

The Impact of Nutrition on The Healthy Aging of People in Gilgit Baltistan

Sonia Deedar

soniadeedar7@gmail.com

Student, Department of Sociology, Fatima Jinnah Women University Rawalpindi, Pakistan

Shehnaz

Shehnazbarcha98@gmail.com

Student, Department of Sociology and Anthropology, Karakorum International Univeristy, Gilgit-Baltistan, Pakistan

Mehwish Murtaza

mehwishmurtaza22@gmail.com

Student, Department of Sociology, Fatima Jinnah Women University Rawalpindi Pakistan

Corresponding Author: * Sonia Deedar soniadeedar7@gmail.com

Received: 20-07-2025 **Revised:** 24-08-2025 **Accepted:** 06-09-2025 **Published:** 20-09-2025

ABSTRACT

Hunza Valley, located in northern areas of Pakistan, remains distant from the age of modern development. However, people are known for maintaining sustainable health, and the life expectancy is particularly high in few regions around the world, including Hunza Valley, where people often live beyond one hundred years, with some exceeding 115. Whereas average life expectancy in other areas of Pakistan is only sixty-seven years. The eminent British physician and nutrition Sir Robert Maccarrison was among the first researchers who conducted scientific studies on the dietary habits of the people of Hunza Valley, Pakistan. The main focus of his studies was to find out the food secrets which leads to their long and healthy life. This article is based on secondary data, reviewed in the form of books, personal experiences, case studies, articles and journals. These sources were examined in detail to understand how the people of Hunza achieved longevity and what specific dietary practices contribute to it. The result indicated that a chemical compounds such as protein, fat, carbohydrates, vitamin or mineral are the essential elements for the healthy life. Certain dietary practices and applications including calorie restrictions, the use of natural herbs, vegetables, traditional medicines, dry fruits, butter, milk and various fruits, along with methods of food productions, consumption, behaviour, and life style play an important role sustaining the active ageing.

Keywords: Hunza Valley, Longevity, Dietary Practices, Nutrition, Healthy Aging

BACKGROUND

Proper nutrition and a healthy lifestyle are the most important and least expensive ways to reduce the world global burden of non-communicable diseases and their risk factors. Sustainable nutrition is the most important factor for sustaining good health and functionality [1]. In accordance with American guideline, which are based on dietary recommendations and instructions, a healthy dietary pattern consists of nutritional concentrations provided through ingredients from all meal groups. With reference to recommended limits under calorie intake, human health is influenced at any stage of life, so it is dominant important/essential to achieve healthy dietary patterns from the beginning of life. [2]. This is because it does not only affect health but it also supports a healthy life at any stage of life, so it is very necessary to achieve healthy dietary patterns to maintain sustainable living [3].

Ageing refers to the process by which a human being becomes older over time it is a process that involves the loss of functional abilities of an individual and an increased risk of morbidity and mortality. Maintaining sustainable health and quality of life is a major challenge for people. Maximum life expectancy has not changed substantially but the world has experienced a demographic shift to higher life expectancy in recent years. With the increase in lifespan, the dispersal of the people has changed significantly and the chance of residing to historic age is growing. Multifunctional avoidance and remedy of frailty, disorder, and ailment appear to be the most effective ways to steer the people towards a healthier life and functional capacity [4].

The Nutritional Secrets and Healthy Aging in Gilgit-Baltistan

Dietary patterns are important modifiable lifestyle factors which directly impact the conservation of healthy ageing and modulate the likelihood of healthy aging [5]. There are many cultural rituals and rules in Hunza Valley where people have their specific patterns of diet [6]. Nutritional well-being is a fundamental aspect for health and autonomy, especially for the elderly [7]. In the Hunza Valley, which is far from modern advancement, people follow culturally specified food patterns. The people grow their own fresh vegetables, and they also use fresh water from glaciers for drinking and bathing. Apricots are staples for the Hunza, and their yearly diet consists mainly of apricots, mulberries, buttermilk, lassi, pears, endives, lettuce, radish, turnips, spinach, tomatoes, brussels sprouts, and beans. The people of the valley do not prefer to consume meat. Meat is cooked in their homes occasionally. They also consume wine made from fruits, which contributes to the healthy living of the people of Hunza. In fact, their loneliness and isolated lifestyle have some interesting features that make them healthier [8]. These nutrients are essential for a healthy immune system. People of the valley like to prepare their food in summer for autumn and winter by drying fruits and vegetables. The method of drying has different techniques, but they usually prefer sun drying. Sun-dried fruits contain high levels of magnesium and fiber, and they are excellent for brain functioning [9, 8].

