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DIABETES AND BLOOD PRESSURE EFFECTS ON LIVER, HEART, AND KIDNEY DUE TO EATING HABITS AND LIFESTYLE WITH VARIOUS PROPHYLAXIS METHODS

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ABSTRACT

The liver, heart, and kidneys are among the many important organs that are greatly affected by the common chronic diseases of diabetes and hypertension. The development and worsening of these illnesses are mostly caused by inactive lifestyles and unhealthy diets. Hypertension increases the risk of renal and heart disease, nephropathy, hepatic dysfunction, and cardiovascular disease; uncontrolled diabetes increases the risk of nephropathy, nephropathy, and cardiovascular disease. This research delves into the ways these disorders impact organ health and examines several preventive approaches, such as medication, exercise, and dietary changes. Important interventions in the prevention or treatment of diabetes and hypertension problems include maintaining a healthy weight, controlling blood pressure, eating a balanced diet, and exercising regularly. In order to improve long-term health outcomes for those at risk of or living with diabetes and high blood pressure, this study seeks to provide a holistic strategy that emphasises lifestyle modifications and early intervention.

Keyword: - Diabetes, Hypertension, Blood pressure, Liver health, Heart health, Kidney health.

INTRODUCTION

The good news is that there is some degree of control over environmental influences, which means that disease resulting from these causes can be significantly prevented from manifesting. A person's diet is one of the most important variables that has been connected to a variety of illnesses. One of these ailments is diabetes, for instance. One of the most important factors that determines human health is the quantity and kind of food that is consumed. Diabetes care involves nutrition in three different forms: diet on its own, diet in combination with oral hypoglycemic medications, or diet in combination with insulin. Food is one of the most crucial components of diabetes management. A person's food has a major role in diabetes management. between the ages of 10 and 15 A person's diet is tailored to meet their individual needs by considering a number of factors, such as their age, weight, gender, occupation, health, and other factors. These dietary guidelines are collections of brief recommendations for managing the diabetic population's nutrition. Because of their efficacy, these suggestions were used in this inquiry. The development of these recommendations aims to improve general nutritional health, control glycogenic levels, and avoid or mitigate diabetes-related problems.

OBJECTIVE

1. To gain an understanding of how people's perceptions and attitudes regarding blood pressure and diabetes affect their lives; and

2. To understanding of how people with diabetes and high blood pressure adjust to their lives

MELLITUS, OFTEN KNOWN AS DIABETES

The chronic medical disorder known as diabetes is characterized by the body's incapacity to either create or effectively haract insulin, a hormone that regulates blood sugar levels. People with diabetes are impacted by the disease known as diabetes. The two fundamental categories that may be used to categorise problems related to diabetes are type 1 diabetes and type 2 diabetes.

There is a condition known as type 1 diabetes, which happens when the immune system erroneously attacks and destroys the pancreatic cells that are responsible for the production of insulin. Higher levels of blood sugar are observed throughout the body as a consequence of the decreased production of insulin by the body.

There is a significant proportion of the younger population that is affected by type 1 diabetes. People who have this ailment, which needs them to take insulin for the rest of their lives, must make sure that they keep their blood sugar levels at a healthy range. One of the defining characteristics of this condition is the extremely high frequency with which it arises. In contrast to type 1 diabetes, type 2 diabetes is characterised by the body's inability or resistance to create sufficient insulin to fulfil its needs. This is the distinguishing characteristic of type 2 diabetes. Insulin resistance is a hallmark of type 1 diabetes. Type 2 diabetes is typically linked to lifestyle factors such as being overweight, having an unhealthy diet, and not getting enough exercise. Making lifestyle adjustments, such as improving one's nutrition and increasing regular physical exercise, can help manage the disease. But occasionally, medicine could also be required to effectively treat the illness.

