

Examination of the Effectiveness of Health Education Programs in Preventing Chronic Diseases

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Abstract

Objectives: Chronic diseases such as cancer, cardiovascular diseases, metabolic dysfunctions, infectious diseases, HIV and other noncommunicable diseases continue to account for increased rate of mortality. Studies have revealed that in many emerging economies, there are less educated individuals who are very poor and live very passive or sedentary lifestyle constantly abusing the use of tobacco.

Design and settings: These unhealthy habits can lead to a lot of health conditions and economic hardship. This behavior is linked to increased availability and access to unhealthy food, tobacco and poor educational programs within the society.

Methodology: Extensive literature search was conducted to find published articles on the internet that were involved in health education and chronic diseases. An organized search of MEDLINE/PubMed, ProQuest, Embase, Scopus, Google Scholar and Cochrane were conducted based on suitable synonyms and keywords. One researcher independently conducted the literature search and review.

Results: Advancement in technology, urbanization and synthetic food preservatives and additives continues to significantly contribute to these unhealthy behaviors. In the developed countries, rapid advancement in technology has resulted into increased incidence of chronic diseases.

Conclusion: This review is focused on providing a general overview on the effectiveness of health education programs in the prevention of chronic diseases.

Keywords: Chronic diseases; Health; Education; Intervention; Lifestyle.

Introduction

Chronic diseases such as cardiovascular diseases, obesity, diabetes and cancer account for 60% of all early death across the globe [1]. Chronic health conditions can be caused by lack of physical activity and exercise; thus, regular exercise and good diet will help to curb several of these chronic diseases and health conditions [2]. Health education programs help to promote good lifestyles among citizens such as cycling, swim-

ming and walking and reduce unhealth lifestyles like smoking which has been attributed to premature death caused by stroke and ischemic heart disease. According to World Health Report 2008, it has been estimated that death from unhealthy lifestyle like tobacco smoking will result into rise in death cases from 5.4 million in the year 2004 to 8.3 million by the year 2030. Therefore, there is urgent need to increase health education

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promotion programs such as smoking cessation programs or smoking prevention measures as to curb this scourge. Also, excess consumption of alcohol can lead to liver damage, mental issues, cancer and reproductive dysfunction [3]. The effectiveness and implementation of health promotion programs for disease prevention can be on good healthy diet, improving physical activity, improving non-smoking policies, encouraging low alcohol consumption, stress management, increasing awareness to access to preventive health facilities, housing, active ageing, age-friendly environment, social integration, and improving mental illness involving key elements such as raising awareness about nutrition, promoting a healthy diet that includes fruit and vegetables, heightening awareness about the effects of a sedentary lifestyle, creating safe recreational areas for walking cycling, or swimming, promoting physical activity for children and older persons, raising awareness about the risks of smoking, enforcing smoking bans in public areas, treating addiction through rehabilitation programs, controlling alcohol consumption, developing legal frameworks for a better work-life balance, providing counselling, building awareness about chronic disease prevention, getting early treatment of diseases that may become chronic, mainstreaming into health policies, creating opportunities for participation, promoting social inclusion, ensuring provision of safe care at home and in care homes, ensuring provision of affordable lifetime housing, setting up services to adapt houses to the needs of all age groups, engaging in age-friendly urban planning, providing programs to prevent and treat accidents and falls, providing support for family relationships, providing opportunities to strengthen intergenerational, non-family relationships, promoting community activities for senior citizens, preventing elderly abuse, violence and crime, providing access to health prevention measures, treating chronic diseases, managing dementia patients, providing care for patients suffering from delirium, and treating depression. Health education programs have been utilized for various health interventions such as childhood asthma, accident prevention, oral health, breast feeding, sexual health and child nutrition and education [4]. Showed that cysticercosis and Taeniasis are diseases caused by parasite *Taenia solium* between pig and humans through the environment. The diseases are known to cause disabilities and economic loss, thus health education programs for proper hygiene, sanitation, pig management and pork consumption will help to reduce the burden of the diseases. Through implementation research, the authors designed health education intervention in Burkina Faso with high level of *T. solium* infections. From their study, it was discovered that drinking unboiled water and open defecation contributed significantly to the spread of the diseases. The lack of knowledge concerning the diseases based on the transmission of the parasite, lack of public sensitization, perceived financial barriers to the implementation of control measures, and lack of self-efficacy towards control of the parasite were emphasized by the education interventional program that discourages open defecation and encourages drinking safe water.