Blood vascular disorders and most cancers are classified as the primary and secondary causes of death in the USA and other developed countries. Daily intake of fresh green salad and herbs is the best remedy for decreasing the risk of cardiovascular diseases, stroke, Alzheimer's, etc [10]. Therefore, the people of Hunza concentrate on local foods. They follow traditional customs of separating fat and evaporating it from ghee. They consume ghee with their meals and also use it in preparing different dishes.

They also consume more water during farming instead of fast food. An interesting characteristic of the people is that they keep bees in their yards and gardens for fresh and pure honey. They even design separate combs for bees. Pure and fresh honey contains natural nutrients and is rich in antioxidants, which provide protection to the human digestive system [8, 11]. The main constituent of the human body is water. Water is very necessary for survival as it prevents dehydration. Water is free from calories and is important for all biological activities. Food alone is not enough for the fulfillment of body requirements, so water plays a critical role in the constitution of cells, tissues, and different organs of the body. The human body consists of about 75% water. It has a key role in maintaining regularization, lubrication, and shock absorption. The people of Hunza drink fresh water from glaciers. In 2019, a quality test of water in Gilgit-Baltistan proved that the water met the exact pH value limits of the WHO [14].

James Sallis and Karen Glanz investigated that physical activity, healthy diets, and natural water are likely to lower rates of childhood obesity [15]. A round table meeting was held in 2017 in London (Merck Consumer Healthcare) to discuss aging and other important elements that could be optimized to assist individuals in achieving higher life expectancy and healthy living. However, healthy diet, energy intake, and body weight have significant impacts on longevity and quality of old age [16].

The Traditional Rural Village Life Style of Gilgit-Baltistan

The Gilgit Baltistan is known as the beauty of Pakistan. The valley has well known for its biodiversity due to its diversified climate. The region is located in the surrounding of three famous mountainous ranges e.g., Karakorum, Himalaya, and Hindukush. These areas are surrounded by the snow-covered mountain with deep gorgeous and narrow valleys.[17] These are pristine examples of ensuring survival in opposition to challenges imposed by means of nature and worldly occasion they are an amalgam of a number of Islamic sects, cohabitation in harmony, enduring harsh winters taking part in exceptional summers and webhosting through of traveler's over the world [18] Their lifestyle and living arrangement is very simple, they are not emotionally stressed because they are busy all the day with farming and household practices. They all are involved in heavy work practices from their childhood these activities can sustain a high degree of cardiovascular fitness as well as muscular strength because the way of living elements has an effect on structural and useful measures of talent fitness as properly as cognitive overall performance.[19] The healthier life secrets of Hunza valley is outdoor and indoor exercise. The outdoor exercise is beneficial for health because of fresh high mountains air in green environment surrounding by people. This is a way of relaxation which is regularly practiced by male and female in Hunza [8] They another secrets is they distance them from the industrialization thus, they prepare their future planning by making volunteer groups for upcoming generations also they engaged themselves in different approaches to betterment for their village and better socioeconomic structural life for future [20] So, they use plants resources for food, medicines, shelter, and fuel that were acquired from herbs usually collected from local pastures also doing short meditation session several times in a year during they practice various meditation and relaxation techniques [21] As, Alexander states, "if a man wishes to regain his pristine health and bodily vigor, he has to abandon any reliance on instinct and save himself by knowledge or conscious control." this is related to the diet. Therefore, the people of Hunza only prefer vegetarian food [8] it is widely known that psychosomatic disease is excluded in Gilgit because of the fact they are living in peace, consumption and the cool and refreshing mountain air allows the dwellers to take a deep breath every time. Fresh clean mountain air fosters health and wellness by providing an oxygen-rich treatment to human lungs and lifestyle is playing an important factor to maintain the life and decrease the risk of cardiovascular disease. Therefore, an adequate lifestyle and healthy diet are associated with life expectancy [22] Many scientific studies have proven that "The people who are living in green areas and consume fresh air, water and walk maximum in a natural beauty environment have better mental health than others who are living in cities. For this purpose, no matter of the class system, their religion and other element. Those people who have access to natural things are healthier than others and less possibility of any psychological disease" Environment provides important health service for human being [23]

