



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203





Human Journals

Research Article

May 2024 Vol.:30, Issue:5

© All rights are reserved by Vishnupriya S et al.

Assessment and Comparison of Lifestyle and Its Impact over Health among the General Public

			
Vishnupriya S, Preethi Nivedhaa A			
<i>PSG College of Pharmacy, Peelamedu, Coimbatore, Tamil Nadu, India.</i>			
Submitted:	22 April 2024		
Accepted:	28 April 2024		
Published:	30 May 2024		

Keywords: public health, diabetes, lifestyle.

ABSTRACT

The study highlights the crucial link between lifestyle and health outcomes. Unhealthy habits, such as poor diet, lack of exercise, smoking, substance abuse, and technology overuse, contribute to various health issues like cardiovascular diseases, hypertension, diabetes, and obesity. Conversely, adopting healthy behaviors, including nutritious diet, regular exercise, abstaining from smoking, moderate alcohol consumption, and balanced technology use, significantly enhances longevity and reduces the risk of premature death from cancer or heart diseases. Public health efforts and policy changes are recommended to promote healthy lifestyles and combat the adverse effects of unhealthy practices. Additionally, lifestyle-induced diseases like hypertension, diabetes mellitus, and cardiovascular diseases underscore the urgent need for preventive measures and lifestyle modifications to mitigate their global impact. **OBJECTIVE:** The aim of the study is to assess public awareness of lifestyle and its influence on health. The objectives include evaluating public knowledge of lifestyle, comparing the impact of lifestyle on health, and understanding perceptions about lifestyle modifications and disease burdens. **RESULTS AND CONCLUSIONS:** In this study involving 136 participants from the general public, two groups were formed based on their awareness of lifestyle and its impact on health. Group 2, comprising individuals aware of lifestyle, showed lower disease burden compared to Group 1, who were unaware. The study underscores the significant role of lifestyle in health outcomes, emphasizing the importance of lifestyle modifications alongside medication adherence in disease prevention and management.



ijppr.humanjournals.com

1. INTRODUCTION:

Life-style is referred to the characteristics of inhabitants of a region in a special time and place. It includes day to day behaviors and functions of individuals in job, activities, fun and diet. In recent decades, lifestyle as an important factor of health is more interesting to researchers. According to WHO, 60% of related factors to individual health and quality of life are correlated to lifestyle (1). Millions of people follow an unhealthy lifestyle. Hence, they encounter illness, disability and even death. Problems like metabolic diseases, joint and skeletal problems, cardiovascular diseases, hypertension, overweight, violence and so on, can be caused by an unhealthy lifestyle. The relationship of lifestyle and health should be highly considered. Today, wide changes have occurred in life of all people. Malnutrition, unhealthy diet, smoking, alcohol consumption, drug abuse, stress and so on, are the presentations of unhealthy lifestyles that are used as the dominant form of lifestyle. Besides, the lives of citizens face with new challenges. For instance, emerging new technologies within IT such as the internet and virtual communication networks, lead our world to a major challenge that threatens the physical and mental health of individuals. The challenge is the overuse and misuse of the technology. Therefore, according to the existing studies, it can be said that: lifestyle has a significant influence on physical and mental health of human being.

In some countries, the overuse of drugs is a major unhealthy lifestyle.

Iran is one of the 20 countries using the most medications. They prefer medication to other intervention. Furthermore, in 15-40% of cases they use medications without prescription. Pain relievers, eye drops and antibiotics have the most usage in Iran. While self-medications such as antibiotics have a negative effect on the immune system, if the individual would be affected by infection, antibiotics will not be effective in treatment. Overall, 10 percent of those who are self-medicated will experience severe complications such as drug resistance. Sometimes drug allergy is so severe that it can cause death.

Finally, variables of lifestyle that influence on health can be categorized in some items:

Diet and Body Mass Index (BMI): Diet is the greatest factor in lifestyle and has a direct and positive relation with health. Poor diet and its consequences like obesity is the common healthy problem in urban societies. Unhealthy lifestyle can be measured by BMI. Urban lifestyle leads to nutrition problems like using fast foods and poor foods, increasing problems like cardiovascular (5).

Exercise: For treating general health problems, the exercise is included in lifestyle (6). The continuous exercise along with a healthy diet increases the health. Some studies stress on the relation of active lifestyle with happiness (7, 8).