PRESSURE OF THE BLOOD

The force that the blood exerts on the blood vessel walls as it passes through the circulatory system is referred to as "blood pressure". The majority of this pressure is inherent because the heart is the organ responsible for circulating blood throughout the circulatory system. The most common location for such measures is the brachial artery, where blood pressure is determined. Without any qualifiers, "blood pressure" refers to the pressure that is measured in the brachial artery. Blood pressure is often represented in terms of the cardiac cycle as the systolic pressure, which is the maximum pressure that is experienced during a single pulse as opposed to the diastolic pressure, which is the lowest pressure that is experienced between two heartbeats. The maximum pressure experienced in a single pulse is known as the systolic pressure. Depending on the unit of measurement, it can be expressed in either kilopascals (kPa) or millimetres of mercury (mmHg). The measurement is made using the atmospheric pressure as a reference point. The difference in pressure that occurs throughout a heart cycle from the systolic to the diastolic phases is known as the pulse pressure. Conversely, the average pressure that exists inside a cardiac cycle

is known as the mean arterial pressure. The pulse pressure is the term used to describe both of these pressures.

Traditionally, auscultation was used by a medical professional to take a patient's blood pressure non-invasively. Using either an aneroid gauge or a mercury-tube sphygmomanometer, the artery in one arm is pushed closer to the heart while a stethoscope is used to listen for sounds in the artery. Auscultation is referred to as such. In clinical settings, auscultation is still considered the gold standard of accuracy for non-invasive blood pressure measurements. This is thus because the most dependable technique is auscultation. Nevertheless, semi-automated procedures are becoming more typical across a number of sectors. But other factors that have contributed to defining this trend include affordability, ease of use, and applicability to home or mobile blood pressure measurements. The main cause of this is the worries expressed about the possible toxicity of mercury. Achieving a standard deviation of less than 8 mm Hg and an average difference between two standardised reading processes of less than 5 mm Hg is feasible with contemporary technologies that have been verified to meet international standards. To put this in context, the early automated sphygmomanometer replacements that used mercury tubes were typically not that accurate. This is different from how things are right now. An oscillometer is the main instrument used by the great majority of these semi-automated blood pressure monitoring systems. This specific type of measuring measurement is performed using a pressure transducer that is built into the device's tube. This is accomplished by monitoring the brief intra-cuff pressure oscillations that result from changes in each pulse's volume caused by the heartbeat.

Medical practitioners consider a number of vital indicators while doing a patient's health examination, including the patient's blood pressure, heart rate, respiration rate, oxygen saturation, and body temperature. The blood pressure is one of the essential indications. The phrase "120/80 mmHg" describes an adult's typical resting blood pressure, which is around 120 mmHg (16 kPa) systolic over 80 mmHg (11 kPa) diastolic. This serves as the benchmark for an adult's normal blood pressure. Age-standardized average blood pressure hasn't changed much between 1975 and the present, even if these average figures hide wildly varied regional variations. The average blood pressure of males is around 127/79 mmHg, whereas the average blood pressure of females is 122/77 mmHg.

Cardiovascular illnesses account for about 40 million fatalities worldwide each year, therefore their prevalence in India is a major public health problem. There is a correlation between physiological characteristics that include diabetes, an excessive body mass index, masculine gender, and a family history of cardiovascular disease and hypertension. Each of these elements has a correlation with cardiovascular disease. A bad diet, elevated stress levels, and alcohol and nicotine use are a few lifestyle factors that might be addressed. There are other aspects of lifestyle that might change. Hypertension has the potential to adversely affect an individual's financial resources, work productivity, family relationships, quality of life, and health. Additionally, hypertension may have a negative impact on one's health. The federal, state, and local governments are now working to address, mitigate, and treat hypertension. They're working on it right now. Despite the fact that these programmes have advanced significantly, they have not been effective in many particular regions around the globe.