Dietary Patterns and their Socio-demographic Determinants of Some Other Countries

China

The conceptualization of "healthy ageing" has encouraged by the Chinese government to sustain the health and to promote healthy China by 2030. For this purpose the Chinese citizens and other organizations and institutions are actively participated and achieve it as an important principle and goal to improve and maintain their physical health. [24] while in another perspective, a diverse diet was reported to promote a sustained life which further promotes healthy aging as vegetables and fruits are a good resource of antioxidants, and high proteins and vitamins can promote healthy aging. These dietary patterns can associate with healthier aging elderly people in China. [25] Along with diet, the most important factor of healthy aging among Chinese is their physical exercise and less psychological stress which can better cognitively function. The adoption of a healthy life style and cost-effective intervention

is the most important factors for the promotion of healthy.[26] Among all of these, however, the most significant effects on Chinese human health have been observed with the consumption of green tea.. "Antioxidants in the green are known to deal with many complications associated with digestion with elan" In fact herbs tea is known as an effective remedy to digest food stimulants. Also, it is considered as a relief provider from "intestinal gas" as well as "chronic disease" [25,26]

Japan

Japan has an active concentration upon the rising of many non-communicable diseases (NCDs). The Japanese government has a strong focus on primary care and prevention to create different strategies to provide interventions in different organizations and institutions. In the past, the Japanese recorded efforts to sustain and improve the health status of their citizens in "1920"[27,28] cardiovascular disease is very rare in Japan, which is attributed to the traditional diet of Japan. Japan's traditional diet with long-lived food culture such as (soy, tofu, natto, miso, beans, peas, and brown,) which is Japan's traditional diet, with its long-standing food culture such as soy, tofu, natto, miso, beans, peas, and brown rice, is rich in nutrients and low in fats and calories. By understanding the food secrets of the Japanese, a major factor influencing their longevity is their daily routine, agricultural production, and farming land.

The daily basis of exercise in their routine contributes to healthy aging among Japanese. On the other hand, they consumed fewer legumes, cereals, fish, and less alcohol. These all studies show that the people of Japan can share common behavior patterns which can be accountable common behavior patterns that account for their high life expectancy.

The following characteristics are included

Daily vigorous work roles and habits, including climbing and exercise.

Diet low in saturated fats and meat.

Maintain a diet that is high in vegetables.

A sustainable lifestyle that avoids drinking alcohol or smoking.

Low level of stress.

Their social groups have solidarity with each other and a high level of social support for the elderly. All of the above factors, along with genetics, are implicated in their history of longevity.[29]

South Korea

In 2017 the Korea medical association committee introduced some recommendations and directions for the healthy living in South Korea. The determinants and goals of these directions were to motivate the population of South Korea to follow healthy dietary patterns and a healthy diet rich in nutrients, proteins, and vitamins, which can help manage and prevent chronic disease and are beneficial for children and adolescents to ensure their sustainable health.

