4. RESULT AND DISCUSSION

4.1. RELIABILITY OF DATA

The following table shows that, the Cronbach's alpha value for every dimension of the impact of physical activity and health literacy in adult population with reference to Kanyakumari district.

TABLE 4.1 Reliability and validity of the data

Dimensions	Reliability	No of items
Health Perception of the adults	.907	8
Health Literacy	.838	15
Physical activity adopted by adults	.768	14
Effectiveness of physical activity adopted by adults	.853	9
Effectiveness of health literacy	.856	16
Health conscious and satisfaction	.855	12

Source: Calculated from SPSS 20

As the Cronbach's alpha of six parameters (Health Perception of the adults, Health Literacy, Physical activity adopted by adults, Effectiveness of physical activity adopted by adults, Effectiveness of health literacy and Health conscious and satisfaction) reveal .700 and more than .700 as alpha. So, it is confirmed that the data are highly reliable and valid for analysis.

Figure 4.1: CHRONBACH'S ALPHA SIX PARAMETERS
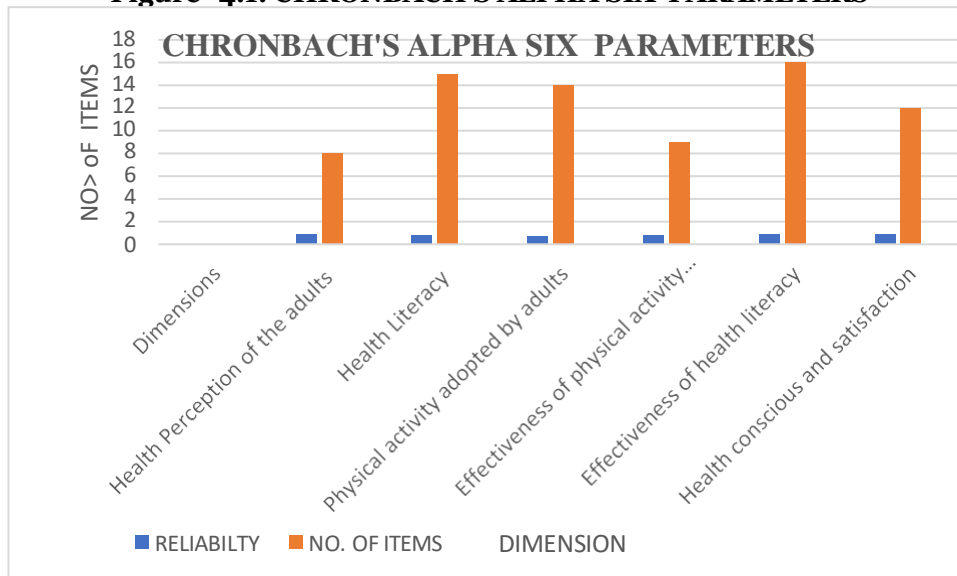
## 4.2. ANALYSIS OF SOCIO - DEMOGRAPHIC PROFILE OF THE ADULTS

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. 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.

Table - 4.2 Frequency Analysis of socio –demographic profile of the adults

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**
Educationalof 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**

