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Lifestyle Medicine in Clinical Practice — Integrating the Six Pillars for Better Health Outcomes

Authors:

Michał Robak

Independent Public Healthcare Center in Ostrów Wielkopolski, Limanowskiego 20/22
63-400 Ostrów Wlkp., Poland

<https://orcid.org/0000-0001-6318-4095>

Email: mrobak101r@gmail.com

Agnieszka Bajkacz

University Hospital (UH) in Wrocław, Borowska 213, 50-556 Wrocław, Poland

<https://orcid.org/0000-0002-2027-8216>

Email: agnieszkabajkacz99@gmail.com

Maciej Dudziński

Mazovian Provincial Hospital of St. John Paul II in Siedlce, 26 Księcia Józefa Poniatowskiego
Street, 08-110 Siedlce, Poland

<https://orcid.org/0009-0001-5059-0403>

Email: maciej.dudzinski99@gmail.com

Bartłomiej Kusy

Warszawski Uniwersytet Medyczny: Warszawa, PL

<https://orcid.org/0009-0000-8355-2262>

Email: bartlomiej.kusy99@gmail.com

Marcin Płonka

HCP Medical Centre ul. 28 Czerwca 1956 r. nr 194, 61-485 Poznań, Poland

<https://orcid.org/0009-0003-8141-1409>

Email: marcin.j.plonka@gmail.com

Martyna Różańska

University Hospital Wrocław, Borowska 213, 50-556 Wrocław, Poland

ORCID: 0000-0002-3351-7992

Email: martyna.ro899@gmail.com

Abstract

Background: Lifestyle Medicine is an evidence-based approach that helps prevent and treat chronic diseases through modifications in daily habits. It includes key pillars: nutrition, physical activity, restorative sleep, avoidance of harmful substances, stress management, and social relationships. These interconnected domains play a critical role in promoting long-term health and well-being.

Aim: To introduce the core principles of Lifestyle Medicine and present practical, evidence-based strategies for integrating them into routine patient care.

Methods: This narrative review synthesizes current research findings and official guidelines from leading health organizations, such as World Health Organization and the American College of Lifestyle Medicine. Literature review was conducted using PubMed database.

Keywords: Lifestyle Medicine, prevention, nutrition, physical activity, sleep, substance use, stress, social health, behavior change, patient counseling.

Introduction

The importance of lifestyle on overall human well-being is a paradigm in modern medicine.

The Lalonde Report, published in 1974 addressed that issue and pointed out four main determinants of health: lifestyle, environment, human biology and health care organization.[1]

Since then, a new era of health promotion has begun, and many studies emphasized lifestyle improvement as a way to achieve health improvement.[2] Among aforementioned health determinants, lifestyle contributes more to the risk of premature mortality than human biology and health care organization.[3][4] Healthy behaviors are possible to be implemented by any individual, no matter the age and therefore, they may contribute to longevity and maintaining health in old age.[5]

In order to prevent and treat chronic diseases by changing health habits, a new field of medicine has emerged- a Lifestyle Medicine. Rooted in ancient Greece, Lifestyle Medicine was popularized by founding American College of Lifestyle Medicine in 2004.[6] Traditionally, Lifestyle Medicine focuses on six “pillars” of healthy lifestyle: I) nutrition; II) physical activity;

III) restorative sleep; IV) avoidance of risky substances; V) stress management and VI) social relationships.[7]

Medical counseling and educating patients to incorporate healthy behaviors proposed by Lifestyle Medicine was shown to reduce the risk of depression[8], hypertension[9] or cardiovascular diseases.[10] It is also a way to manage those diseases and many others.

In this article, we want to briefly discuss each individual “pillar” of Lifestyle Medicine and present a variety of solutions on how to guide a patient through change in their lifestyle.

Nutrition

Excess body weight is affecting 2 billion adults and 340 million children worldwide.[11] The role of nutrition in maintaining metabolic balance and preventing obesity is undeniable.[12]

Unfortunately, there is no consensus about which diet is the best for human, but general rules for healthy eating are: a) avoiding processed foods; b) eating meals, that include mostly plants; c) restrict calory intake.[13] Red meat consumption is a risk factor of ischemic heart disease and should be limited.[14] There are specific diets, such as low-carbohydrate diet, low-fat/vegetarian diet or Mediterranean diet, all of which have their own benefits. For example, Mediterranean diet was shown to improve hepatic steatosis and insulin sensitivity, even without weight loss.[15] Also, it is not mandatory to follow only one dietary pattern. For cardiovascular disease prevention, the Mediterranean, DASH, and plant-based diets have all been proven to be highly beneficial.[16] For some people, especially diabetics, a proper nutrition is a medical therapy and should be individualized by health care professionals.[17]

Nutrition care process can be difficult for a patient. It requires changing habits, can be stressful and unpleasant. To overcome this problem, strong evidence supports use of cognitive behavioral therapy and other behavior change theories and models in order to maintain healthy eating habits.[18] Dietetics practitioners are advised to use those techniques for an effective counseling.