Reported that the major cause of death across the globe are chronic diseases [5]. These diseases are cancer, heart disease, stroke, respiratory diseases, diabetes, metabolic, and renal diseases. The increase in the incidence of these diseases has also been linked to unhealthy lifestyle and diets such as sedentary physical activity, poor feeding habits, and lack of access to quality health care system. Interventions which are evidence based are really very effective in preventing and modifying the risk factors which include measures to enhance physical

activity, reduce tobacco intake, and improved feeding habits. Interventions are public policy development on environment, food composition, tobacco regulation, advertisement banning, and taxation; institutional based health promotion like school-based programs, community education, workplace health promotion, public awareness programs and training; individual access to counselling, screening, immunization and chemoprophylaxis [6]. Reported the strategies and barriers in the promotion of self-efficacy using traditional education for patients with chronic diseases. From the study, the author discovered that self-efficacy barriers are health support, access and literacy and the strategies for promoting self-efficacy include telehealth, social media, self-management programs, gaming and mobile applications. The author suggested that new intervention can be improved chronic disease condition with self-efficacy and traditional education with patients through cost reduction and enhanced treatment adherence. Several techniques, information and skills, on self-care and management for chronic diseases can be provided as educational programs to empowers patients' health.

Reported that in low- and middle-income countries, there is steady rise in the incidence of cardiovascular diseases as a result of increased contribution of risk factors and poor behavior [7]. The primary interventional strategies for health promotion are to reduce risk factors among individuals. Therefore, the authors carried out the study to assess health promotion effectiveness on children's attitude and mother's behavior, knowledge and practice regarding physical activity and diets using a community-based peer education and trials. From their findings, they discovered that many mothers have good behavior, knowledge and practice regarding physical activity and diets. Also, they discovered that area of intervention had increased enhancement of children's physical activity and diet. With this knowledge regarding interventional improvement, there is need to expand the contribution and support of volunteers, health assistants, paramedics, health workers and local women. The authors concluded that many of the chronic health conditions can be prevented with community-based interventions, health education promotion and counseling. Improving the health status is the ultimate goal of health education intervention [8]. Showed that primary healthcare providers are very important in the strategy to prevent chronic health diseases across the world. These health care providers are involved in health promotion skills and health education promotion. The authors carried out a study to health care professionals and their role in health promotion and skill acquisition. From their study, it was discovered that more than half of the health care providers practice health promotion skills and education. They stressed the need for continuing educative training for health care providers for professional development such as Ph.D. public health education and other advanced level science expertise.

Reported that educational programs for public health disease prevention and self-management is important in the management of chronic diseases [9]. In their study using PRISMA protocol and community based technological tool, the authors revealed that relevant pedagogy centered chronic diseases on is important in the effective management of health through prevention, care, promotion, monitoring and maintenance of integral public health. The community based technological tool involves peers, families, professionals and caregivers to improve coverage and effectiveness in the teaching-learning process of health education programs. Showed that chronic diseases are impacted negatively by low educational knowledge about diet,

smoking and lack of exercise among patients [10]. The major chronic diseases studied by the author are coronary artery disease, type 2 diabetes mellitus and hypertension. Refresher training in physical health course was utilized as interventional support to improve the health education and skills. At the end, survey was conducted to assess the impact of the health education programs on diet, smoking and lack of exercise among patients. From the results, the authors discovered that patients with chronic diseases had more exercise, healthier diet and significant improvement in smoking habits than other patients with different conditions. The author concluded the training is very effective in improving physician compliance regarding good healthy lifestyle.