Source: Output generated from SPSS 21

Figure 4.2. SOCIO DEMOGRAPHIC PROFILE
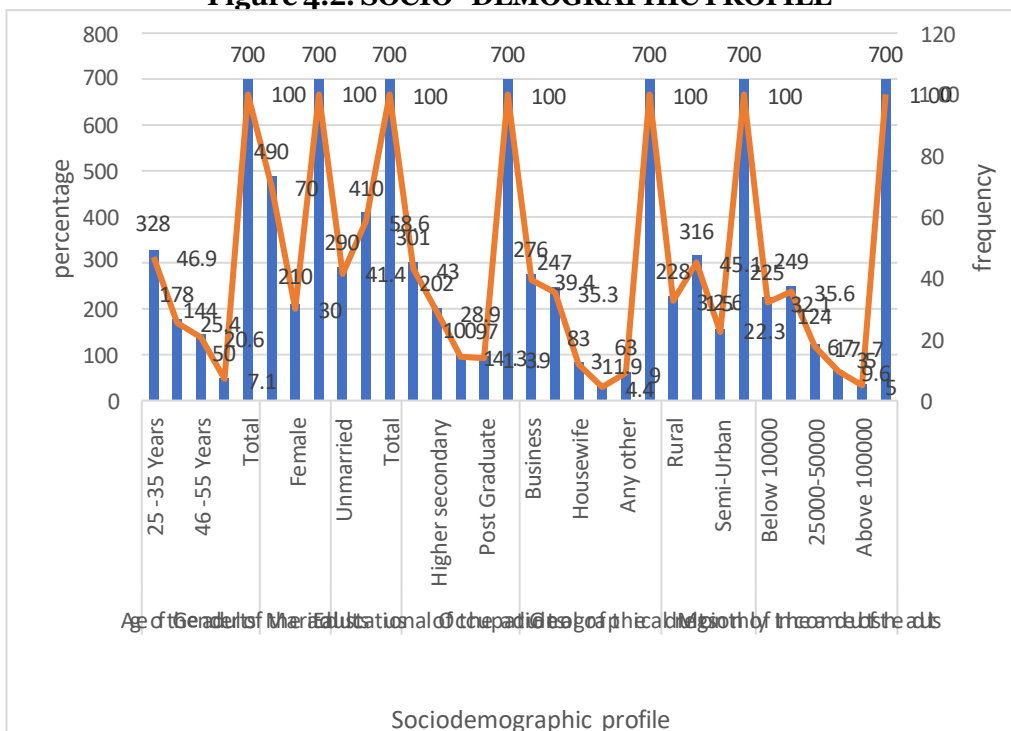
The socio demographic values of 700 selected respondents of the study is exhibited in the table 4.2 and it infers that 46.9% of the respondents selected for the research survey are mostly under the age group of 25 - 35 in majority and the next majority is from the age group 36 - 45 that accounts to 25.4% . 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.

4.3 MEAN AND STANDARD DEVIATION ON HEALTH PERCEPTIONS OF THE ADULTS

Table – 4.3   Mean and standard deviation for health perceptions of the adults

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

Source: Output generated from SPSS 21

Figure 4.3 Mean and standard deviation for health perceptions of the adults

MEAN AND STANDARD DEVIATION ON HEALTH PERCEPTION OF ADULTS
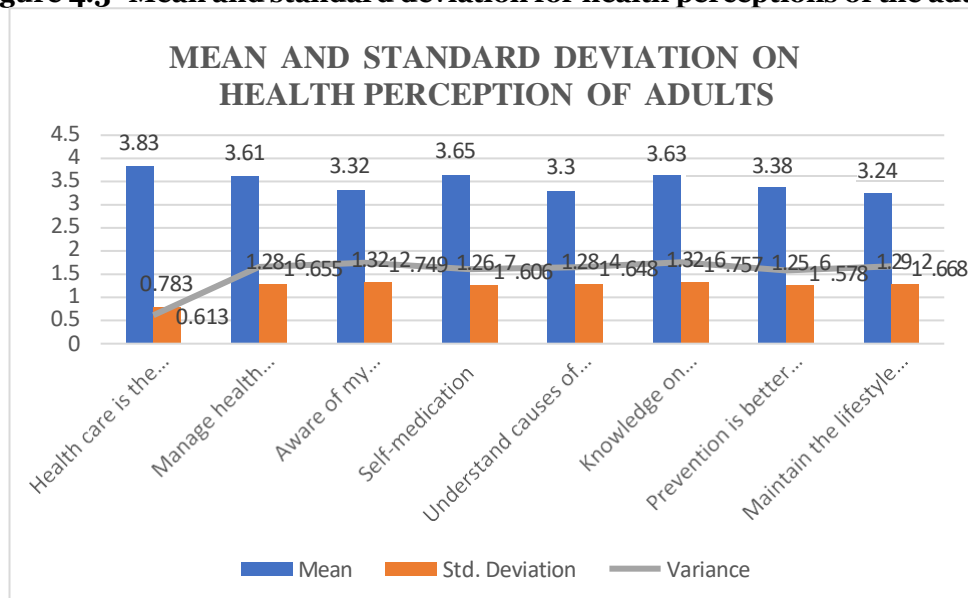
The empirical calculations obtained from the above table infers that, the mean score identified for all the variables of health perceptions of the adults considered for the study such as 'Health care is the most important, Manage health condition, Aware of my medications, Self-medication, Understand 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.