Sleep: One of the bases of healthy life is sleep. Sleep cannot be apart from life. Sleep disorders have several social, psychological, economical and healthy consequences. Lifestyle may affect sleep and sleep has a clear influence on mental and physical health (9). Inadequate amounts of sleep, or not sleeping well, can also have remarkable effects on a person's health. Infact, sleeping can affect your health just as much as your diet. Scientific studies have shown that insufficient sleep increases the risk for heart disease, Type 2 diabetes, obesity, and depression. Abnormal breathing during sleep, a condition called sleep apnea, is also linked to an increased risk for chronic disease (13).

Sexual behavior: Normal sex relation is necessary in healthy life. Dysfunction of sex relation is the problem of most societies and it has a significant effect on mental and physical health. It can be said that dysfunctional sex relations may result in various family problems or sex related illnesses like; AIDS.

Substance abuse: Addiction is an unhealthy lifestyle. Smoking and using other substance may result in various problems; cardiovascular disease, asthma, cancer, brain injury. According to the recent studies in Iran, 43% of females and 64% of males experience the use of hubble-bubble (10). A longitudinal study shows that 30% of people between 18-65 years old smoke cigarette permanently (11).

Recreational drug use, which includes tobacco-smoking, electronic smoking device use, marijuana and alcohol consumption along with narcotic and other illegal drug use, has a large impact on health. Smoking cigarettes can cause lung cancer, eleven other types of cancer, heart disease, and several other disorders or diseases that markedly decrease quality of life and increase mortality. In the United States, smoking causes more than four hundred thousand deaths every single year, which is far more than deaths associated with any other lifestyle component (14).

Medication abuse: It is a common form of using medication in Iran and it is considered as an unhealthy lifestyle. Unhealthy behaviors in using medication are as followed: self-treatment, sharing medication, using medications without prescription, prescribing too many drugs, prescribing the large number of each drug, unnecessary drugs, bad handwriting in

prescription, disregard to the contradictory drugs, disregard to harmful effects of drugs, not explaining the effects of drugs.

Application of modern technologies: Advanced technology facilitates the life of human beings. Misuse of technology may result in unpleasant consequences. For example, using of computer and other devices up to midnight, may affect the pattern of sleep and it may disturb sleep. Addiction to using mobile phones is related to depression symptoms (12).

Recreation: Leisure pass time is a sub factor of lifestyle. Neglecting leisure can bring negative consequences. With disorganized planning and unhealthy leisure, people endanger their health.

Study: Study is the exercise of the soul. Placing study as a factor in lifestyle may lead to more physical and mental health. For example, the prevalence of dementia, such as Alzheimer's disease is lowering educated people. Study could slow the process of dementia.

What is a healthy lifestyle, exactly?

These five areas were chosen because prior studies have shown them to have a large impact on risk of premature death. Here are how these healthy habits were defined and measured:

- Healthy diet, which was calculated and rated based on the reported intake of healthy foods like vegetables, fruits, nuts, whole grains, healthy fats, and omega-3 fatty acids, and unhealthy foods like red and processed meats, sugar-sweetened beverages, trans-fat, and sodium.
- Healthy physical activity level, which was measured as at least 30 minutes per day of moderate to vigorous activity daily.
- Healthy body weight, defined as a normal body mass index (BMI), which is between 18.5 and 24.9’.
- Smoking, well, there is no healthy amount of smoking. “Healthy” here meant never having smoked.
- Moderate alcohol intake, which was measured as between 5 and 15 grams per day for women, and 5 to 30 grams per day for men. Generally, one drink contains about 14 grams of pure alcohol. That’s 12 ounces of regular beer, 5 ounces of wine, or 1.5 ounces of distilled spirits (15).

Researchers also looked at data on age, ethnicity, and medication use, as well as comparison data from the National Health and Nutrition Examination Surveys and the Centers for Disease Control and Prevention's Wide Ranging Online Data for Epidemiologic Research.

Does a healthy lifestyle make a difference?

As it turns out, healthy habits make a big difference. According to this analysis, people who met criteria for all five habits enjoyed significantly, impressively longer lives than those who had none: 14 years for women and 12 years for men (if they had these habits at age 50). People who had none of these habits were far more likely to die prematurely from cancer or cardiovascular disease.

Experts have suggested that the best way to help people make a healthy diet and lifestyle change is at the large-scale, population level, through public health efforts and policy changes.

There's a lot of pushback from big industry on that, of course. If we have guidelines and laws helping us to live healthier, big companies aren't going to sell as much fast food, chips, and soda. And for companies hell-bent on making money at the cost of human life.

Good nutrition, physical activity and a healthy lifestyle are essential for good health. A well-established body of research links poor diet and inactivity to a wide range of preventable diseases and premature death. The U.S. Centers for Disease Control (CDC) tracks data about the leading causes of death and disease and provides a wide range of resources for health professionals and the public to support healthier lifestyles (15).

