



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

Available online at: <http://www.iajps.com>

Review Article

THE IMPACT OF LIFESTYLE MODIFICATIONS ON MEDICAL CONDITIONS

Khaloud Ali alghannam¹, Houriah Abdullah hussien Tarmoukh¹, Nesreen Mohammad Hassan ALOsaief¹, Zainab Ibraheem Al Fadhel¹, Zahra Ali AL Obaid¹, Mawaheb Baqer Al hashem¹, Basma Ali Alobaidi¹, Aateka Hassan Alaali¹, Naeemah Hussain Al Qanbar¹, Fatimah Ali Alawami¹, Kholoud Hassan ALMarhoun¹, Jalila Salman Al Shurfa¹, Rawan Ghazi Al Hammad², Fedaa Ahmed Al-Zaher¹, Amal Ali Alsadiq¹

¹ Imam Abdulrahman Bin Faisal Hospital National Guard - Dammam

² King Abdulaziz National Guard Hospital - Al Ahsa

Article Received: June 2019

Accepted: July 2019

Published: August 2019

Abstract:

Background: Lifestyle modifications profoundly impact managing and preventing internal medicine conditions, including cardiovascular diseases and Type 2 diabetes mellitus. These modifications encompass changes in diet, physical activity, and other habits contributing to overall health improvement. The following sections detail the specific impacts of lifestyle changes on these conditions.

Aim: To Review the impact of lifestyle modification on medical conditions and chronic disease.

Methods: This is a comprehensive review of lifestyle modification's impact on chronic disease. The PUBMED and Google Scholar search engines were the main databases used for the search process, with articles collected from 1990 to 2019. This thorough review ensures that the information presented is reliable and up-to-date.

Conclusion: Lifestyle changes are vital for managing chronic diseases, necessitating a holistic approach that includes dietary changes, physical activity, and behavioral adjustments. Education, social support, and awareness are crucial for encouraging these modifications, ultimately improving quality of life and reducing healthcare costs.

Keywords: Education and Awareness - Dietary Adjustments - Physical Activity - Behavioral and Habitual Changes - Mental Health and Stress Management - Environmental and Social Support

Corresponding author:

Khaloud Ali alghannam,

Imam Abdulrahman Bin Faisal Hospital National Guard - Dammam

QR code



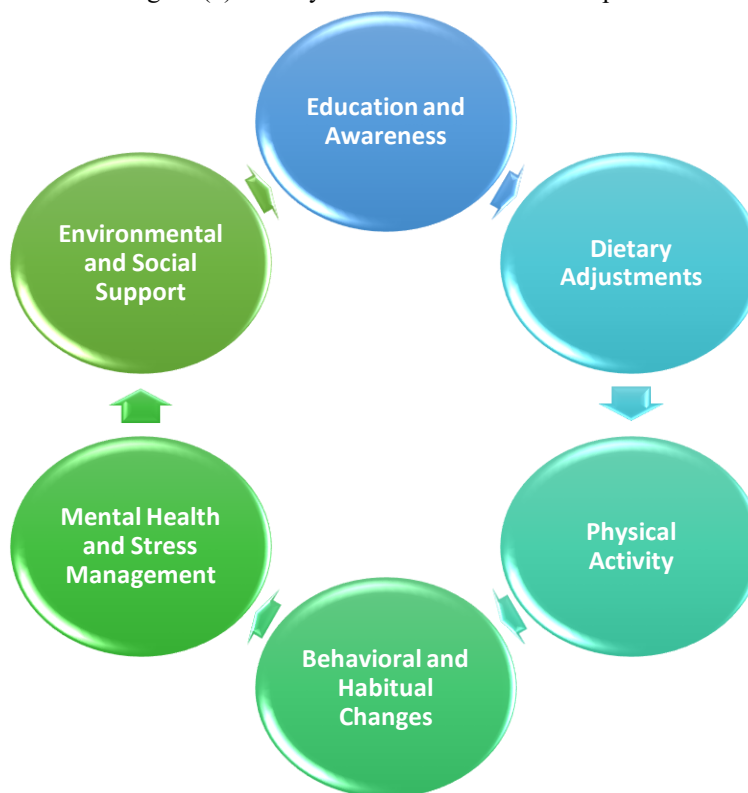
Please cite this article in press Khaloud Ali alghannam et al., *The Impact Of Lifestyle Modifications On Medical Conditions*, Indo Am. J. P. Sci, 2019; 06(08).