4.4 KRUSAL-WALLIS 1-WAY ANOVA TEST FOR HEALTH PERCEPTIONS OF THE ADULTS
Hypothesis
Null hypothesis H_0−The distribution of health perceptions of the adultsis same across the categories of the socio-demographic profile of the adults.

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

Table – 4.4 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

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 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 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 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 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.

4.5. KENDALL'S W TEST FOR SIGNIFICANT DIFFERENCE BETWEEN MEAN RANKS OF HEALTH PERCEPTIONS OF THE ADULTS

Null Hypothesis: There is no significant difference between mean ranks of the health perceptions of the adults.
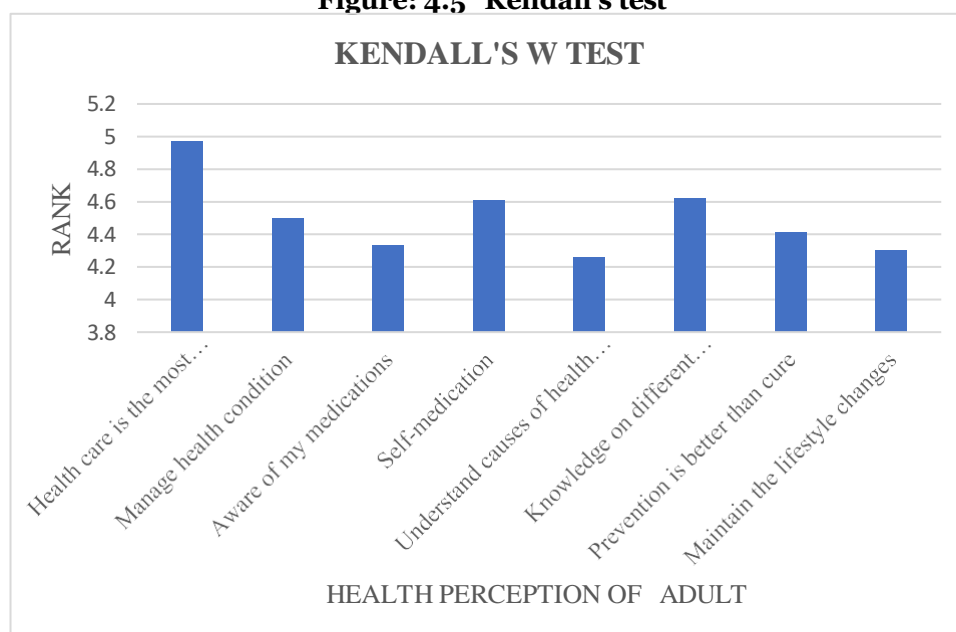
Alternative Hypothesis: There is a significant difference between mean ranks of the health perceptions of the adults.

Table – 4.5 Kendall's w test for significant difference between mean ranks of the health perceptions of the adults

Health perceptions of the adults	Mean Rank	Chi-Square value	Degrees of freedom	Asymp. Significant
Health care is the most important	4.97			
Manage health condition	4.50			
Aware of my medications	4.33			
Self-medication	4.61	104.757	7	.000
Understand causes of health condition	4.26			
Knowledge on different medical treatments available	4.62			
Prevention is better than cure	4.41			
Maintain the lifestyle changes	4.30			

Source: Output generated from SPSS 21

Figure: 4.5 Kendall's test

From the above table, it is found out that all the variables related to the health perceptions of the adults had significance value less than 0.05 at 1 Per cent level of significance, thus the null hypothesis is rejected. Thus, it is concluded that there is significant difference between mean ranks towards the health perceptions of the adults. Out of the eight the health perceptions of the adults variables; the "Health care is the most important" has the highest rank (4.97). So, that the health perceptions of the adults is influenced by "Health care is the most important" Variable. The analysis ascertains the fact that almost all the variables under the health perceptionof the adults considered for the study are important and the most influencing factor is identified as 'Health care is the most important' of the respondents. The opinion towards Healthis perceived more significant through the factor that the respondents are particular about their health and are aware that health care is important. Hence among all other attributes under health perceptions of the adults, the above said statement is statistically significant and thus identified as the most influencing variable.