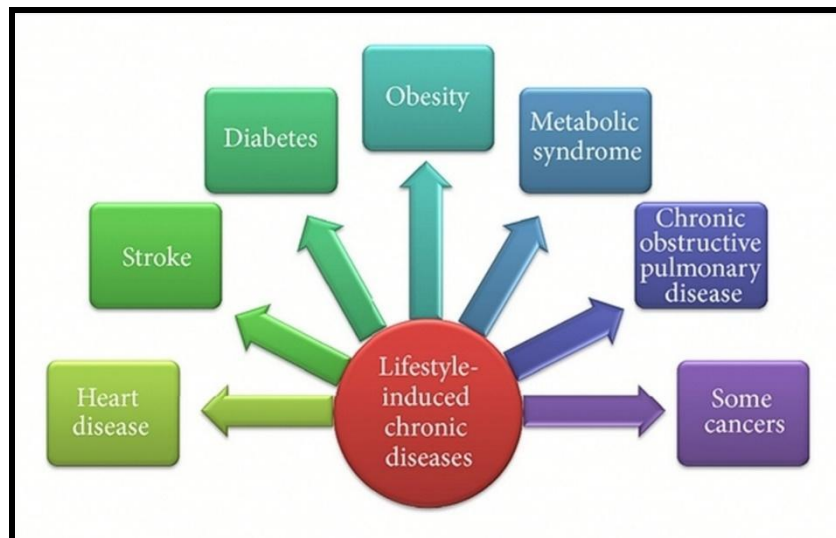


Figure.01. Lifestyle Induced Diseases

There are some major diseases which may occur due to the improper lifestyle practices. Few are discussed below:

❖ **Hypertension:**

Also known as high blood pressure is, by definition, a repeatedly elevated blood pressure exceeding 140 over 90 mmHg- a systolic pressure above 140 or a diastolic pressure above 90. Chronic hypertension is a "silent" condition that does not have symptoms.

Symptoms and Signs of Hypertension

- Severe headaches
- Fatigue
- Vision problems
- Chest pain
- Difficulty breathing
- Irregular heartbeat
- Blood in the urine
- Pounding in the chest, neck, or ears

Epidemiology

Hypertension is an epidemic affecting one billion people and is the commonest risk factor for death throughout the world. World health statistics 2012 has estimated the prevalence of hypertension to be 29.2% in males and 24.8% in females. Approximately 90 percent for men and women who are non-hypertensive at 55 or 65 years will develop hypertension by the age of 80–85. Hypertension is not limited to rich population and affects countries across all income groups. Out of total 58.8 million deaths worldwide in year 2004, high blood pressure was responsible for 12.8% (7.5 million deaths). World over hypertension is responsible for 51% of cerebrovascular disease and 45% of ischemic heart disease deaths.

❖ **Diabetes mellitus:** More commonly referred to as "diabetes"- a chronic disease associated with abnormally high levels of the sugar glucose in the blood. Diabetes is due to one of two mechanisms:

1. Inadequate production of insulin (which is made by the pancreas and lowers blood glucose), or
2. Inadequate sensitivity of cells to the action of insulin.

Symptoms and Signs

General symptoms

- increased hunger
- increased thirst
- weight loss
- frequent urination
- blurry vision
- extreme fatigue
- sores that don't heal

Symptoms in men

In addition to the general symptoms of diabetes, men with diabetes may have a decreased sex drive, erectile dysfunction (ED), and poor muscle strength.

Symptoms in women

Women with diabetes can also have symptoms such as urinary tract infections, yeast infections, and dry, itchy skin.

Epidemiology

As per the statistics in 2017, an estimated 8.8 % of the global adult population were living with diabetes. The prevalence of diabetes has nearly doubled since 1980, rising from 4.7% to 8.8% in the global adult population. This reflects an increase in associated risk factors such as overweight or obese. Over the past decade, diabetes prevalence has risen faster in developing countries than in developed countries. Type 2 diabetes mellitus occurs throughout the world, but is more common in the more developed countries. The disease burden related to diabetes is high and rises in every country. The premature morbidity, mortality, reduced life expectancy and financial and other costs of diabetes make it an important public health condition.

❖ Cardiovascular disease

Cardiovascular disease (CVD) is a general term used to describe conditions that can affect the heart (cardio) and/or the body's system of blood vessels (vascular).

Most cardiovascular diseases are chronic conditions that develop or persist over a long period of time. However, some of the outcomes of cardiovascular disease may be acute events such as heart attacks and strokes that occur suddenly when a vessel supplying blood to the heart or brain becomes blocked.