An Accurate Blood Pressure Reading A child's blood pressure can be as low as 70/50 mm Hg, while an adult's blood pressure can reach as high as 130/80 mm Hg. There is a noticeable variation in blood pressure here. The normal range for blood pressure in children and adolescents under the age of eighteen

is frequently less than 120/80 mm Hg. For those above the age of 18, blood pressure up to about 130/80 mm Hg is regarded as normal. This range is thought to fall into the typical range. "High-normal" or prehypertension is the outcome when the diastolic (lower number) measurement falls between 85- and 90-mm Hg and the systolic (upper number) reading falls between 135- and 139-mm Hg. Hypertension and hypertension are other names for this illness. When an adult's blood pressure is continuously 140/90 mm Hg or above, they are diagnosed with high blood pressure, often known as hypertension. Another name for this illness is hypertension.

THE LIFESTYLE

Every individual, group, and culture possesses a unique set of pursuits, mindsets, customs, and behavioural patterns that make up their way of life. Their way of life is composed of these components. The phrase "a person's basic character as established early in childhood" was first used in 1929 by Austrian psychologist Alfred Adler in his book "The Case of Miss R." The idea was initially introduced in Adler's book. The concept of lifestyle was established in 1961 as a "way or style of living." This is a more thorough explanation of lifestyle than I just gave. A certain manner of living is made up of a number of components, some tangible and some more ethereal. Certain characteristics are deemed tangible because they are particularly related to demographic parameters, often known as a person's demographic profile. Conversely, intangible factors pertain to an individual's psychological makeup, including their distinctive characteristics, inclinations, and perspectives. These are the variables that distinguish themselves from material elements.

The daily habits of those who live in large cities and those who live in rural areas differ greatly. Even when viewed within the context of an urban setting, location has relevance. The kind of neighbourhood a person lives in affects the range of lifestyle options accessible to them since different communities have varying levels of wealth and accessibility to natural and cultural environments. This is due to the varying degrees of accessibility that distinct communities have to their natural and cultural environments. Take the popularity of a surf culture or lifestyle in places that are near to the ocean as an example of this.

A person's manner of life, worldview, views, and opinions on the world are typically reflected in their lifestyle. Following a certain way of life may help one build a sense of self and produce cultural symbols that are consistent with their own identity. Certain elements of a person's lifestyle are not something they can control. The social and technical structures that exist in an individual's surroundings may limit their ability to project particular symbols onto other people and onto themselves. Additionally, there's a chance that this will limit their options for lifestyle.

The boundaries that distinguish personal identity from daily actions that are representative of a certain way of life in today's society are getting more fuzzier. For example, living a "green lifestyle" is the act of following values and engaging in activities that require using fewer resources and producing less hazardous waste (i.e., leaving a smaller ecological footprint), as well as developing a sense of identity. Furthermore, the phrase "green lifestyle" also describes the idea of "green living," which is achieved by embracing these ideas and engaging in these pursuits. Stated differently, a "green lifestyle" refers to an ecologically responsible manner of living. Some people in the modern day believe that human consuming habits play the most important role in shaping people's lifestyles. By using a range of goods and services that reflect various lifestyles, one may further develop and individualise oneself by participating in this

behaviour. A person's lifestyle may include their own opinions on a range of topics, such as intimacy, politics, religion, and health. Every single one of these elements has an impact on how someone constructs their way of life. The term "lifestyle" refers to a particular genre of publications or television programmes produced by the magazine and television industries.

The initial protocol for the treatment of hypertension consists of three main parts: dietary changes, increasing physical activity, and weight loss. These are the same as the suggested lifestyle modifications for preventative measures. It has been demonstrated that each of these significantly lowers blood pressure in those who have been diagnosed with hypertension. The use of one medicine is comparable to the use of many combinations in terms of potential effectiveness. However, in cases when hypertension is severe enough to necessitate a prescription for medicine right once, it is advised that lifestyle modifications be made in addition to medication use.

