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ROLE OF DIETOTHERAPY IN LIFESTYLE DISORDERS: BOTH CONVENTIONAL AND UNANI SYSTEM OF MEDICINE PERSPECTIVE

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ABSTRACT

Lifestyle disorders are the major health issues observed globally. They can be defined as diseases linked to one's lifestyle. These are chronic and are not transmitted from one person to another, also known as non-communicable diseases (NCDs). According to the World Health Organization (WHO), the mortality rate has increased in low-income countries due to lifestyle disorders. According to unani system of medicine, six essential factors are the basis for healthy lifestyle. Any imbalance in these factors leads to lifestyle disorders. There are three modes of treatment in unani system of medicine viz ilaj bit tadbeer (regimental therapy), ilaj bil dawa (pharmacotherapy) and ilaj bil yad (surgery or manual therapy). Dietotherapy (Ilaj bil giza) falls under regimental therapy. Dietotherapy is one of the most important approaches in which treatment is done through modulation in dietary habit which is necessary for the prevention and control of diseases. The review focuses on ways to prevent the risk of developing lifestyle disorders in adults and improve the quality of life of patients with the help of dietotherapy.

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INTRODUCTION

Lifestyle disorders are significant health issues prevalent worldwide. The world is shifting from infectious to non-communicable diseases (NCDs).⁽¹⁾ According to the World Health Organization (WHO), the mortality rate has increased in low-income countries due to NCDs.⁽²⁾ A recent study from various locations in India indicates that individuals with lower socioeconomic status are more susceptible to developing coronary heart disease and have a higher mortality rate.⁽³⁾ Combatting this increasing health crisis requires a comprehensive understanding of the causes and prevention of lifestyle disorders from a nutritional perspective. According to unani system of medicine, six essential factors are the basis for healthy lifestyle. Any sort of imbalance in these factors leads to lifestyle disorders.⁽⁴⁾ Diet is an important component of these essential factors. The review aimed to prevent and improve the quality of life through Dietotherapy.

What are Lifestyle Disorders?

Diseases that are associated with an individual's lifestyle or way of living are known as lifestyle disorders. They are also

called non-communicable diseases (NCDs) because they do not spread from one person to another upon diagnosis. These conditions are chronic in nature and are often caused by unhealthy lifestyles, undesirable behaviours, chronic stress, poor dietary habits, physical inactivity, and addiction to alcohol, smoking, and social media. Most of these diseases are not curable, but they can be controlled and prevented through proper nutrition and necessary lifestyle changes. They are the leading cause of death worldwide. NCDs require prolonged treatment and have multiple risk factors and complex causes. Diseases like diabetes, cancer, cardiovascular diseases, and respiratory diseases are closely linked to lifestyle choices and are therefore termed as lifestyle disorders.⁽³⁾ Noncommunicable diseases (NCDs) are responsible for 41 million deaths annually, which is about 74% of all global deaths. The majority of NCD deaths, about 17.9 million people, are due to cardiovascular diseases, followed by cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million including deaths caused by kidney disease related to diabetes).⁽⁵⁾

The Unani System of Medicine (USM) is based on the concept of asbaab-e-sitta-zarooriya (six essential factors), which

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includes hawaa-e-muheet (air and climate), makoolat wa mashroobat (food and drinks), harkat wa sukoon-e-badani (physical activity and rest), harkat wa sukoon-e-nafsani (mental activity and rest), naum-wa-yaqza (sleep and wakefulness), and ehtebaas-wa-istafragh (excretion and retention). In the Unani System of Medicine, lifestyle disorders are the diseases that arise from the imbalance in asbaab-e-sitta-zarooriya over a long period. There are three modes of treatment in unani system of medicine viz ilaj bit tadbeer (regimental therapy), ilaj bil dawa (pharmacotherapy) and ilaj bil yad (surgery or manual therapy).⁽⁶⁾ kullyat nafeesi Dietotherapy (Ilaj bil giza) falls under regimental therapy. As most lifestyle disorders are due to improper dietary habits, it is crucial to adopt Dietotherapy for the prevention and management of lifestyle disorders from both modern and USM perspectives.

Unani Principles of Dietotherapy

Unani physicians strongly believe that food provides strength to the body and to morbid matters. There are certain abnormal conditions in which complete abstinence from diet or partial reduction is advised.⁽⁷⁾

Tark-e-Ghiza (To stop intake of Diet): Patients with adequate stamina are advised to completely abstain from diets that facilitate the evacuation of morbid matter from the body.^{(8),(9),(7)}

Taqleel-ul-Ghiza (Reduced intake of Diet): The second principle is to reduce both the quantity and quality of food to maintain physical strength and vigor and to contribute to the elimination of disease from the body.⁽¹⁰⁻¹²⁾

Reduction in diet intake can be done through the following ways

Reduction in kammiyat (quantity) of the diet: The quantity of food is reduced, but the nutritional value remains unchanged. This type of diet is recommended for patients with weak digestion who still need to provide nourishment to their bodies. For example, eggs.⁽⁷⁾