Signs and symptoms

- Chest pain, chest tightness, chest pressure and chest discomfort (angina)
- Shortness of breath

- Pain, numbness, weakness or coldness in your legs or arms if the blood vessels in those parts of your body are narrowed.
- Pain in the neck, jaw, throat, upper abdomen or back.

Epidemiology

The global rise in CVD is the result of an unprecedented transformation in the causes of morbidity and mortality during the twentieth century. Known as the epidemiologic transition, this shift is driven by industrialization, urbanization, and associated lifestyle changes and is taking place in every part of the world among all races, ethnic groups, and cultures. The transition is divided into four basic stages: pestilence and famine, receding pandemics, degenerative and man-made diseases, and delayed degenerative diseases. A fifth stage, characterized by an epidemic of inactivity and obesity, is emerging in some countries.

Infant and childhood mortality also decline, but deaths due to CVD increase to between 10 and 35% of all deaths. Rheumatic valvular disease, hypertension, coronary heart disease (CHD), and stroke are the predominant forms of CVD. Almost 40% of the world's population is currently in this stage.

The impact of lifestyle and its role in disease burden is discussed in this study.

2. AIM AND OBJECTIVES

AIM:

- To assess the awareness among the public regarding the lifestyle and its impact over health.

OBJECTIVES:

- To find out the knowledge of lifestyle among the public.
- To assess and compare the impact of lifestyle over health.
- To get an ideology about lifestyle modifications and disease burdens.

3. PLAN OF STUDY

The study was planned with three different stages:

PHASE I:

- Selection of title
- Literature review
- Designing the protocol and Questionnaire form.

PHASE II:

- Selection of study subjects based on inclusion and exclusion criteria
- Collection of data from the subjects
- Categorization of subjects based on the response
- Review of the data of the subjects.

PHASE III:

- Statistical analysis of data
- Results, discussion and conclusion.

4. METHODOLOGY

MATERIALS AND METHODS

STUDY DESIGN:

This is a Prospective, Observational study.

DURATION OF THE STUDY:

The study was conducted for a period of six months.

FIELD OF STUDY:

The study was conducted as survey-based study in general population.

STUDY POPULATION:

A total of 136 patients were included in the study.

INCLUSION CRITERIA:

- The patients with age 18 or above
- The patient who are willing to give data
- The patient with comorbidities (Hypertension, Diabetes Mellitus, CVD, Thyroid disorders etc.)

EXCLUSION CRITERIA:

- Patients who are not willing to participate in the study
- Patient's data with unclear and incomplete response
- People with Psychiatric illnesses and bed-ridden patients
- Highly illiterate people

DATA COLLECTION

Patient data relevant to the study were obtained by using the following source and recorded.

- Questionnaires

DESCRIPTION OF METHODOLOGY:

Questionnaire was prepared and had been corrected by the academic guide. Permission was obtained from the head of the institution. Query form was also prepared in English. Final data collection excel sheet was then prepared.

