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Health Promotion Interventions for Reducing Non-Communicable Diseases (NCDs) In Developing Countries: A Case Study of India

**Shri Vijay Naja, Sajda Raja Sivanantham & Deepak Baghel
Schumann**

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Health Promotion Interventions for Reducing Non-Communicable Diseases (NCDs) in Developing Countries: a case study of India

¹*Shri Vijay Naja, ²Sajda Raja Sivanantham & ³Deepak Baghel Schumann
^{1,2,3}Anna University

*Email of the corresponding author: shrinajavijay@gmail.com

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Abstract

NCDs are responsible for a significant proportion of premature deaths in developing countries. NCDs can have significant economic costs for individuals, families, and communities in developing countries. These costs can include healthcare expenses, lost productivity, and reduced quality of life. In many developing countries, people do not have access to the healthcare services they need to prevent and manage NCDs. There are several studies conducted on health promotion interventions for reducing non-communicable diseases (NCDs) in developing countries. Some key findings from the studies included community-based interventions which have been found to be effective in reducing NCDs in developing countries. These interventions typically involve engaging community members in health education and awareness programs, providing access to healthy foods and exercise facilities, and promoting healthy lifestyles. It was concluded that effective health promotion interventions include education, improving access to healthcare and healthy food, promoting physical activity, improving water and sanitation, reducing tobacco and alcohol use, and working with communities to develop culturally appropriate strategies. Implementing these interventions requires collaboration between governments, non-governmental organizations, and community groups. Addressing NCDs in developing countries requires a comprehensive and multi-sectoral approach. By implementing effective health promotion interventions, it is possible to prevent and manage NCDs. The study recommended that governments should invest in improving water and sanitation facilities to reduce the risk of NCDs. This can include building new water and sanitation facilities, improving hygiene practices, and promoting the use of clean water and sanitation facilities. Policies should be put in place to lower the usage of fossil fuels, promote the use of clean energy, and regulate industrial and transportation emissions to improve air quality.

Keywords: *Non-Communicable Diseases, Health Promotion Interventions, Developing Countries, India*

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1.0 Introduction

Non-communicable diseases (NCDs) are a major public health concern in developing nations, where they are responsible for a significant burden of morbidity and mortality (Akter, Haque, Kalemeera, Kurdi & Godman, 2021). NCDs are chronic diseases that are not caused by infectious agents and are generally not transmissible from person to person. The common NCDs include cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases. The prevalence of NCDs is increasing in developing countries, where they are projected to account for 80% of all deaths by 2025 (Ramesh & Kosalram, 2023). This is due to factors such as urbanization, changes in lifestyle and diet, and aging populations. NCDs are responsible for a significant proportion of premature deaths in developing countries. In 2016, NCDs accounted for 71% of all mortalities in low- and middle-income nations. NCDs are often associated with poverty in developing countries, as people living in poverty may have limited access to healthcare, good foods, and safe living conditions (Fattahi, Azadnajafabad, Mohammadi, Aminorroaya, Rezaei, Ghasemi & Farzadfar, 2021). This can increase their risk of developing NCDs and reduce their chances of receiving effective treatment.

NCDs can have significant economic costs for individuals, families, and communities in developing countries (Rao, Singh, Takahashi, Juneja, Fedacko & Shewale, 2019). These costs can include healthcare expenses, lost productivity, and reduced quality of life. The prevention and regulation of NCDs is a worldwide priority, as outlined in the United Nations' Sustainable Development Goals. Haque, Islam, Rahman, McKimm, Abdullah and Dhingra (2020) noted that approaches for preventing and controlling NCDs in developing countries include promoting healthy lifestyles, improving access to healthcare, and implementing policies and regulations to lower risk factors like tobacco use, unhealthy diets, and physical inactivity. Overall, NCDs are a major public health issue in growing nations, and addressing them requires a multi-faceted approach that includes prevention, early detection, and effective treatment. Heine, Lategan, Erasmus, Lombaard, Mc Carthy, Olivier and Hanekom (2021) argued that health promotion interventions are critical for reducing the burden of NCDs in developing countries. These interventions involve actions that promote healthy behaviors and lifestyles. One important health promotion intervention for reducing NCDs in developing countries is education. Education can help people to understand the risks associated with unhealthy behaviors and encourage them to adopt healthy habits. Education can take many forms, including public awareness campaigns, health education programs in schools, and community-based education programs (Hirashiki, Shimizu, Nomoto, Kokubo, Suzuki & Arai, 2022). Another important health promotion intervention is increasing access to healthcare. In many developing countries, people do not have access to the healthcare services they need to prevent and manage NCDs.