These guidelines are

Consumption of balanced food,

Consuming more water,

Having regular exercise,

Being active

(5) Timely sleep,

(6) Perceiving productively,

(7) Having the ability to manage tension,

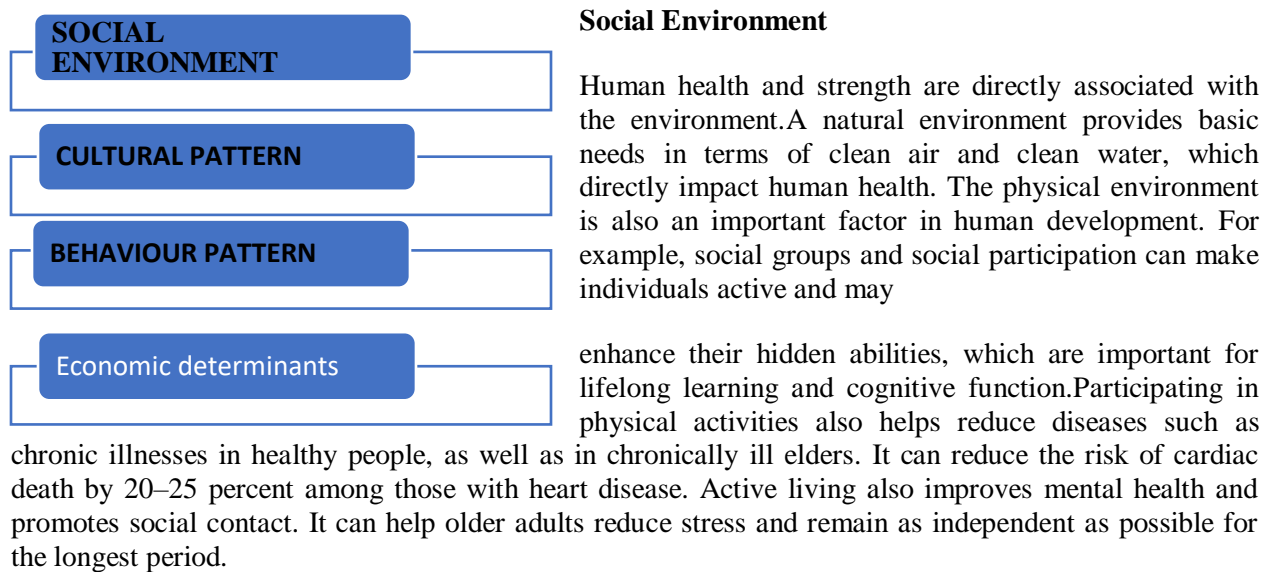
(8) Being active in personal matters,

(10) less use of electronic implement reduced use of electronic devices. [30].

On the other hand, the social activities in their social circle are a focus for adolescents to ensure their well-being.

Now South Korea is among the countries with a high life expectancy [31]" age [16].

Social Determinants of Healthy and Active Ageing



The WHO (1998) launched the conceptualization of the “friendly mega city” to motivate people from different places and neighborhoods to adopt services that provide senior citizens with access to their requirements and needs. However, social participation and integration have been shown to affect older people’s well-being negatively. Many studies demonstrate that socially isolated living negatively impacts

older people’s lifestyle, living arrangements, and behavior. Those who live alone for a long time, eat fewer meals a day, and do not consume dry fruits and fresh foods are at greater risk [32]. Isolation and

lack of social support strongly influence health and are associated with an increased risk of chronic disease and mortality [33].

Cultural Determinate

Every society has different cultures and living arrangements. In many societies, especially in rural areas, people prefer to live in extended households, with different generations living under one roof. Grandparents often have the responsibility to care for their family members. These people play an important role in care services through health attributes and different practices to sustain daily life and health. These kinds of cultures also have culturally bound syndromes, about which medical practitioners should be trained and able to implement appropriate responses. In turn, cultural health attributions affect beliefs about disease, treatment, and health practices. "Different theorists hold that cultural care provides the broadest and most important means to nursing knowledge and concomitant nursing care practices" [34, 35].

Behavior Pattern

Health and behavior are important factors of healthy living because behavior can increase or decrease the risk of psycho-physiological stress through different activities in the pursuit of adopting a healthy lifestyle. It is important to achieve healthy behavior patterns, e.g., regular exercise, diet, and other activities. Adopting a healthy lifestyle through eating a healthy diet, engaging in physical activities, and avoiding smoking can increase quality of life. Behavior patterns are the key to preventing and treating many diseases. For example, some people drink more water, while others regularly consume more vegetables and fruits, as they believe it is an important life factor [36]. Different studies have proven the connection between behavior and lifestyle as important variables for biological and physical health.

For instance, regular exercise, healthy lifestyle behaviors, and dietary supplements are significant for shaping health trajectories [37]. According to Rowe and Kahn, successful aging involves three main factors:

Being free from disability or complaints

Having high intellectual abilities and physical fitness

Interacting with others in meaningful ways

Likewise, they carried out a meta-evaluation of dietary supplements and successful aging. They identified four realms explaining successful aging: avoiding disease and disability, maintaining high cognitive, mental, and physical function, being actively engaged in life, and being psychologically well-adapted in later life.