4.6. ANALYSIS OF OVERALL SATISFACTION WITH REGULAR PHYSICAL ACTIVITYON HEALTH PERCEPTIONS OF THE ADULTSBY 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.

Figure – 4.6.1   Basic Neuron Model for overall satisfaction with regular physical activity on health perceptions of the adults
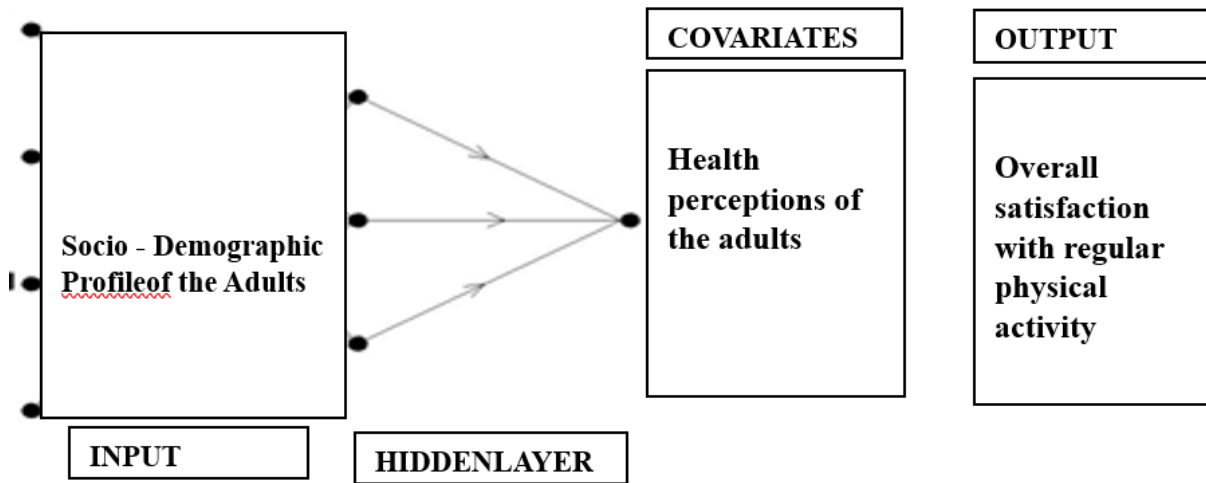
The neural network model stems from the studies on the working of human brain systems, and serves as an associative memory between the input and output patterns. These models contain many densely interconnected elements called Neurons or Nodes. The neuron has a set of "n" inputs "x"j, where the subscript "j" takes a value from 1 to "n" and indicates the source of the input signal. Each input "x"j is weighted before reaching the main body of the processing elements, by the connection strength or weight factor "wj". (Multiplied by"wj"). In addition, it has a bias term "w"0, 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.

Table - 4.6.1 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[a]
	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.		

Source: Output generated from SPSS 21

Table –4.6.2 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
		5	Occupation
		6	Geographical Region
		7	Monthly income
	Covariates	1	Health care is the most important
		2	Manage health condition
		3	Aware of my medications

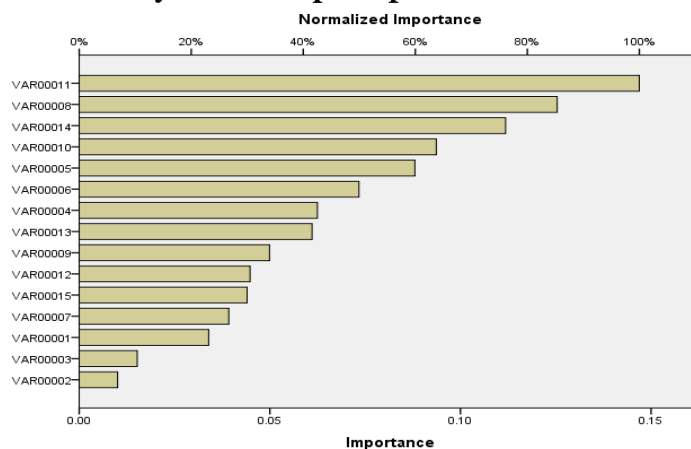|		4	Self-medication
		5	Understand causes of health condition
		6	Knowledge on different medical treatments available
		7	Prevention is better than cure
		8	Maintain the lifestyle changes
	Number of Units[a]	33	
	Rescaling Method for Covariates	Standardized	
Hidden Layer(s)	Number of Hidden Layers	1	
	Number of Units in Hidden Layer 1[a]	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			