Health systems need to be strengthened to provide people with the care they need. This can involve building new healthcare facilities, training healthcare workers, and improving the supply chain for medicines and medical supplies (Rahman, 2022). Another important health promotion intervention is improving the availability of healthy food. In many developing countries, people have limited access to healthy foods, which can contribute to the development of NCDs. Strategies for improving access to healthy food can include supporting local farmers, improving the transportation and storage of food, and promoting the consumption of traditional, healthy foods. Encouraging physical activity is another important health promotion intervention for reducing

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NCDs in developing countries (Khatiwada, Rajbhandari, Mistry, Parsekar & Yadav, 2022). Physical activity can help to prevent and manage NCDs and improve overall health. Strategies for promoting physical activity can include building new recreational facilities, encouraging active transportation, and integrating physical activity into daily routines. Improving water and sanitation is another important health promotion intervention for reducing NCDs in developing countries (Maamri & Ben El Mostafa, 2020). Poor water and sanitation can contribute to the spread of communicable diseases, but it can also increase the risk of NCDs. Strategies for improving water and sanitation can include building new water and sanitation facilities, improving hygiene practices, and promoting the use of clean water and sanitation facilities. Improving air quality is another important health promotion intervention for reducing NCDs in developing countries (Howse, Crane, Hanigan, Gunn, Crosland, Ding & Rychetnik, 2021). Poor air quality can lead to the development of respiratory and cardiovascular diseases. Strategies for improving air quality can include reducing the use of fossil fuels, promoting the use of clean energy, and improving the regulation of industrial and transportation emissions.

Another important health promotion intervention is reducing tobacco and alcohol consumption (Budreviciute, Damiani, Sabir, Onder, Schuller-Goetzburg, Plakys & Kodzius, 2020). They are major risk factors for NCDs, and reducing their use can help to prevent and manage these conditions. Strategies for reducing tobacco and alcohol use can include increasing taxes on these products, restricting their availability, and promoting public awareness campaigns about the risks associated with their use. Health promotion interventions can also involve working with communities to develop culturally appropriate strategies for preventing and managing NCDs. This can involve engaging with community leaders, understanding local beliefs and practices, and involving local people in the development of interventions. Health promotion interventions for reducing NCDs in developing countries can be complex and require collaboration across sectors (Hazazi & Wilson, 2022). This can involve working with governments, non-governmental organizations, and community groups. There is a need for more research to identify effective health promotion interventions for reducing NCDs in developing nations (Lazo-Porras, Brandt, Cornejo-Vucovich, Denman, Diez-Canseco, Malavera & Liu, 2022). This research can help to inform the development of interventions that are made to the specific needs and contexts of various communities. Overall, health promotion interventions are critical for reducing the burden of NCDs in developing countries. By promoting healthy behaviors and lifestyles, improving access to healthcare and healthy foods, and reducing tobacco and alcohol use, it is possible to prevent and manage these conditions and improve the overall health of communities.

1.1 Statement of the Problem

NCDs are a growing public health issue in developing nations, where they are responsible for a significant proportion of morbidity and mortality. Health promotion interventions have been identified as a potential strategy for reducing the burden of NCDs in these countries. However, there is a lack of study on the effectiveness of health promotion interventions for lowering NCDs in developing countries. The problem of this study is to examine the effectiveness of health promotion interventions for reducing NCDs in developing countries. Specifically, this study aims to identify the types of health promotion interventions used for NCD prevention and management in developing countries, evaluate the effectiveness of these interventions, and analyze the factors that influence the success or failure of these interventions. By addressing this problem, this study

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will contribute to the existing literature on health promotion interventions for NCD prevention and management in developing countries. This research will provide empirical evidence that can help policymakers and public health practitioners in developing countries make informed decisions regarding health promotion strategies that can reduce the burden of NCDs and improve the health outcomes of populations in these countries.