Economic Determinant

According to the WHO Active Aging Policy Frame Work there are three type of economic factors which leads to healthy aging is

Income

Work

Social protection

Social or financial prerequisites are major determinant over health. Income, wealth, education, employment, neighborhood condition yet convivial policies have interaction in complex methods in conformity with affects our biology, health related behaviors, environmental exposures, and appearances yet utilizes about clinical services. Health affects related along lower socioeconomic function (SEP) do begin before delivery yet construct above for the duration of life. More certainly stated, existence terrible is imperfect for health. In fact

If people are not financially strong, they are high risk of being sick and obviously they are also suffering from different disease and health care services. They need money to afford for housing. The people of Gilgit Baltistan are not very financially strong people but they work. They get-up at early morning and start to cultivation in their yield. In many countries the government can provide different programs for those who are unable to work people also they give support for declining years that encourage people to work for longer but in Hunza valley people are supported each other by physically, emotionally and mentally (37)

CONCLUSION

Hunza, Northern areas of Pakistan have been known to the longer-lived people Compared to other regions in Pakistan. The primary reason behind this longevity is the distinct dietary practices of people in Hunza which can differ them from rest of regions in Pakistan. Their dietary pattern mainly consist of natural foods such as dry fruits, apricot, mulberry, grapes, plums, and cherries and potatoes and they all are cultivated by themselves. The people of Hunza have a very simple life style and the community is often as a "Happy People" because they are healthier than other as well as they are not emotionally stressed as they are living close to nature, surrounding by mountains, peace and fresh air.

Furthermore, The use of plants as a source of medicine is as old as human civilization in Hunza valley. Traditional knowledge of treating particular ailments has been preserved and passed down orally from generation to generation.

REFERENCES

1. Sun YH. Health concern, food choice motives, and attitudes toward healthy eating: The mediating role of food choice motives. *Appetite*. 2008 Jul 1;51(1):42-9.
2. Franco OH, Karnik K, Osborne G, Ordovas JM, Catt M, van der Ouderaa F. Changing course in ageing research: the healthy ageing phenotype. *Maturitas*. 2009 May 20;63(1):13-9.
3. Khaw KT. Healthy aging. *Bmj*. 1997 Oct 25;315(7115):1090-6.
4. Morley JE, Abbatecola AM, Argiles JM, Baracos V, Bauer J, Bhasin S, Cederholm T, Coats AJ, Cummings SR, Evans WJ, Fearon K. Sarcopenia with limited mobility: an international consensus. *Journal of the American Medical Directors Association*. 2011 Jul 1;12(6):403-9.
5. [Kieft-de Jong JC, Mathers JC, Franco OH. Nutrition and healthy ageing: the key ingredients. *Proceedings of the Nutrition Society*. 2014 May;73(2):249-59.]

7. Cristina NM, Lucia DA. Nutrition and Healthy Aging: Prevention and Treatment of Gastrointestinal Diseases. *Nutrients*. 2021 Nov 30;13(12):4337.
8. [Ganguly D, Goli S. Book Review: The Wheel of Health: The Source of Long Life and Health among the Hunza, by Wrench GT. Ganguly, D and Goli, S.(2019). Book Review of The Wheel of Health: The Source of Long Life and Health among the Hunza. *Demography India*. 2019 Aug 16;48(2).
9. Sadler MJ, Gibson S, Whelan K, Ha MA, Lovegrove J, Higgs J. Dried fruit and public health—what does the evidence tell us?. *International journal of food sciences and nutrition*. 2019 Aug 18;70(6):675-87.
10. Liu RH. Health benefits of fruit and vegetables are from additive and synergistic combinations of phytochemicals. *The American journal of clinical nutrition*. 2003 Sep 1;78(3):517S-20S.
11. S, Jurendic T, Sieber R, Gallmann P. Honey for nutrition and health: a review. *Journal of the American college of Nutrition*. 2008 Dec 1;27(6):677-89.
- 12.[Tucker KL. Dietary patterns, approaches, and multicultural perspective. *Applied physiology, nutrition, and metabolism*. 2010 Apr;35(2):211-8]
- 13.Gudivaka R, Schoeller DA, Kushner RF, Bolt MJ. Single-and multifrequency models for bioelectrical impedance analysis of body water compartments. *Journal of Applied Physiology*. 1999 Sep 1;87(3):1087-96
14. Manz F, Wentz A, Sichert-Hellert W. The most essential nutrient: defining the adequate intake of water. *The Journal of pediatrics*. 2002 Oct 1;141(4):587-92.
15. Hussain A, Shaban EA, Tariq M. Water Quality Assessment of Fresh Water Resources in Gilgit Baltistan. *Ann Agric Crop Sci*. 2022;7(3):1118..
- 16.Shlisky J, Bloom DE, Beaudreault AR, Tucker KL, Keller HH, Freund-Levi Y, Fielding RA, Cheng FW, Jensen GL, Wu D, Meydani SN. Nutritional considerations for healthy aging and reduction in age-related chronic disease. *Advances in nutrition*. 2017 Jan;8(1):17
17. Abbas Q, Qureshi R, Naqvi AU, Khan SW, Hussain I. Floristic inventory and ethnobotanical study of the Naltar valley (Karakoram Range), Gilgit, Pakistan. *Pak J Bot*. 2013 Jan 1;45:269-77.
18. Asif AF. Healthcare challenges in Gilgit Baltistan: The way forward. *Pakistan Journal of Public Health*. 2017;7(2):113-6.
19. Hebbelinck M. Vegetarian Nutrition, Physical Activity and Athletic Performance
20. Walter AM. Changing Gilgit-Baltistan: Perceptions of the recent history and the role of community activism. *EthnoScripts: Zeitschrift für aktuelle ethnologische Studiens*. 2014;16(1):31-49.
- 21.. Khan B, Abdukadir A, Qureshi R, Mustafa G. Medicinal uses of plants by the inhabitants of Khunjerab National Park, Gilgit, Pakistan. *Pak J Bot*. 2011 Oct 1;43(5):2301-10.