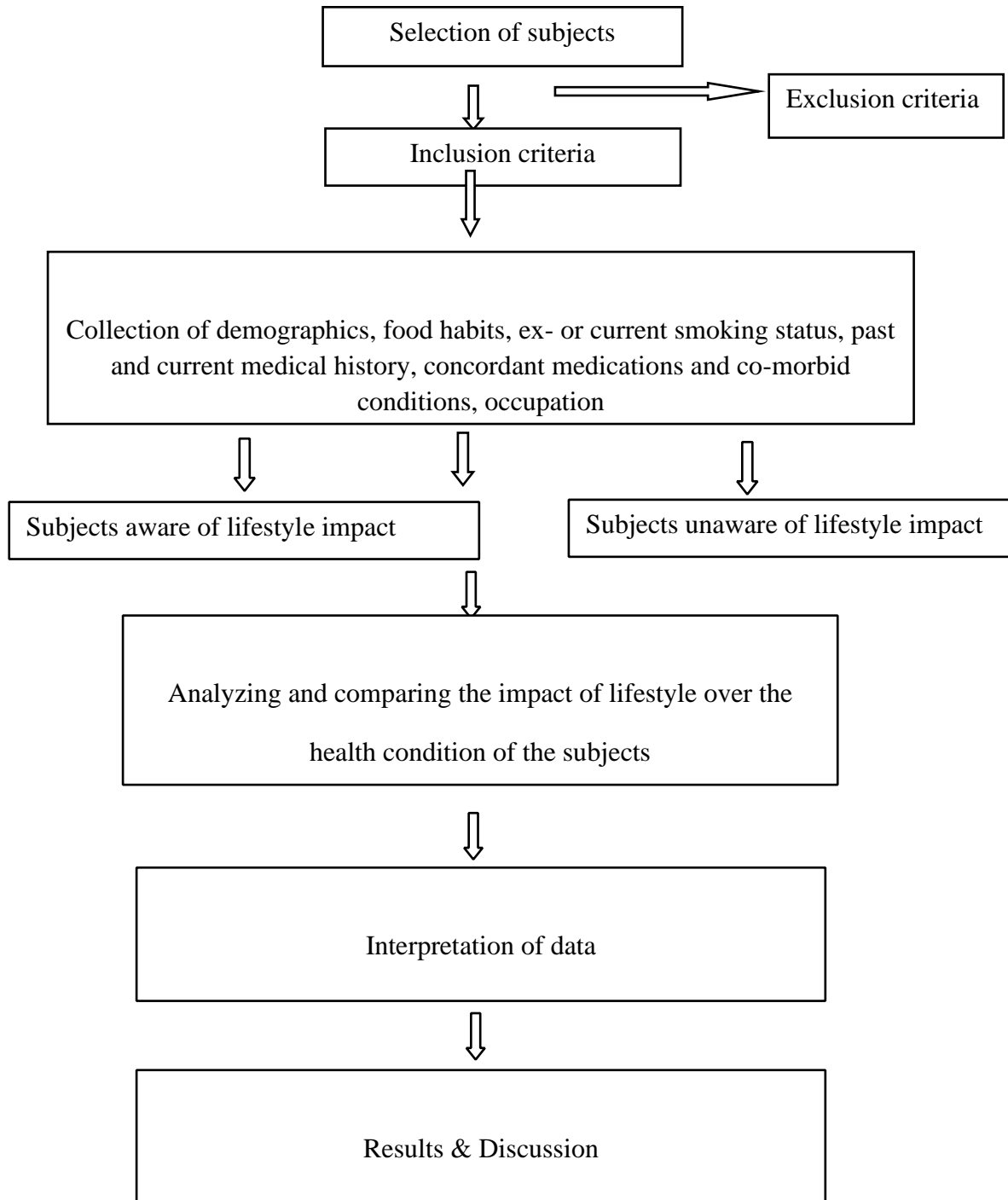
A prospective observational study was done for a duration of 6 months for assessment of knowledge about lifestyle factors and their ruling over health. The study was conducted in 136 patients. Willingness of the patients was checked before starting the study.

Willingness of the patients were checked. If they were willing to take part in study, then the study was explained. The information like name, age, sex, smoking history, medical history, family history, BMI, food habits, information about physical exercises, occupation were collected through questionnaires and excel sheet was interpreted for

the data.

STATISTICAL TOOL

Independent t-Test is used to compare the lifestyle impact between groups.



5. DISCUSSION:

In our study the subjects were divided into two groups Group 1 & Group 2. Group 1 contains 67 subjects while Group 2 contains 69 subjects.

Gender based classification for both groups of subjects are discussed in Table 1 and 2 respectively. A total number of 136 patients have participated in the study as per the inclusion criteria. Among those 136 people, 67 were aware of lifestyle impact (Group 1) and 69 were unaware of lifestyle impact (Group 2). In both the groups female subjects were prominent.

Age based classification for both groups of subjects are discussed in Table 3 and 4 respectively. 136 general population were involved in the study and their lifestyle data were collected via questionnaire. From the obtained data, patients were categorized into two groups i.e. Group 1 and 2. Among 67 subjects of Group 1 06(09%) subjects were in the age group between 18-20 years, 14(21%) subjects were in the age group between 21-30 years, 43(64%) subjects were in the age group between 31-45 years and 04(06%) subjects were in age group between 46-60 years. Among 69 subjects of Group 1 05(07%) subjects were in the age group between 18-20 years, 12(17%) subjects were in the age group between 21-30 years, 47(69%) subjects were in the age group between 31-45 years and 05(07%) subjects were in age group between 46-60 years. In both the group 31-45 years subjects were more prominent. **Willa Fabia et al., (2012)** conducted study on "Lifestyle management system" patient monitoring system in cooperation with IMDs provides information, direction and counseling to patients. Specifically, a combination of lifestyle parameters, such as, for example, diet, exercise, weight, medication and environmental factors such as, for example, temperature, UV factor, pollen count, humidity, air pollution index, are integrated to provide a seamless, comprehensive, chronic monitoring system and support for patients (22).