Reported that good health is the fundamental right of every individual across the globe [11]. They further highlighted that medical education is important for educating people on healthy lifestyle. Development of educators that will be charged with the task of medical education and training in skills is important particularly among rural dwellers who are continuously deprived of rural health-care workers, educated local, and health facilities due to distance, cost of traveling and social liability. It is important to stay away from unhealthy practices such as drinking, serious smoking, eating unhealthy food, and not exercising regularly in order to maintain healthy living. Revealed that utilization of new health information and acquisition of skills by an individual is linked to health literacy [12]. This health literacy provides ability to understand important health information from experts, pamphlets and other platforms. The authors carried out the study to investigate the role of health literacy on the relationship and communication between patient and health care provider. From their results, it was demonstrated that health literacy had a positive influence on health care provider and patient's communication, decision-making, and dialogue. Carried out a study on the role of self-management programs in improving patient's ability to manage chronic disease conditions and symptoms [13]. The authors studied diabetic, arthritis and asthmatic patients to check if self-management education programs will reduce glycosylated hemoglobin levels, systolic blood pressure, and respiratory attacks. They reported that self-management education programs improved the selected conditions resulting into reducing health care costs, improvement in outcomes and empowering patients. Demonstrated that proper motivation for health knowledge and activities are factors that impact healthy behaviors in individual [14]. Several non-governmental organizations are seen in Taiwan running broadcast and television network on issues boarding on health promotion, environmental protection and communication for humanity for healthy lifestyle. The authors demonstrated that health promotion campaigns utilized communication channels and mass media to improve health behaviors and cost of health-related products.

Demonstrated that due to massive industrialization in many parts of the developed countries [15], there is steady rise in the incidence of mental health issues and chronic diseases. The authors revealed that healthy lifestyle and behavior is developed and learned, thus community, individuals and family must be the target so as to maintain proper health status. Improper lifestyle leads to increase in disease burden, therefore alternatives to ways to solve the health challenges must be assessed or implemented. The authors revealed that family is the central point to health promotion, thus it is important to incorporate clinical prevention practice that will improve health status by developing family relationships and strengthening health activities for

robust mental and physical health. Reported that self-management intervention in chronic conditions and arthritis can be improved with educational programs [16]. The authors carried out a study and reported that self-management intervention play little role in individuals with arthritis. Revealed that there is increased incidence of mental disorders among adolescents and children across the world. Since schools are charged with the role of promoting mental wellness and positive healthy living [17], the authors studied the school's effectiveness in evidence-based health interventions in mental health promotion. They revealed that several interventions have been implemented with positive outcomes. These interventional approaches are appealing to these young people and the methods are very effective. Noted that health promotion programs and disease prevention are important factors in behavioral changes [18]. The authors identified some barriers to effective implementation of these factors such as low implementation fidelity, ineffectually trained, exaggerated flexibility subject to political change, overworked personnel, change of implementation frameworks, disregard of context, lack of supportive contextual interventions, scarce resources, a plethora of programs, weak organizational support, choices based on marketing criteria instead of effectiveness, resistance to social technologies, and research gaps. They further highlighted different solution such as robust intervention plans, definition of intervention periphery and core, comprehensive and clear manuals, leadership and organizational support, systematic adaptation to local conditions, qualification of users, quality assurance, effectiveness and monitoring of acceptance.

Effectiveness of health education programs in preventing chronic diseases

Several articles have continued to use the word health promotion interchangeable with health education. This is not a new area but it has incorporated several other areas such as social work, health education, political science, community development and social marketing. Basically, from historical perspective, health education is to create awareness to the people to educate them of the health implications or consequences of some of their behaviors. Acquiring knowledge or information about a situation may lead to behavioral or attitudinal change. Thus, over the years health education has grown into educating, training and facilitating people to make better health choices and decisions and change their environment. Generally, individual is a product of its environment and cannot be isolated from its environment. Hence, health education deals not only with information communication but also with factors that promote improve health decisions and action such as skills, motivation, confidence and knowledge acquisition. The social, environmental, political and economic conditions affect health; thus, health education fosters these conditions. Over the past few decades, community mobilization and advocacy have been utilized in health education but recently health promotion is often utilized as well as health marketing and health empowerment.