INTRODUCTION:

Lifestyle modifications have emerged as a critical strategy in managing various medical conditions, particularly chronic diseases. Adopting a comprehensive approach that encompasses dietary changes, physical activity, and behavioral adjustments

is essential. These modifications can significantly impact managing and preventing various chronic diseases, including hypertension, diabetes, and systemic sclerosis, by enhancing the quality of life and reducing healthcare costs.(1)

Figure (1): Lifestyle modifications related aspect

**Education and Awareness**

Modifying lifestyle through education and awareness is a critical strategy for controlling various medical conditions, particularly chronic diseases such as diabetes and hypertension. Education programs that focus on healthy lifestyle modifications have shown significant effectiveness in improving health outcomes. For instance, interactive educational sessions aimed at teaching participants about healthy lifestyle changes have been linked to better blood pressure control among hypertensive individuals.(2) This approach emphasizes the importance of adopting a healthful diet, which is essential for managing conditions like cardiovascular disease and diabetes. (3) Diabetes education programs, particularly those tailored to both patients and healthcare providers, have demonstrated positive outcomes in managing type 2 diabetes. These programs utilize a modified curriculum that includes individual counseling,

educational talks, and practical demonstrations, which enhance participants' understanding of diabetes management and promote better health practices. (4) Such comprehensive education not only improves patients' knowledge but also encourages adherence to dietary practices and regular monitoring of health metrics, which are vital for effective disease management.

Various tools and programs have been developed to facilitate this process, leveraging technology and structured educational interventions. One of the most promising avenues is the use of mobile computing tools, such as smartphones and PDAs, which empower individuals with chronic conditions by providing them with the necessary information and resources to manage their health effectively. These tools enable users to monitor their health metrics, analyze their lifestyle choices, and receive tailored feedback,

thereby fostering a sense of responsibility for their health management. (5) In addition to mobile tools, structured educational programs play a vital role in enhancing patient knowledge and motivation. Diabetes management education programs, for instance, have been shown to significantly influence patients' self-awareness and their ability to implement life-changing interventions. These programs utilize media to enhance educational benefits, thereby improving patient satisfaction and engagement in their health management. (6) Similarly, the Chronic Disease Self-Management Program (CDSMP) offers workshops that equip individuals with practical techniques for managing their conditions, focusing on essential aspects such as exercise and nutrition. (7) Moreover, nutrition education programs are crucial in teaching individuals about healthy eating habits, which are fundamental in preventing and managing chronic diseases. These programs often involve community engagement and service learning, making them more impactful and relatable to participants. (8) the integration of wearable health care monitoring systems can provide continuous feedback on health metrics, further empowering patients to make informed lifestyle choices. This constant monitoring aligns with the goal of prevention rather than treatment, ultimately improving the quality of life for individuals with chronic conditions. (5) a multifaceted approach that combines technology, structured educational programs, and culturally relevant resources is essential for fostering awareness and facilitating lifestyle modifications that can effectively control medical conditions. By leveraging these tools, individuals can gain the knowledge and skills necessary to improve their health outcomes and manage chronic diseases more effectively.

Dietary Adjustments

Dietary adjustments play a crucial role in lifestyle modification aimed at controlling medical conditions, particularly in the context of obesity and related health issues. A structured lifestyle modification program, which includes dietary changes and supervised physical activity, has been shown to significantly reduce body weight and improve health outcomes in obese children. (9) For instance, a study involving overweight Czech children demonstrated that a four-week intervention focusing on reducing energy intake to age-matched optimum levels led to notable improvements in metabolic markers, including a decrease in lipoprotein-associated phospholipase A2 (Lp-PLA2), a marker linked to inflammation and atherosclerosis risk. (9, 10) The impact of dietary adjustments extends beyond weight loss; it also

encompasses improvements in body fat and body mass index (BMI). Participants in the intervention exhibited significant reductions in body fat and BMI, which are critical for managing various medical conditions. Moreover, the intervention participants reported significant improvements in their nutrition measures, indicating that dietary adjustments are integral to effective lifestyle modification. This improvement in nutrition not only aids in weight reduction but also contributes to better overall health, as evidenced by the significant changes in clinical measures such as blood pressure and lipid profiles. In addition to physical health benefits, dietary adjustments also positively influence psychological well-being. Participants learned to make better lifestyle choices, which included strategies for improving sleep and reducing stress, leading to a decrease in reported sleep and stress disorders. (1, 10) This holistic approach underscores the interconnectedness of diet, physical activity, and mental health in lifestyle modification. Furthermore, dietary adjustments are particularly relevant in the context of diabetes management. Nutritional advice and education are fundamental components of diabetes treatment, emphasizing the need for lifestyle modifications to prevent and control the condition. (11) By integrating dietary changes with exercise and other health-promoting behaviors, individuals can significantly reduce their cardiovascular risk factors and improve their overall health status. In summary, dietary adjustments are a vital aspect of lifestyle modification for medical condition control, leading to significant improvements in weight, body composition, metabolic markers, and overall health outcomes. (9)