Reduction in kaifiyat (quality) of the diet: The amount of nutrients in the diet is decreased. This kind of diet is recommended when the patient desires food but their body's vascular system is affected by unhealthy substances. In this situation, the production of bodily fluids is reduced, providing a favorable environment for the action of unhealthy substances. E.g, vegetables and fruits.⁽⁷⁾

Reduction in kammiyat (quantity) and kaifiyat (quality) of the diet: The quantity and quality of the diet are reduced, especially when the body's functions are not significantly disturbed.^(8,7)

Application of Dietotherapy in Lifestyle Disorders Obesity (Siman Mufrit)

According to Buqrat (Hippocrates, 420 BC), the quality (kaifiyat) and quantity (Kammiyat) of diet, and the importance of a balanced diet in relation to the occurrence of disease, is an important factor in the treatment of obesity. Buqrat suggested that those looking to reduce fat should consume a diet that is low in calorie value and rich in fiber.

- They need to decrease the quantity of food.
- Avoid fatty diets.
- Consume dry and drying foods.
- Encourage fasting for obese individuals.
- Limit the intake of meat, milk, and alcohol.

- Eat plenty of vegetables.
- Include hot spices such as chili, cumin, and garlic in your diet as they have mild properties.
- Cook food in vinegar.⁽¹³⁾

Adult weight gain is mostly the result of increases in fat mass, which build up gradually and peak at around one pound per year around midlife⁽¹⁴⁾. In longitudinal observational studies, a number of dietary changes, such as increased intakes of potato chips, fries, refined grains, processed meats, unprocessed red meats, and sugar-sweetened beverages, have been linked to modest increases in body weight, which are frequently imperceptible in the short term⁽¹⁴⁻¹⁶⁾. However, excessive energy consumption and weight gain might result from diets heavy in calorie-dense, highly processed foods⁽¹⁷⁾. Reduced weight gain and a decreased risk of obesity have been linked to higher consumption of yogurt, fruits (not fruit juices), whole grains, legumes, fish, and nuts. A gradual, long-term shift in weight may not be associated with other foods like cheese, milk, and beverages with artificial sweeteners. Although the exact roles of total fat, carbs, and protein, independent of food sources or diet quality overall, are less clear, the macronutrient composition of the diet may also contribute to long-term weight gain. For instance, persistently small increases in the number of calories from animal fat—but not from vegetable fat—have been linked to weight gain [96,97]. Long-term, progressive weight gain is also associated with an increase in trans and saturated fat at the expense of carbohydrate calories^(18,19). Diet is essential for weight loss in the treatment of overweight and obesity, in addition to preventing weight gain. Long-term weight loss (≥ 12 months) can be achieved with treatments that highlight a range of eating habits and diets, either with or without specific calorie restriction advice, according to experimental data⁽²⁰⁻²²⁾.

Cardiovascular diseases

The primary cause of death in the United States (US) is cardiovascular disease (CVD), which accounted for 868,662 deaths in 2018 and resulted in high healthcare costs of 363.4 billion in 2016–2017. It is concerning that the rate of fall in CV mortality has plateaued over the last ten years⁽²³⁾.

Even during the global viral SARS-CoV-2 pandemic, heart disease continued to be the primary cause of death despite significant advancements in all aspects of cardiovascular therapy⁽²⁴⁾. Poor diet and an unhealthful lifestyle are accepted risk factors for cardiovascular disease (CVD) and together they account for a significant portion of life years lost and cumulative morbidity⁽²⁵⁾. The effects of Mediterranean versus low-fat control diet guidance were investigated in a randomized trial involving high-risk older Spanish adults, and the results showed a 30% reduction in the risk of atherosclerotic cardiovascular disease (ASCVD)⁽²⁶⁾. One of the nine main modifiable variables linked to myocardial infarction (MI) was shown to be low fruit and vegetable consumption by the INTERHEART study⁽²⁷⁾. Similarly, the Prospective Urban Rural Epidemiology (PURE) study found that adults who consumed more fruits, vegetables, and legumes were at a decreased risk of dying from all causes⁽²⁸⁾. In 2019, the American College of Cardiology (ACC) and American Heart Association (AHA) Guidelines on the primary prevention of CVD, as well as the 2021 European Society of Cardiology guidelines on cardiovascular disease prevention in clinical practice, emphasized the consumption of a plant predominant diet with a class I recommendation^(29,30). The guidelines

recommended reducing the use of processed meats, refined carbohydrates, and sweetened beverages. They also suggested lowering dietary cholesterol and sodium levels, substituting monounsaturated and polyunsaturated fats for saturated fat, and staying away from trans fats⁽³⁰⁾.