Health promotion or education is a process that facilitates enhanced control of health determinants in order to improve health conditions by the people. To achieve this, various health policies have been explored to create a supportive environment and health through intersectoral collaboration and coordination of actions by governments, voluntary organizations, industries, media, health care providers, and local authorities. The major goals of health education are to improve health outcomes, reduce cost and improve patients' satisfaction for the

health care system. Health education is an important aspect of primary health care system. For instance, immunization has enabled infectious diseases like rubella, polio, pertussis to become rare and also advocacy for early detection of cancer, hypertension, diabetes, obesity, and others has reduced morbidity and mortality rate. Demonstrated in their study that school-based health education program was utilized to evaluate the role of health education effectiveness on soil transmitted Helminths among pupils of rural communities in Nigeria [19]. The authors revealed that the negative implications of the soil transmitted Helminths are enormous in this particular community which has become a public health concern. The authors utilized two strategies; the group that was given health education and the other that were dewormed. From their study, it was revealed that there was no significant difference in the prevalence rate of the parasites infection between dewormed and health education intervention groups. They also revealed that school-based health education intervention resulted in no significant impact on soil transmitted Helminths incidence among the students. The authors thus, suggested that community-based deworming strategy should be utilized while improving water quality, hygiene infrastructures, and sanitation, across schools.

Reported that chronic diseases are linked with premature death [5], morbidity and disability, thus public health promotion to reduce global burden of diseases through effective interventional approaches should be practice. Good eating habit, reduced smoking and regular exercise are recommended in clinical prevention care. Also, health policy interventions affecting human and environment will also promote healthy population, lifestyle, and behavior. The authors revealed that workplace health promotion, communication, community education, training, social support, public awareness campaigns, city redesign, healthcare delivery system reforms and public health. The cost implication and clinical effectiveness of preventive services and health promotion has been shown to be very effective in the reduction of chronic diseases, promoting healthy lifestyle and environmental health across the various levels such as community-based programs, individual clinical preventive services and public policy [20]. The authors believe that the effectiveness will increase if the interventions are implemented together instead of individual intervention. In public policy for tobacco smoking reduction, there are interventions such as counselling, smoking cessation campaign, nicotine replacement therapy, treatment cost reduction, smoking restriction and ban in public places, ban on tobacco promotion, advertising and sponsorship and taxes on tobacco production which are to regulate demand on tobacco and make the environment safe. In community-based approach, there are community educative programs, public awareness, training, mass media campaign on tobacco reduction and consumption targeted towards the adolescents, youth, administrators, health workers, social workers, community workers, media professionals, decision-makers, and educators. For adolescent and children, enhanced physical activity and school health education programs in the curriculum will significantly impact on their physical fitness and likewise promote health awareness. Reported that the prevention of chronic diseases has grossly been insufficiently addressed despite the numerous policies and evidence-based practices to address the issues [21]. More research is needed to be done coupled with community-based approaches like school-based immunization, screening and early detection, physical activity, good eating habit promotion and cessation of tobacco to effectively implement strategies that will reduce the global bur-

den of chronic diseases. Showed that economic evaluation of school-based health promotion and prevention programs are important [22]. They carried out a meta-analysis to assess the effectiveness, acceptability, feasibility and sustainability of the school-based programs.

Conclusion

Looking at the prevalence of chronic diseases across the globe, it is important to understand the economic and social burden resulting from increased mortality and morbidity. Working across all levels in the society to ensure that there is gross reduction in various risk factors predisposing people to such conditions is needed. Chronic disease preventive strategies such as evidence-based health policy, urban planning, health systems development, population-based preventive approach, and advocacy have been extensively discussed.

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