Physical Activity

Physical activity plays a crucial role in lifestyle modification aimed at controlling medical conditions, particularly chronic diseases. Engaging in structured physical activity not only enhances physical fitness but also contributes significantly to weight management and overall health improvement. For instance, a therapeutic lifestyle-modification intervention that included a 40-hour educational course on nutrition and physical activity demonstrated significant improvements in participants' physical activity behaviors, which were directly linked to better management of chronic disease risk factors. The structured nature of supervised physical activity ensures that participants are not only physically active but also receive guidance on how to maintain these behaviors long-term. Moreover, the impact of physical activity on nutrition improvement cannot be overlooked. Participants in lifestyle modification

programs often report enhanced dietary choices alongside increased physical activity. This dual approach is essential, as poor nutrition and sedentary behavior are significant contributors to chronic disease development. For example, significant changes in nutrition measures were observed in participants who engaged in physical activity, highlighting the complementary relationship between diet and exercise in managing health conditions. The reduction of body mass index (BMI) is another critical outcome associated with increased physical activity. Studies have shown that participants in lifestyle interventions experience significant reductions in BMI, which correlates with improved clinical measures such as body fat and waist circumference. These changes are vital for reducing the risk factors associated with chronic diseases, including cardiovascular disease and diabetes. (1, 9) physical activity is a fundamental component of lifestyle modification for medical condition control. It not only aids in weight loss and improves physical fitness but also enhances nutritional choices and reduces chronic disease risk factors. The evidence supports the integration of physical activity into comprehensive lifestyle interventions to achieve optimal health outcomes.

Behavioral and Habitual Changes

Behavioral changes are key for managing medical conditions. These changes are essential for improving health outcomes, particularly in managing chronic diseases such as diabetes, cardiovascular diseases, and chronic kidney disease (CKD). (12-14) One of the foundational strategies for facilitating these changes is behavior modification, which involves altering habits to support long-term health goals, such as weight loss and improved dietary choices. (15) This approach is particularly relevant in the context of chronic disease management, where lifestyle choices significantly impact disease progression and overall health. For instance, intentional behavioral interventions, such as increasing physical activity and modifying diet, have been shown to promote health and mitigate the effects of chronic conditions. (16, 17) Goal-setting is another critical component that aids in behavior change. By establishing clear, achievable goals, individuals can create a structured pathway for modifying their lifestyles. This process is enhanced through good communication and collaboration between healthcare providers and patients, which fosters an environment conducive to change. (18) Effective communication ensures that patients understand the importance of their lifestyle choices and feel supported in their efforts to make necessary changes. In the context of CKD, for example, nurse practitioners play a vital role

in coaching patients on lifestyle self-management. This coaching not only provides patients with the knowledge they need to make informed decisions but also encourages them to adopt healthier habits that can slow the progression of their disease. (14) Additionally, web-based applications have been developed to support these efforts, offering tools and resources that facilitate behavioral and habitual changes necessary for effective medical condition control. Ultimately, the integration of behavioral interventions, goal-setting, and effective communication creates a comprehensive framework for lifestyle modification. This framework empowers patients to take charge of their health, leading to improved management of chronic diseases and better overall health outcomes. By focusing on these elements, healthcare providers can significantly enhance the effectiveness of lifestyle interventions, ensuring that patients not only initiate but also sustain the necessary changes for long-term health benefits.