HYPERTENSION

India is seeing an increase in the prevalence of cardiovascular disease (CVD) and hypertension, which calls for immediate attention as a matter of public health. Optimal, resource-sensitive, and context-specific use of a blend of clinical and population techniques is the most efficient way to achieve this. The International Diabetes Federation (2014) states that in the year 2010, hypertension was one of the leading noncommunicable illnesses that caused a considerable number of deaths and disabilities worldwide. 9.4 million fatalities and 7% of Disability Adjusted Life Years (DALYs) in 2010 were attributed to hypertension. There are many challenges ahead in the pursuit of the WHO-UN target of a 25% fall in mortality from noncommunicable diseases and a corresponding drop in hypertension by 2025, but the opportunities to spur action are equally encouraging.

Hypertension, commonly referred to as high blood pressure (BP), is a major global public health issue that is prevalent in all cultures. A person is considered to have hypertension if their diastolic blood pressure (DBP) is more than or equal to 90 mmHg and their systolic blood pressure (SBP) is equal to or more than 140 mmHg, as per the guidelines set by the World Health Organisation (WHO). A mercury sphygmomanometer is used to measure blood pressure for diagnostic purposes. The measuring method can be either auscultatory or palpatory (Martin, 2008). Among the several NCDs, hypertension ranks high in prevalence. Worldwide, hypertension affected an estimated 600 million individuals in 2002, according to a World Health Organization assessment. A quarter of all deaths worldwide happened due to this disease, accounting for an estimated 50 million premature deaths (Kannel and MaGree, 1979; Medhi et al., 2006). The "Global Burden of Hypertension" data, which came from a 2002 research by the World Health Organisation (WHO), showed that in 2000, hypertension afflicted about one billion adults worldwide, or more than 25% of the world's adult population. Moreover, an almost sixty percent growth in this figure was projected, bringing the total to 1.56 billion by 2025.

As per Kearney et al. (2005), 26.4% of the world's population suffered from hypertension in 2000. It is projected that around 25% of those aged 20 and above will be diagnosed with this illness by 2025. Murray et al. (1996) report that an rise in the prevalence of hypertension is also being observed in developing nations. Not only is it one of the top causes of death, but it is also one of the many and morbidity in the elderly population, but it is also becoming more prevalent in developing nations. According to studies done between 1984 and 1987, 11% of men and 12% of women in Delhi's urban population had

hypertension (Gopinath et al., 1994; Chadha et al., 1997). This data was obtained from studies carried out in Delhi. An analysis of a study conducted in 2005 on a sample of people aged 40 and above in Chandigarh's urban population revealed that the prevalence of hypertension was 32.3%. (2007) As stated by Thakur and Kar. Over the past three decades, the prevalence of hypertension in India has increased by around 30 times among urban Indians, whereas it has climbed by about 10 times among rural Indians.

The frequency and severity of hypertension are significantly correlated with advancing age, according to studies conducted in 1971 by Evans and Rose. Research indicates that the oldest age group, which is growing at the fastest pace in both industrialised and developing nations, has the highest prevalence of high blood pressure. Furthermore, Waldestin et al. (2005) reported that more than 60% of seniors 60 years of age and older had hypertension (Oparil 2006). The study's conclusions provided evidence for this. The World Health Organisation reported in 2002 that there had been increases in the life expectancy of people in developing countries, along with significant changes in people's lifestyles and socioeconomic circumstances. People in developing countries were seen to be modelling themselves after western lifestyles. Apart from urbanisation and industrialization, one important factor contributing to the increasing incidence of hypertension was population ageing.

Both epidemiology and demography are changing, and people's lives in emerging countries like India have seen significant shifts. Consequently, noncommunicable disease prevalence has grown and communicable disease prevalence has decreased (Erdin and Aran, 2004). However, poor control of hypertension is conceivable due to the significant absence of infrastructure and health resources (Ghannem and Hadj, 1997; Kornitzer et al., 1999; Erdin and Aran, 2004; Mishra et al., 2006). Risk factors associated with a lifestyle that have been connected to the development of hypertension include being overweight, not exercising enough, eating too much fat and salt, and drinking too much alcohol. Research has shown that certain risk factors may be associated with hypertension in the north Indian population and have been shown to contribute to the development of hypertension.