Hypertension

Hypertension is still a major modifiable risk factor for CVD mortality and disability-adjusted life-years in the US and around the world, despite advancements in pathophysiology and therapy⁽³¹⁾. After 45 years of age, the lifetime risk of developing hypertension in the US is estimated to be between 84 and 93%⁽³²⁾. Dr. Walter Kempner demonstrated in a case series from the mid-1900s that dietary modification could improve hypertension, particularly when following a low-sodium plant-based diet consisting primarily of fruits and whole grains⁽³³⁾. Later, in 1986, a small RCT found that a vegetarian diet significantly lowered blood pressure compared to an omnivorous diet, and in 1988, Dr. Frank Sacks and colleagues demonstrated that vegetarians tended to have lower blood pressure compared to the general population^(34,35). In light of these findings, the DASH diet was developed to have the blood pressure lowering benefits of a vegetarian diet while including enough animal products to be palatable to non-vegetarians⁽³⁶⁾. A DASH diet consists of less processed and red meats, saturated fats, and sweets and more fruits, vegetables, legumes, nuts, fiber, fish, and low-fat dairy products. The DASH diet reduced systolic and diastolic blood pressure by 5.5 mmHg and 3.0 mmHg, respectively, more than the Western diet in a pivotal 8-week RCT comparing the two diets. The DASH diet had a stronger effect on study participants with hypertension, whose systolic and diastolic blood pressure decreased by 11.4 mmHg and 5.5 mmHg, respectively⁽³⁷⁾. An umbrella review of systematic reviews and meta-analyses of controlled trials, which found that following a DASH dietary pattern reduced blood pressure, further corroborated the hypotensive effect of the diet pattern⁽³⁸⁾. Blood pressure seems to be impacted by dietary sodium as well (39). Throughout human evolution, the only nutritional source of salt was found in nature, resulting in an intake of approximately 0.5 grams per day^(40,41). Dietary sodium intake should be less than 5gm of sodium per day.⁽⁴²⁾

Diabetes mellitus (*ziyabetes shakri*)

Diabetes mellitus (*ziyabetes shakri*) according to unani system of medicine is caused by Sue Mizaj- Barid Ratab (Excess of coldness and wet). Numerous factors, including those from Asbab Sitta Zaroorya (the six essential factors) and Ghair Zaroorya (the non-essential factors) Ghair Muzadda, such as an excessive diet, a sedentary lifestyle, bathing after eating, sleeping in excess, using cold beverages, avoiding sun exposure, and experiencing excessive mental stress, tend to divert the mizaj toward Burudat and Rutubat.⁽⁴³⁾ Therefore, diet which come under the six essential factors of USM plays pivotal role in prevention and reversal of type 2 diabetes. Moderation in diet is key to diabetes management. Globally, the number of people with diabetes climbed from 11.3 million in 1990 to 22.9 million in 2017 (18), and \$325 billion is spent on healthcare each year in the US for the 34 million Americans who have the condition. Individuals with type 2 diabetes should receive dietetic guidance at the time of diagnosis (ideally within a month), follow-up care three months following the first dietary intervention, and continuous MNT every six to twelve months.15. Weight loss of 5–10% of baseline body

weight at diagnosis, combined with control of hyperglycemia, hyperlipidemia, and/or hypertension, is a main target due to the high incidence of overweight and obesity in this group and its primary role in the aetiology of the syndrome. This can be accomplished by maintaining an energy-balanced diet that includes frequent physical activity, low levels of salt and saturated fat, and high levels of fiber and low-GI carbs. Regardless of dietary composition, it is important to note that the most likely indicators of effective weight loss are lowering energy intake and receiving regular nutritional counseling and support.^(44,45) Limiting saturated fat consumption and avoiding trans fats can help with weight management, enhance insulin sensitivity, lower blood lipid levels, and lower the risk of cardiovascular disease overall.

Consuming carbohydrates should be spread out evenly throughout the day to help control blood sugar levels. Patients on insulin should match their carbohydrate intake to the amount of medication they are taking orally for certain types of drugs. The major sources of carbohydrates should be wholegrains, legumes, fruits, and vegetables high in fiber. Low-fat dairy products, such as milk and yoghurt, are also a good source of carbohydrates.⁽⁴⁶⁾ Due to potential risks to renal function and a lack of evidence of long-term benefits, it is typically advised that patients with diabetes stay away from high-protein diets. Limiting alcohol consumption to two standard drinks per day is recommended.⁽⁴⁷⁾ In addition to dietary modifications, regular physical activity should also include resistance training three times a week and at least 150 minutes of moderate-intensity cardiovascular exercise per week, unless there are contraindications.⁽⁴⁸⁾

CONCLUSION

It was found that the community's primary cause of death was lifestyle disorders. The precise cause of lifestyle diseases has not been identified due to their complex etiology. These diseases are thought to develop due to improper diet and lifestyle. Therefore, dietary and lifestyle modification is the only rule of thumb to prevent and manage lifestyle diseases. We should incorporate healthy dietary habits and lifestyles into our lives so that we can say no to these emerging health crises. The review can serve as a guide to a healthy lifestyle by eliminating NCDs by adopting dietotherapy. Furthermore, more and more research is needed to incorporate Dietotherapy as an evidence-based approach to prevent and manage lifestyle disorders.

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