BMI based classification for both group of subjects are discussed in Table 5 and 6 respectively. Subjects are categorized based on their BMI. Among the 67 subjects enrolled, 19 subjects were normal weighed (18.5-24.5), 28 were overweighed (25.0-29.9) and 20 were obese (30.0-34.9) subjects. Subjects are categorized based on their BMI. Among the 69 subjects enrolled, 35 subjects were normal weighed (18.5-24.5), 27 were overweighed (25.0-29.9) and 07 were obese (30.0-34.9) subjects. In both the group subjects with BMI range between 25.0-29.9 were more prominent. Comparatively Group 1 population is having more subjects with higher BMI. **Krishna Mc et al., (2003)** conducted study on "Burning Calories With Everyday Activities" If the thought of working up a sweat on the treadmill at the gym to

burn calories doesn't appeal to you, you'll be happy to know that you can burn plenty of calories just by doing everyday activities. Research shows that people who are physically active during the day can burn an extra 300 calories per day, over 12 days, that can add up to an extra pound of weight loss (24).

Classification based on employment status of both the group is depicted in Table 7. Subjects are categorized based on their employment status. Among the 67 subjects of Group 1, 34(51%) subjects were employed and 33(49%) were unemployed, among the 69 subjects of Group 2, 40(58%) were employed and 29(42%) were unemployed. Employed subjects were prominent in both the groups. Comparatively Group 2 has higher employment status.

Classification based on the sedentary lifestyle of both the groups is depicted in Table 8. Subjects are categorized based on their Sedentary Lifestyle. Among the 67 subjects of Group 1, 39(58%) were on a sedentary lifestyle, among the 69 subjects of Group 2, 27(39%) were on a sedentary lifestyle. Comparatively Group 1 population is highly under sedentary lifestyle category. **Montserrat León-Latre et.al.**, conducted a study named Sedentary Lifestyle and Its Relation to Cardiovascular Risk Factors, Insulin Resistance and Inflammatory Profile and concluded that the most sedentary individuals had higher body mass index, greater waist circumference, and higher systolic blood pressure, with a significant upward trend in each tertile. Likewise, they had a worse lipid profile with a higher C-reactive protein level, homeostasis model assessment of insulin resistance index, triglyceride/high-density lipoprotein cholesterol ratio, and insulin concentration (16).

Classification based on social history of both the groups is depicted in Table 9. Subjects are categorized based on their social history. Among the 67 subjects of Group 1, 19(28%) subjects were smokers, 22(33%) were alcoholics, 15(22%) were both smokers & alcoholic and 35(52%) were non-smokers & non-alcoholics. Among the 69 subjects of Group 2, 09(13%) subjects were smokers, 12(17%) were alcoholics, 02(3%) were both smokers & alcoholic and 46(67%) were non-smokers & non-alcoholics. Comparatively Group 1 is having more smokers and alcoholics. **E Winslow et al. Am J Med. 1996** conducted a study named Lifestyle modification: weight control, exercise, and smoking cessation and concluded that Cigarette smoking, obesity, and sedentary lifestyle are known to increase risk of coronary and other vascular disease (17). **Kevin D. Shield et.al.**, conducted a study named Chronic Diseases and Conditions Related to Alcohol Use and concluded that twenty-five chronic disease and condition codes in the International Classification of Disease (ICD)-10

are entirely attributable to alcohol, and alcohol plays a component-risk role in certain cancers, other tumors, neuropsychiatric conditions, and numerous cardiovascular and digestive diseases (18).

Classification based on the exercise pattern of both the groups is depicted in Table 10. Subjects are categorized based on their exercise pattern. Among the 67 subjects of Group 1, 15(22%) subjects were doing exercise once in a week, 09(13%) were doing exercise two to three times a week, 06(9%) were doing exercise five to six times a week and 37(56%) were never indulged in any kind of exercises. Among the 69 subjects of Group 2, 14(20%) subjects were doing exercise once in a week, 20(29%) were doing exercise two to three times a week, 30(44%) were doing exercise five to six times a week and 05(07%) were never indulged in any kind of exercises. **Janssen et al., (2000)** conducted a study on "Exercise alone is an effective strategy for reducing obesity and related co-morbidities". The commonly held view that exercise alone is not a useful strategy for obesity reduction is drawn from studies with limitations that confound interpretation. Recent evidence counters the dogma that daily exercise produces only modest weight loss and suggests that exercise without diet restriction is an effective strategy for reducing obesity and related co-morbidities (19).