Source: Output generated form SPSS 21.

The factors of the health perceptions of the adults on health perceptions of the adult's model 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.

Table – 4.6.3 Independent Variable importance for Neural Network Model for the overall satisfaction with regular physical activity on health perceptions of the adults

Independent Variable Importance	Importance	Normalized Importance
Age	.034	23.1%
Gender	.010	6.9%
Marital Status	.015	10.3%
Education	.062	42.5%
Occupation	.088	59.9%
Geographical Region	.073	49.9%
Monthly income	.039	26.7%
Health care is the most important	.125	85.3%
Manage health condition	.050	34.0%
Aware of my medications	.094	63.8%
Self-medication	.147	100.0%
Understand causes of health condition	.045	30.5%
Knowledge on different medical treatments available	.061	41.6%
Prevention is better than cure	.112	76.1%
Maintain the lifestyle changes	.044	30.0%

Source: Output generated form SPSS 21.

Figure – 4.6.2 Normalized importance for the overall satisfaction with regular physical activity on health perceptions of the adults

The table and diagram shows the health perceptions of the adults in respect of "Self-medication" is contribute more towards the output of overall satisfaction with regular physical activity. The outcome of neural network analysis infers the complex nonlinear relationships between dependent and independent variables under the regular physical activity with respect to health perceptions of the adults considered for the study are important and the most influencing factor is identified as 'Self-medication' of the respondents. The respondents' opinion towards health is perceived more significant through the factor that the adult respondents are aware that

preliminary self-medication helps maintain the health conditions. Hence among all other attributes under regular physical activity with respect to health perceptions of the adults, the above said statement is statistically significant and thus identified as the most influencing variable.

4.7 Findings related to socio - demographic profile of the adults

- 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.

4.8 Findings related to health perceptions of the adults

- 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.
- 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 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 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 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 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 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 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.
- There is significant difference between mean ranks towards the health perceptions of the adults. Out of the eight the health perceptions of the adult's variables; the "Health care is the most important" has the highest rank (4.97). So, that the health perceptions of the adults is influenced by "Health care is the most important" Variable. The analysis ascertains the fact that almost all the variables under the health perception of the adults considered for the study are important and the most influencing factor is identified as 'Health care is the most important' of the respondents.
- The dimension "the health perceptions of the adults" comprises 8 statements. Out of eight statements, two statements contribute more towards the health perceptions of the adults. The statements are 1. Manage health

condition, and 2.Understand causes of health condition. Almost all the attributes under the health perceptions of the adults considered for the study are important and the most influencing factor is identified as 'Manage health condition and Understand causes of health condition' of the respondents. The respondents' opinion towards health is perceived more significant through the factor that the adult respondents are familiar with their health conditions and know to maintain it. Hence among all other attributes under health perceptions of the adults, the above said statement is statistically significant and thus identified as the most influencing variable.