Theoretical knowledge is important, but can be insufficient for patients’ compliance. To address that issue, a Culinary Medicine emerged as a field of medicine and it is a practical tool in nutrition counseling.[19] Incorporation of Culinary Medicine training enables health care professionals to propose accessible information for their patients about meal preparation, specific dishes and strategies in choosing ingredients.[20]

Physical Activity

It is estimated, that physical inactivity is the fourth leading cause of death worldwide. Decrease in sedentary behavior would greatly decrease economic burden on societies and health

systems.[21] Regular daily activity is crucial for healthy aging and preventing hypertension, obesity or insomnia.[22] It is worth noting, that physical activity also reduces risks of numerous cancers. That is bladder, breast, colon, endometrial, esophageal, renal and gastric cancers.[23] “WHO Guidelines on Physical Activity and Sedentary Behaviour” provide evidence-based recommendations on the amount of exercise for health benefits.[24] Many subpopulations have their own set of advice, but focusing on healthy adults, it is recommended that: 1) “All adults should undertake regular physical activity.” 2) “Adults should do at least 150– 300 minutes of moderate-intensity aerobic physical activity; or at least 75–150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week, for substantial health benefits.” 3) “Adults should also do muscle-strengthening activities at moderate or greater intensity that involve all major muscle groups on 2 or more days a week, as these provide additional health benefits.” 4) “Adults may increase moderate-intensity aerobic physical activity to more than 300 minutes; or do more than 150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week for additional health benefits.” Additionally, it is noted, that any physical activity is better than doing none. Also, the frequency and intensity of physical activity should be initially small and then, gradually increased over time. A good practice for aerobic training is walking. It was estimated, that around 10,000 steps per day may lower the risk of all-cause mortality for people with pre-diabetes and diabetics.[25] Aside from WHO guidelines, some research shows the superiority of strength training over aerobic exercise. It is especially important for improving glycaemic control in people with normal-weight type 2 diabetes.[26] Strength training also prevents sarcopenia in older patients.[27] But only when combined, aerobic exercise and resistance training have the most impactful effect on cardiovascular risk factors.[28]

Sleep

Around one third of a person’s life is occupied by sleep.[29] Recovery during night is mandatory for human to maintain physical and mental health.[30] Unfortunately, sleep quality is decreasing in modern societies. Light at night exposure is one of the causes of poor sleep quality [31] as well as stressful lifestyle and noisy environment, that aggravate sleep problems. Insufficient sleep leads to a number of health problems (e.g., obesity,[32] depression [33]). Although less common, excessive sleep is also contributing to some health issues. Cognitive

decline,[34] headaches [35] and overall increased mortality [36] are effect of excessive daytime and nighttime sleep.

A certain set of behaviors, that promotes sleep quality, was formed and called “sleep hygiene”.[37] These include: avoiding caffeine (at least consume it 8.8h prior to bedtime [38]), avoiding nicotine and alcohol, reducing bedroom noise, sleeping in regular hours and avoiding daytime naps. Leah et al. suggest, that application of sleep hygiene to nonclinical adults is not fully effective.[39] For example, assigning regular sleep schedules do not improve sleep quality. Also, napping during daytime do not have a substantial impact on nocturnal sleep.

Amount of sleep for a healthy adult is between seven and nine hours.[40] In some cases it may be different, so an evaluation of sleep needs is required. A sleep counseling and education is an important aspect of helping patients to adjust their sleeping patterns to their lifestyle for better health.[41]

Substance Use

Lifestyle medicine predominantly mentions nicotine abuse (in form of tobacco smoking and vaping) as a public health problem. Nicotine is one of the most available and addictive psychoactive substances and tobacco smoking results in over five million deaths each year.[42] Many cardiovascular diseases are caused and aggravated by smoking.[43] Smoking cessation is a great challenge both for patient and for a physician. Different types of treatment can be proposed, but according to research, utilizing education plus prescription drugs (e.g., bupropion, varenicline) is the most effective way to quit smoking.[44]

Alcohol is another risk factor for global disease. Globally, in 2016, among the population aged 15-49 years, 3.8% deaths of female and 12.2% deaths of male aged were caused by alcohol abuse.[45] DJ Nutt in his analysis of drugs use in the UK, ranked a selection of drugs according to their harm to the user and harm to others. Alcohol was placed first when it comes to social harm. And the score of harm to user was lower than the score of methamphetamine, heroin and crack cocaine, placing it at number four spot.[46]

Substance use disorders can be prevented by patient education. Dramatic results of overdosing and acute poisoning should be treated by professionals and followed by harm reduction counseling.[47]