Classification based on the sleeping pattern of both the groups is depicted in Table 11. Subjects are categorized based on their Sleeping Pattern. Among the 67 subjects of Group 1, 08(12%) subjects were sleeping for 8 hours, 25(37%) were sleeping for 6-8 hours and 34(51%) were subjects with less than 6 hours of sleep. Among the 69 subjects of Group 2, 30(44%) subjects were sleeping for 8 hours, 29(42%) were sleeping for 6-8 hours and 10(14%) were subjects with less than 6 hours of sleep. **Marie-Pierre et al., (2006)** conducted a study on "Sleep Duration and quality Sleep is increasingly recognized as an important lifestyle contributor to health. This has resulted in a decline in average sleep duration over time. Sleep duration, mostly short sleep, and sleep disorders have emerged as being related to adverse cardiometabolic risk, including obesity, hypertension, type 2 diabetes mellitus, and cardiovascular disease. Here, we review the evidence relating sleep duration and sleep disorders to cardio metabolic risk and call for health organizations to include evidence-based sleep recommendations in their guidelines for optimal health (21).

Distribution of Disease patterns of group 1 & 2 depicted are in Table 12 & 13 respectively. Subjects are categorized based on their presenting diseases. Among the 67 subjects enrolled in Group 1, 27 subjects were Hypertensive, 20 were Type 2 Diabetic and 10 were subjects

with CVD risk and 10 were with no illness. Among the 69 subjects enrolled in Group 2, 19 subjects were Hypertensive, 18 were Type 2 Diabetic and 06 were subjects with CVD risk and 26 were with no illness. **James M. Ripped et al., (2017)** conducted a study on "Lifestyle Medicine: The Health Promoting Power of Daily Habits and Practices". There is no longer any serious doubt that daily habits and actions profoundly affect both short-term and long-term health and quality of life. The purpose of this review is to provide an up-to-date summary of many of the modalities fundamental to lifestyle medicine, including physical activity, proper nutrition, weight management, and cigarette smoking cessation. This review will also focus specifically on how these modalities are employed both in the prevention and treatment of chronic diseases including coronary heart disease, diabetes, obesity, and cancer. The review concludes with a call to action challenging the medical community to embrace the modalities of lifestyle medicine in the daily practice of medicine (28).

Comparison of Distribution of Disease pattern of group 1 & 2 is depicted in Table 14. Two groups were compared based on the number of incidence of diseases. Where Group 2 is showing significant reduction of diseases while comparing with Group 1. There is statistically significant reduction at 0.05 level of significance. **Willy Marcos Valencia et al., (2014)** conducted a study on "Weight loss and physical activity for disease prevention in obese older adults: an important role for lifestyle management. This review, offered a critical view to clarify misunderstandings regarding the obesity paradox, particularly as it relates to obese older adults also reviewed the evidence on physical activity and lifestyle interventions for the improvement of cardiorespiratory fitness, which can prevent disease and provide benefits to obese older adults, independent of weight changes (26).

6. CONCLUSION:

In this study, 136 general public were involved and assessed for the knowledge about lifestyle and impact over their health. Patients were categorized into two groups such as Group 1 & 2 based on the response for the given questionnaire, in which Group 1 were the public who weren't aware of lifestyle whereas Group 2 were the public who were aware of lifestyle and its impact over health and diseases.

This study brought a conclusion that the public who were aware of lifestyle and its impact over health and diseases (Group 2) has comparatively lower disease burden when compared with the public who weren't aware of lifestyle (Group 1). Hence, this study evidence the major role of lifestyle over health.

This study enforces the importance of lifestyle modifications in the prevention and management of diseases even though there is proper medication adherence.