22. GÜZELDERE HK, AKSOY M. Live Longer, but How? Nutrition and Aging. *Geriatric Bilimler Dergisi*.;4(2):52-65
23. Barton J, Pretty J. What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental science & technology*. 2010 May 15;44(10):3947-55.
24. Yu Y. Healthy ageing in urban China: Governing the ageing population. *The Geographical Journal*. 2021 Mar;187(1):28-38.
25. Zhang J, Zhao A. Dietary diversity and healthy aging: A prospective study. *Nutrients*. 2021 Jun;13(6):1787..
26. Chacko SM, Thambi PT, Kuttan R, Nishigaki I. Beneficial effects of green tea: a literature review. *Chinese medicine*. 2010 Dec;5(1):1-9
27. Sobko T, Marcus C, Govoni M, Kamiya S. Dietary nitrate in Japanese traditional foods lowers diastolic blood pressure in healthy volunteers. *Nitric Oxide*. 2010 Feb 15;22(2):136-40.
28. Ikeda N, Saito E, Kondo N, Inoue M, Ikeda S, Satoh T, Wada K, Stickley A, Katanoda K, Mizoue T, Noda M. What has made the population of Japan healthy?. *The Lancet*. 2011 Sep 17;378(9796):1094-105.
29. Asan JK. Examining the cross-cultural differences that affect longevity globally and strategies that will enhance longevity in Nigeria. *HUMANUS DISCOURSE*. 2021 Aug 4;1(3).
30. Lim S. Eating a balanced diet: a healthy life through a balanced diet in the age of longevity. *Journal of obesity & metabolic syndrome*. 2018 Mar;27(1):39
31. Lee SH, Kim YB. Which type of social activities decrease depression in the elderly? An analysis of a population-based study in South Korea. *Iranian Journal of Public Health*. 2014 Jul;43(7):903
32. Ning MT, Sandra LC. The Role of Nutrition in Active and Healthy Ageing: For prevention and treatment of age-related diseases: evidence so far
33. Javanparast S, Baum F, Labonte R, Sanders D. Community health workers' perspectives on their contribution to rural health and well-being in Iran. *American journal of public health*. 2011 Dec;101(12):2287-92.
34. LM, Jacquez F, Bakar RC. Cultural health attributions, beliefs, and practices: Effects on healthcare and medical education. *The Open Medical Education Journal*. 2009 Aug 22;2(1).
35. Leininger MM. Leininger's theory of nursing: Cultural care diversity and universality. *Nursing science quarterly*. 1988 Nov;1(4):152-60.
36. Fisher EB, Fitzgibbon ML, Glasgow RE, Haire-Joshu D, Hayman LL, Kaplan RM, Nanney MS, Ockene JK. Behavior matters. *American journal of preventive medicine*. 2011 May 1;40(5):e15-30
37. TC, Brandt Jr EN, Baird MA. Health and behavior: the interplay of biological, behavioral, and social influences: summary of an Institute of Medicine report. *American Journal of Health Promotion*. 2002 Mar;16(4):206-19.