Mental Health and Stress Management

Mental health and stress management are crucial elements in altering lifestyle to manage and control medical conditions, significantly influencing behaviors that can lead to improved health outcomes. A lifestyle modification program, which includes educational courses, has been shown to effectively reduce sleep and stress disorders by promoting better nutrition and physical activity. (10) Participants in such programs often experience changes in lifestyle behaviors within a short period, typically four weeks, primarily due to decreases in body mass index (BMI) and increases in exercise. The impact of chronic stress further underscores the relationship between mental health and lifestyle choices. Chronic stress can impair an individual's ability to adapt, leading to unhealthy nutritional behaviors that hinder lifestyle modifications. (19) Dietary modifications, which involve altering food choices and nutritional behaviors, can significantly influence mental health and stress management by affecting neuroendocrine processes related to stress adaptation. This highlights the importance of addressing both mental health and dietary habits in lifestyle modification programs. Moreover, cognitive behavioral interventions have been identified as effective strategies for managing stress, which can lead to significant reductions in blood pressure and other cardiovascular risk factors. (20) These interventions are often more effective than single-component approaches, emphasizing the need for a comprehensive strategy that includes multiple facets of health management. In addition to structured programs, self-care and social support are critical

components of successful lifestyle modifications. Emphasizing individual responsibility in managing mental health can empower patients, particularly those with chronic conditions like coronary artery disease. (21) The inclusion of support members in lifestyle modification programs enhances adherence to lifestyle changes, providing necessary encouragement and accountability. This social support network can significantly improve patient outcomes by fostering a sense of community and shared responsibility. Finally, techniques such as meditation and stress reduction training are integral to managing mental health within lifestyle modification programs. These practices not only improve overall health outcomes but also help participants develop resilience against stressors, further facilitating positive lifestyle changes.

Environmental and Social Support

Environmental and social support play crucial roles in facilitating lifestyle modifications necessary for managing medical conditions. A supportive environment can significantly influence individuals' ability to engage in healthy behaviors. Research indicates that creating environments that encourage physical activity and social interactions can enhance individuals' motivation to adopt healthier lifestyles. (22) For instance, the National Heart Foundation's initiatives highlight how local neighborhoods can be designed to promote active living, thereby supporting individuals in their health journeys. Social support, encompassing family, friends, and community groups, is equally vital. Family support has been shown to significantly impact diabetes management, with studies indicating that patients who receive strong familial backing are more likely to maintain glycemic control. (23, 24) However, it is essential to balance this support, as excessive control from family members can hinder autonomy and lead to negative emotional outcomes. Moreover, group peer support has been identified as a powerful motivator for behavior change. Patients participating in group interventions report positive effects on their lifestyle modifications, underscoring the importance of social interactions in sustaining health behavior changes. (25) Community support groups provide a platform for shared experiences, which can enhance emotional wellness and foster a sense of belonging among individuals managing chronic conditions. (26) Mental support, particularly for men aged 40-64, has also been linked to improved health behaviors, suggesting that psychological aspects of support are critical in lifestyle modifications. (27) This aligns with the broader understanding that addressing emotional health is essential for effective chronic disease management.

Furthermore, health information support has been shown to positively influence health behaviors among women aged 40-64, indicating that access to relevant health information can empower individuals to make informed lifestyle choices. In summary, both environmental and social support systems are integral to promoting lifestyle modifications for managing medical conditions. By fostering supportive environments and leveraging social networks, individuals are more likely to engage in and sustain healthy behaviors, ultimately leading to better health outcomes. The interplay of these factors highlights the need for comprehensive strategies that incorporate both environmental design and social support mechanisms in health interventions

CONCLUSION:

Lifestyle changes are vital for managing chronic diseases, necessitating a holistic approach that includes dietary changes, physical activity, and behavioral adjustments. Education, social support, and awareness are crucial for encouraging these modifications, ultimately improving quality of life and reducing healthcare costs.

REFERENCES:

1. RL DH, Salberg A, Merrill R, Ohmine S. The Behavioral and Clinical Effects of Therapeutic Lifestyle Change on Middle-aged Adults. *Preventing Chronic Disease*. 2005;3(1):05-.
2. Rigsby BD. Hypertension improvement through healthy lifestyle modifications. *ABNF Journal*. 2011;22(2).
3. Maccoby N. Health Behavior Change via Community Education. *Improving Drug Safety—A Joint Responsibility*: Springer; 1991. p. 207-12.
4. Tan A, Yong L, Wan S, Wong M. Patient education in the management of diabetes mellitus. *Singapore medical journal*. 1997;38(4):156-60.
5. Mathews AG, Butler DR, Love DJ. Mobile Computing Tools as a Medium to Educate and Empower people with Chronic Conditions. *Innovations and Advanced Techniques in Computer and Information Sciences and Engineering*: Springer; 2007. p. 339-43.
6. Ghosh K, Ramakrishnan T, Chawla S. Cues from Doctor: Role of Media in Reinforcing Life Changing Interventions. 2012.
7. Ory MG, Ahn S, Towne SD, Smith ML. Chronic Disease Self-Management Education: Program Success and Future Directions. In: Malone ML, Capezuti EA, Palmer RM, editors. *Geriatrics Models of Care: Bringing 'Best Practice' to an*