Intensive pharmacological therapy and the adjustment of modifiable risk factors are two ways to manage the risk of hypertension. Thus, in order to avoid and limit the negative effects of hypertension, efforts should be made to improve its detection, treatment, prevention, and management. This makes it possible to provide antihypertensive medicine at lower dosages, which lowers blood pressure. Furthermore, as compared to treatment alone, it improves quality of life and lessens the intensity of the adverse effects. It also aids in lowering the dangers connected to cardiovascular illness. The objectives of avoiding and managing hypertension symptoms can only be met by combining individual and population-based strategies. For this reason, medical professionals, public health experts, and organisations involved in the sector worldwide now consider it urgently necessary to develop and put into practice suggestions aimed at minimising hypertension. This outcome cannot be achieved just by the findings of clinical or epidemiological research. To conduct a thorough investigation and determine the main causes of high blood pressure as well as the relationships between those causes and the disease, the two approaches must be combined. Information on the prevalence of diabetes and hypertension is quite sparse, and studies on these disorders have not been conducted often enough on the North Indian population.

CONCLUSION

There is a widespread misconception that diabetes and high blood pressure are relatively common health conditions; nonetheless, the dangers that are linked with these disorders are quite severe. As a consequence of this, it is challenging for people who have diabetes and high blood pressure to deal with the usual and ordinary aspects of life. It should come as no surprise that people's eating and living habits, particularly in metropolitan areas, have contributed to an increase in the prevalence of diabetes and high blood pressure. The general public has to be made aware of these ailments and should recognise that these issues become more significant beyond the middle age. The members of the family are obligated to take preventative measures if a member of the family becomes afflicted with certain illnesses. This is to ensure that the affected family members maintain control over their diet and weight, hence reducing the likelihood of the individual's death. In order to achieve this goal, it is necessary to interact with dietitians and medical practitioners on a consistent basis.

REFERENCE

1. Everson, SA, et al (2002): Epidemiologic Evidence for the Relation between Socio-economic Status and Depression, Obesity, and Diabetes. Journal of Psychosomatic Research. Vol. 53. No. 4. 2002. P. 891-895.

2. Ford, ES, et al (1997): Weight Change and Diabetes Incidence: Findings from a National Cohort of US Adults. American Journal of Epidemiology. Vol. 146. No. 3. 1997. P. 214-222.

3. Fung, TT, et al (2002): Whole-Grain Intake and the Risk of Type 2 Diabetes: A Prospective Study in Men. American Journal of Clinical Nutrition. Vol. 76. No. 3. 2002. P. 535-540.

4. Gagliardino, JJ and Etchegoyen, G (2001): A Model Educational Program for People with Type 2 Diabetes: A Cooperative Latin American Implementation Study (PEDNID-LA). Diabetes Care. Vol. 24. No. 6. 2001. P. 1001-1007.

5. Geiss, LS, et al (1995): Mortality among Persons with Non-Insulin Dependent Diabetes. IN: Diabetes in America. 2nd Edition. Bethesda: National Institute of Health, 1995. P. 233-258.

6. Gregg, EW, et al, (2000): Diabetes and Physical Disability among Older U.S. Adults. Diabetes Care. Vol. 23. No. 9. 2000. P. 1272–1277.

7. Grotto I, Grossman E, Huerta M, Sharabi Y. Prevalence of Pre- Hypertension and Associated Cardiovascular Risk Profiles among Young Israeli Adults. Hypertension.Vol. 48. No. 2. 2006. P. 254-259.

8. Gupta R and Gupta VP (2009): Hypertension Epidemiology in India: Lessons from Jaipur Heart Watch. Current Science. Vol. 97. 2009. P. 349–355.