Stress Management

Stress response is a physiological phenomenon.[48] It is important to understand, that stress cannot be avoided entirely. What is a pathology is a chronic stress, that is highly prevalent in modern societies and is a cause of lifestyle-related mental health diseases, such as depression and anxiety.[49] To some extent, all people are exposed to chronic stressors, but not all of them

suffer from stress-related health problems. “Stress resilience” is a neurobiology phenomenon that tries to explain, why some people are more susceptible to health impairments caused by stress while other people maintain their mental health intact.[50]

Chronic stress is not only a risk factor for mental health diseases. It also puts much strain on human body. In cancer patients, chronic stress establishes a metastasis-promoting microenvironment, which is associated with increased risk of metastasis and poor survival.[51] Chronic stress favors bone loss and leads to osteoporosis. Cardiovascular system is also vulnerable to prolonged stress.[52] Migraines and tension-type headaches are closely related to chronic stress as well.[53]

There are no guidelines for stress management. Despite that, there are some studies that try to propose evidence-based solutions for prevention of stress-related disorders. Mindfulness is an example of such a solution. Mindfulness practices are numerous and include: sitting meditation, body scan meditation, yoga or acceptance training.[54][55] Mindfulness is moderately effective in reducing stress, but more research is needed to evaluate efficacy of each individual mindfulness technique.[56] Other preventive measures for stress include: nature contact,[57] laughter [58] and positive thinking.[59]

Social relationships

Loneliness, defined as a perceived social isolation is a common feeling, experienced occasionally by 80% of people under 18 years of age and 40% of adults over 65 years of age. More persistent feeling of loneliness affects around 15-30% of the general population.[60] Thorough studies, especially during COVID-19 pandemic, showed that the lack of meaningful, intimate social connections correlates with mental health issues.[61][62] Furthermore, social isolation is a risk factor of coronary heart disease and stroke.[63] Loneliness is a result of deficiency in social relationships and among different kinds of relationships, friendships are thought to be the greatest determinants of subjective social fulfillment. Both greater quantity of friends and greater quality and closeness of friendships are connected to better self-reported mental health.[64] Nevertheless, Chun et al. showed, that both too few and too many (around 5) close friends in children are associated with more ADHD symptoms and lower cognition.[65] Romantic relationship is another kind of important social connection. Research suggests, that people in committed romantic relationships are less prone to engage in risky behavior (like

risky substance use or numerous sexual partners), than single people. Those people also report greater well-being than singles.[66]

Social networking sites greatly contribute to creating and maintaining modern-life social relations. However, use of these sites has mixed outcomes. Depending on frequency and number of network friends, some individuals give positive feedback and other users report higher levels of depression and anxiety. Social network sites are full of risk and benefits to mental health and should be used with caution.[67]

The need for social relationships is present in all individuals to an extent.[68] The promising tool to address those needs is “Social Prescribing”. Social prescribing is a person-centred approach that enables primary care professionals to refer patients to non-clinical community services (like art therapy or exercise groups) to support their mental health. Evidence for social prescribing is limited in volume and needs further research.[69]

Summary

Lifestyle Medicine is a field of medicine that focuses on prevention. Many healthy people could benefit from its protective measures against lifestyle- related diseases such as obesity, hypertension, depression and cancer.

The six pillars of Lifestyle Medicine are: nutrition, physical activity, sleep, avoidance of risky substances, stress management and social relationships. Those pillars are interconnected. One pillar strengthens the others. Similarly, a weak spot in one pillar may be the cause of further vulnerabilities in other pillars. Good sleep helps to maintain a healthy diet.[70] Engaging in physical activity reduces stress.[71] Positive social experiences decrease the risk of addictive behaviors.[72]

Lifestyle Medicine endows health care providers with knowledge and counselling skills. Core competencies for prescribing Lifestyle Medicine were updated in 2022 and can be used for high quality, patient-centered clinical practice.[73]

Author’s Contribution

Conceptualization, Michał Robak, Agnieszka Bajkacz, Maciej Dudziński, Bartłomiej Kusy;

Methodology, Marcin Płonka, Martyna Róžańska;

Software, Bartłomiej Kusy;

Check, Agnieszka Bajkacz, Maciej Dudziński and Bartłomiej Kusy;

Formal analysis, Marcin Płonka;

Investigation, Martyna Róžańska;

Resources, Agnieszka Bajkacz;

Data curation, Michał Robak;

Writing - rough preparation, Agnieszka Bajkacz, Michał Robak, Martyna Róžańska;

Writing - review and editing, Maciej Dudziński, Bartłomiej Kusy, Marcin Płonka;

Visualization, Michał Robak;

Supervision, Marcin Płonka;

Project administration, Maciej Dudziński, Martyna Róžańska;

All authors have read and agreed with the published version of the manuscript.

Conflict of interest

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