- Aging America. Cham: Springer International Publishing; 2015. p. 147-53.
8. Roofe NL. Improving families' nutrition knowledge through service learning. *Journal of allied health*. 2011;40(4):194-8.
 9. Motykova E, Zlatohlavek L, Prusikova M, Lanska V, Ceska R, Vasickova L, et al. Lifestyle modification induced weight loss and changes of cardiometabolic risk factors including lowering of inflammatory response in obese children. *Neuro Endocrinology Letters*. 2011;32:55-9.
 10. Merrill R, Aldana S, Greenlaw R, Diehl H, Salberg A. The effects of an intensive lifestyle modification program on sleep and stress disorders. *Journal of Nutrition Health and Aging*. 2007;11(3):242.
 11. Weitgasser R. Life-style modification. *Acta Medica Austriaca*. 2004;31(5):160-1.
 12. Dennis SM, Zwar N, Griffiths R, Roland M, Hasan I, Powell Davies G, et al. Chronic disease management in primary care: from evidence to policy. *Medical Journal of Australia*. 2008;188:S53-S6.
 13. Nuovo J, Nuovo J. Overview of chronic disease management. *Chronic Disease Management*. 2007:3-8.
 14. Cijssouw R, editor Webbased Lifestyle Self-Management For Chronic Kidney Disease Patients. *Medicine 20 Conference*; 2010: JMIR Publications Inc., Toronto, Canada.
 15. Wing RR. Treatment of Obesity Through Changes in Lifestyle. *Clinical Research in Diabetes and Obesity: Diabetes and Obesity*. 1997:343-56.
 16. Schneiderman N, Antoni MH, Penedo FJ, Ironson GH. Psychosocial-Behavioral interventions and chronic disease. *Handbook of behavioral medicine: Methods and applications*. 2010:989-1007.
 17. Clark NM, Valerio MA, Houle CR. The Impact of Behavioral Interventions in Public Health. *Handbook of Behavioral Medicine: Methods and Applications*. 2010:383-95.
 18. Davies N. Healthier lifestyles: Behaviour change. *Nursing Times*. 2011;107(23):20-3.
 19. Waladkhani A, Hellhammer J. Dietary modification of brain function: effects on neuroendocrine and psychological determinants of mental health-and stress-related disorders. *Advances in Clinical Chemistry*. 2008;45:99-138.
 20. Spence JD, Barnett PA, Linden W, Ramsden V, Taenzer P. Lifestyle modifications to prevent and control hypertension. 7. Recommendations on stress management. Canadian hypertension society, canadian coalition for high blood pressure prevention and control, laboratory centre for disease control at health canada, heart and stroke foundation of canada. *CMAJ: Canadian Medical Association Journal*. 1999;160(9):S46.
 21. Rutledge JC, Hyson DA, Garduno D, Cort DA, Paumer L, Kappagoda CT. Lifestyle modification program in management of patients with coronary artery disease: the clinical experience in a tertiary care hospital. *Journal of Cardiopulmonary Rehabilitation and Prevention*. 1999;19(4):226-34.
 22. Dunn S, Wright C, Cox R, Atkinson R, MacDougall C. Creating Supportive Environments for Physical Activity: Encouraging Walking in the 21st Century. Australia. 2001.
 23. Blankfeld DF, Holahan CJ. Family support, coping strategies, and depressive symptoms among mothers of children with diabetes. *Journal of Family Psychology*. 1996;10(2):173.
 24. Rodriguez-Moran M, Guerrero-Romero J. Importance of family support in the control of glycemia. *Salud publica de Mexico*. 1997;39(1):44-7.
 25. Dhanapalaratnam R, Fanaian M, Harris MF. Lifestyle intervention: a study on maintenance in general practice. *Australian family physician*. 2011;40(11):903-6.
 26. Ghazali A, Tretiakov A, Hunter I. Knowledge construction in online health community support groups. 2009.
 27. Takahashi K, Kudo K, Yamada Y, Shao L, Ishikawa H, Fukao A. Relationship between health behavior and social support for the prevention of lifestyle-related diseases. [Nihon Koshu Eisei Zasshi] *Japanese Journal of Public Health*. 2008;55(8):491-502.