9. Haffner, SM (1998): Epidemiology of Type 2 Diabetes: Risk Factors. Diabetes Care. Vol. 21. Supplement-3. 1998. P. 3-6.

10. Hu, FB and Liu, S (2001): Diet and Risk of Type II Diabetes: The Role of Types of Fat and Carbohydrate. Diabetologia. Vol. 44. No. 7. 2001. P. 805-817.

11. Hu, FB, et al (2003): Television Watching and Other Sedentary Behaviors in Relation to Risk of Obesity and Type 2 Diabetes Mellitus in Women. Journal of the American Medical Association. Vol. 289. No. 14. 2003. P. 1785-1791.

12. Izharul Hasan, et al (2012): Prevalence of Hypertension among Population of Sultanpur Kunhari and Its Surrounding Area, Haridwar, Uttarakhand, India. International Research Journal of Pharmacy. Vol. 3. No. 3. 2012. P. 310-314.

13. Izharul Hasan and Shabnum Khatoon (2012): Prevalence of Diabetes Mellitus and Obesity Among Population of Sultanpur Kunhari and its Surrounding Area, Haridwar Uttarakhand. International Research Journal of Pharmacy. Vol. 3. No. 2. 2012. P. 226-230.

14. Jasmine Sundar, et al (2013): Prevalence and Determinants of Hypertension Among Urban School Children in the Age Group of 13- 17 years in, Chennai, Tamilnadu. IOSR Journal of Dental and Medical Sciences. Vol. 8. No. 3. July-August 2013. P. 14-20.

15. Javid Ahmad, et al (2011): Prevalence of Diabetes Mellitus and Its Associated Risk Factors in Age Group of 20 Years and Above in Kashmir, India. Al Ameen Journal of Medical Science. Vol. 4. No. 1. 2011. P. 38-44.

16. Jayawardena, Ranil, et al (2012): Prevalence and Trends of the Diabetes Epidemic in South Asia: A Systematic Review and Meta-analysis. BMC Public Health. Vol. 12. No. 380. P. 1-11.

17. Joshi, SR (2005): Management of Obese Indian Patient. Indian Journal of Obesity. Vol. 1. No. 1. 2005. P. 11-20.

18. Joshi, Shashank R, et al (2012): Prevalence of Diagnosed and Undiagnosed Diabetes and Hypertension in India: Results from the Screening India's Twin Epidemic (SITE) Study. Diabetes Technology & Therapeutics. Vol. 14. No. 1. 2012. P. 8-15.

19. Kanaya, AM and Narayan, KM (2003): Prevention of Type 2 Diabetes: Data from Recent Trials. Primary Care. Vol. 30. No. 3. 2003. P. 511-526.

20. Kannan, L and Satyamoorthy, TS (2009): An Epidemiological Study of Hypertension in A Rural Household Community. Sri Ramachandra Journal of Medicine. Vol. 2. No. 2. June 2009. P. 9-13.

21. Klein, BE (2007): Overview of Epidemiologic Studies of Diabetic Retinopathy. Ophthalmic Epidemiology. Vol. 14. 2007. P. 179–183

22. Klonoff, DC and Schwartz, DM (2000): An Economic Analysis of Interventions for Diabetes. Diabetes Care. Vol. 23. No. 3. 2000. P. 390–404.

23. Knowler, WC, et al, (2002): Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. New England Journal of Medicine. Vol. 346. No. 6. 2002. P. 393-403.

24. Kokiwar, Prashant R, et al (2012): Prevalence of Hypertension in a Rural Community of Central India. Journal of Association of Physicians in India. Vol. 60. June 2012. P. 26-30.

25. Lee, WL, et al, (2000): Impact of Diabetes on Coronary Artery Disease in Women and Men: A Metaanalysis of Prospective Studies. Diabetes Care. Vol. 23. No. 7. 2000. P. 962-968.