7. REFERENCES:

1. Ziglio E, Currie C, Rasmussen VB (2004). The WHO cross-national study of health behavior in school aged children from 35 countries: findings from 2001-2002. *J School Health*, 74(6): 204-206.
2. WHO (2001). Services for prevention and management of genetic disorders and birth defect in developing countries. (WHO/HGN/WAOPB-D/99.1).
3. Karimi M, Heidarnia A, Ghofranipur F. Effective factors on using medication in aging by using healthy believe. *J Arak Med Uni*, 2010; 14(5); 70-78.
4. Iran as a second country in using drugs in Asia. Available at: www.irna.ir/fa/news/81330471/. Accessed: 15 Sep 2014.
5. Mozaffarian D, Hao T, Rimm EB, Willett W, Hu FB. Changes in diet and life style and long-term weight gain in women & men. *N Eng. Med J*, 2011; 364: 2392-2404.
6. Dunn AL, Anderson RE, Jakicic JM (1998). Life-style physical activity interventions: history, short and long term effects and recommendation's. *Am J Preven Med*, 15(4): 398-412.
7. C3 collaborating for health. (2011). The benefits of physical activity for health and wellbeing. Available at: www.c3health.org/www-con-tent/uploads/2009/09/C3-review-of-physical-activity-and-health-v-1-20110603.pdf. Accessed: 1 Oct 2014.
8. Farhud DD, Malmir M, Khanahmadi M. Happiness as a healthy life style. *Iranian Academy of Medical Science*. 2015; 11:5;367-69
9. Farhud DD, Tahavorgar A. Melatonin hormone, metabolism & its clinical effects: a review. *Iran J Endocrinol Metabol*, 2013;15(2): 221-236.
10. Ebrat news (2013). Frequency of using cigarette in adolescents: awareness of authority. www.ebrat.ir/part=mobil&inc=news&id=48774. Accessed: 10, 2014.
11. Ebadi M, Vahdaninia M, Azin A, Aeenparast A, Omidvari S, Jahangiri K et al. (2011). Prevalence of smoking: health in view of Iranian. *Peyesh Quarterly*, 10 (3); 365-372.
12. Thomee S, Harenstam A, Hagberg M (2011). Mobile phone use and stress, sleep disturbances, and symptom of depression among young adults. *BMC Public Health*, 11:66-77.
13. National Institute on Drug Abuse. Health Consequences of Drug Misuse. www.drugabuse.gov/related-to...es-drug-misuse. Updated March, 2017. Accessed September 20, 2017.
14. Centers for Disease Control and Prevention (CDC). "Smoking and Tobacco Use." http://www.cdc.gov/tobacco/data_stat...lity/Index.htm. Updated December 1, 2016. Accessed September 20, 2017.
15. Harvard Health Blog » Healthy lifestyle. MARCH 25, 2020, Monique Tello, MD, MPH Contributor. 2020; 15:1; 35-38.
16. Montserrat Leon-Latre, Belen Moreno-Francoa, Eva M. Andres-Esteban c, Marta Ledesmaa, Martin, Victor Alcaldee, Jose L. Penalvod, Jose M. Ordovasd,f, Jose A (June 2014). Sedentary Lifestyle and Its Relation to Cardiovascular Risk Factors, Insulin Resistance and Inflammatory Profile. Vol. 67. Issue 6. Pages 449-455
17. E Winslow et al. *Am J Med*. 1996. Lifestyle modification: weight control, exercise, and smoking cessation. 1996 Oct 8;101(4A):4A25S-31S; discussion 31S-33S.
18. Kevin D. Shield, M.H.Sc., Charles Parry, Ph.D., and Jürgen Rehm, Ph.D. Chronic Diseases and Conditions Related to Alcohol Use. *Alcohol Res*. 2014; 35(2): 155-171.
19. R Ross 1, J A Freeman, I Janssen 2000 Oct;28(4):165-70. Exercise alone is an effective strategy for reducing obesity and related co-morbidities.
20. RR Wing, MG Goldstein, KJ Acton, LL Birch Diabetes. Lifestyle changes related to obesity, eating behavior, and physical activity. 2001; 34:3; 467-70.
21. Marie-Pierre St-Onge, Michael Grandner, Devin Brown, Molly B Conroy. Sleep Duration and Quality: Impact on Lifestyle Behaviors and Cardiometabolic Health September 2006: *Circulation* 134(18).
22. Willa Fabia et al. Lifestyle management system. 2012: 45:3; 156-59.

23. Remez Sassoon, The Power of Positive Thinking. <http://www.successconsciousness.com>. 2015: 13:5; 234-36.
24. Krisha McCoy, Medically Reviewed by Niya Jones, MD, MPH Burning Calories With Everyday Activities. 2003. 45:7; 345-348.
25. Robert F Kushner. Prog Cardiovascular. Weight Loss Strategies for Treatment of Obesity: Lifestyle Management and Pharmacotherapy. Jul-Aug 2018;61(2):246-252.
26. Mark Stoutenberg & Hermes Florez, Weight Loss and Physical Activity for Disease Prevention in Obese Older Adults. September 2014. 67:5; 56-59.
27. Michael Dymond et al., Exercise can have a positive impact on your sleep quality 2016. 45:8; 347-49.
28. James M. Rippe, MD. Lifestyle Medicine: The Health Promoting Power of Daily Habits and Practices. July 20, 2017. 45:2; 56-59.
29. Deanna M. Minich, Jeffrey S. Bland. Personalized Lifestyle Medicine: Relevance for Nutrition and Lifestyle Recommendations. The Scientific World Journal, vol. 2013, 14 pages.

8. LIST OF ABBREVIATIONS:

DM	Diabetes Mellitus
BP	Blood Pressure
BMI	Body Mass Index
CVD	Cardiovascular Disease
IMDS	International Material Data System
ICD	International Classification of Disease
ED	Erectile Dysfunction
WHO	World Health Organization
AIDS	Acquired Immuno Deficiency Syndrome
CDC	Centers for Disease Control
CHD	Coronary Heart Disease