4.9. Findings related to health literacy

- All the variables of health perceptions of the adults considered for the study such as' Get more information about health, Needful health information source, Brochures on prescribed medicine, Access information about the physical activity, Access information about the healthy diet, Access information about mental health, Health Information on the Internet, Read brochures about nutritional issues, Read articles about disease prevention, Read health information magazines, Understand information about medications, Understand the nutrition facts of food, Health information from the media, Risks and warnings provided by the media about alcohol and tobacco and Gain knowledge about health and illness through medias' 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 'Get more information about health, Needful health information source, Brochures on prescribed medicine, Access information about the physical activity, Access information about the healthy diet, Access information about mental health, Health Information on the Internet, Read brochures about nutritional issues, Read articles about disease prevention, Read health information magazines, Understand information about medications, Understand the nutrition facts of food, Health information from the media, Risks and warnings provided by the media about alcohol and tobacco and Gain knowledge about health and illness through medias' 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.
- The distribution of health literacy 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 literacy of the adults considered, had no implications on the age of the adults.
- The distribution of health literacy 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 literacy of the adults considered, had no implications on the gender of the adults.
- The distribution of health literacy 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 literacy of the adults considered, had no implications on the marital status of the adults.
- The distribution of health literacy are same across the categories of the education of the adults(Expect Brochures on prescribed medicine, Access information about the healthy diet). The evaluated results and its inference derived from the table conclude the fact that the variables "Brochures on prescribed medicine (.035<.05)" and Access information about the healthy diet (.035<.05)"related to health literacy of the adults considered, had implications on the education of the adults. The opinion statement of the adults regarding their health perception does not vary with any difference based on their education.
- The distribution of health literacy are same across the categories of the occupational of the adults(Expect Access information about mental health, Health Information on the Internet). The evaluated results and its inference derived from the table conclude the fact that the variables "Access information about mental health (.042<.05)" and Health Information on the Internet (.043<.05)"related to health literacy of the adults considered, had implications on the occupation of the adults.
- The distribution of health literacy are same across the categories of the geographical region of the adults (Expect Access information about the healthy diet). The evaluated results and its inference derived from the table conclude the fact that the variables "Access information about the healthy diet (.030<.05)" related to health literacy of the adults considered, had implications on the geographical region of the adults.
- The distribution of health literacy are same across the categories of the monthly income of the adults (Expect Access information about the physical activity). The evaluated results and its inference derived from the table conclude the fact that the variables "Access information about the physical activity (.042<.05)" related to health literacy of the adults considered, had implications on the monthly income of the adults.
- There is significant difference between mean ranks towards the health literacy. Out of the fifteen the health literacy variables; the "Read articles about disease prevention" has the highest rank (8.64). So, that the health literacy is influenced by "Read articles about disease prevention" Variable. The analysis ascertains the fact that almost all the variables under the health literacy of the adults considered for the study are important and the most influencing factor is identified as 'Read articles about disease prevention' of the respondents.
- The dimension "the health literacy" comprises 15 statements. Out of fifteen statements, four statements contribute more towards the health literacy. The statements are 1. Understand the nutrition facts of food, 2. Brochures on prescribed medicine, 3. Gain knowledge about health and illness through Medias, and 4. Health Information on the Internet. The Factor analysis performed determines the empirical conclusion as almost all the attributes under the health literacy of the adults considered for the study are important and the most

influencing factor is identified as 'Understand the nutrition facts of food, Brochures on prescribed medicine, Gain knowledge about health and illness through Medias and Health Information on the Internet' of the respondents.

5. CONCLUSION

This chapter accomplishes the segregation of juxtaposed data into meaningful information by identifying the relationship between the variables as denoted in the hypothetical statements considered. The analysis is performed by diligently applying suitable statistical tools and the results are obtained for extracting findings and suitable suggestions.

6. SCOPE FOR FURTHER RESEARCH

Health literacy is an important factor that impacts the determination of effective physical activity performance of the adults. The study alarms the fact that both health literacy and regular physical activity influence the health consciousness and satisfaction of the adults. Taking this variable as the major constrain future study on health literacy among the school and college students can be assessed. It is found that a large range of unfavourable health behaviours are likely to be more among the elder adults with low health literacy. The factors for the cause of low health literacy such as loneliness, lacking in social activities and having few social contacts has to be analysed as dimensions has to identify still many reasons for the low health literacy and low physical activity for further study. A comparative study on the physical activity among young adults and older adults will be appreciated. The research can be further extended to employees in various industries and based on their job and industry in which they work will also have impacts on physical activity, health literacy and health outcomes. Thus there is a scope for further research in this area and this study contributes to the literature on physical activity and health literacy providing a clear understanding among the individuals. Future studies should further assess pathways between health literacy, health behaviours, and social factors.