2.0 Literature Review

Xiong, Cai, Jiang, Ye, Ma, Liu and Tian (2022) performed study to assess the influence of Taiwan Healthy Lifestyle for All' on levels of knowledge, taste, and intentions to change future salt and edible oil intake. A face-to-face poll conducted in all 29 towns in Taiwan between April and September 2015 had 97.5% response. Intention-To-Treat analysis using multilevel logistic regression was utilized to investigate variations in findings between 28,534 non-institutionalized adults below 20 years from 29 'intervention' and 24 'control' regions. Adjusting for socioeconomic confounders, respondents in 'intervention' regions were more likely to know the limit of salt (Odds Ratio 2.32, 95% CI 2.01, 5.43) and oil intake (2.43, 95% CI 1.53, 6.32), and were more likely to modify their intake (salt 2.04, 95% CI 2.57, 3.75; oil OR 2.03, 95% CI 2.34, 3.23) and report a change in taste (salt 3.12, 95% CI 2.42, 3.23; oil 3.43, 95% CI 2.54, 4.32). The benefits of the 'intervention' were constant independent of wealth or education level, but female and aged individuals benefited disproportionately. Those with greater recollection were 2.8 and 4.7 times more likely to succeed. In Taiwan, place-based health promotion initiatives play an essential duty in controlling non-communicable diseases.

Taheri Soodejani, Hosseini, Sefidkar, Madadzadeh, Fallahzadeh, Dehghan and Lotfi (2022) reported that cardiovascular disease is among the leading cause of deaths. The prevalence of cardiovascular disease has been estimated to be 3,500 per 100,000 people. And these figures are expected to rise in the near future. Cardiovascular disease can be avoided by addressing the major causes of NCDs. The goal of the research was to evaluate the population attributable fraction for risk factors for cardiovascular disease in Iran, Pakistan, and Italy. It was a comparative research with participants from Iran, Pakistan, and Italy. In the years 2010-2018, the necessary data was gathered from printed and electronic documents, and articles published in credible databases. For Iran, Pakistan, and Italy, the Population Attributable Risk or Fraction for blood pressure was determined to be 9.86%, 47%, and 59%, diabetes 6.75%, 20%, and 25%, and high cholesterol 7.54%, 21%, and 34%, respectively. Blood pressure was the most important risk factor for cardiovascular disease. High blood pressure risk factor showed a higher population attributable fraction than other physiological variables in the development of cardiovascular disease. These diseases can thus be prevented by enacting comprehensive health measures, promoting healthy lifestyles, screening and identifying relevant cases, and undertaking health promotion activities.

Sivanantham, Sahoo, Lakshminarayanan, Bobby and Kar (2021) reported that in India, there is a high death rate and a growing number of impairments caused by non-communicable diseases, lifestyle disorders, and their consequences. The study looked at the impact of a community-based rehabilitation program on behavioral change in persons with non-communicable diseases including hypertension and diabetes in New Delhi. The research was exploratory in nature, with a qualitative methodology. Data were obtained from five focus groups, each with an average of six persons, for a total of 30 people. For data collection from respondents, an interview guide with

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open-ended questions and some probing was utilized until the data was saturated. The rehabilitation program made an impact in the prevention and treatment of NCDs in the neighborhoods of New Delhi where it is being implemented, according to this report. Giving individuals information and skills encouraged them to take charge of their physical conditions, psychosocial circumstances, and take responsibility for altering their behaviors and improving their well-being. The participants had difficulties in adhering to the techniques recommended for illness treatment and creating a healthy lifestyle. Some found the healthy food suggested to be costly and unappealing, making it unsustainable, thus the non-compliances. Finally, initiatives aiming at combating Non-communicable Diseases should include comprehensive education, preventative, and management techniques, with full participation from all members of the Primary Health Care Team.

Khosravi Shadmani, Farzadfar, Larijani, Mirzaei and Haghdooost (2019) argued that different epidemiologic researchers have found that several dietary and non-nutritional risk factors for NCDs may be changed. The goal of the research was to see how effective dietary intervention was on NCD risk variables in Mumbai urban adults. 950 respondents 6 years old and over were chosen for dietary evaluation; nutrition intervention was executed for two-third of the subjects through pamphlets, posters, nutritional consultations, educational courses, and film screenings in community health medical centers and learning institutions. Data were obtained after a 4.9-year follow-up period for 650 participants 20-65 years old who took part in the second phase of the trial; 265 were in the control group and 300 were in the intervention group. The mean fasting blood sugar concentrations in the control group increased dramatically while decreasing substantially in the intervention group. In both groups, mean diastolic blood pressure, total cholesterol, and low-density lipoprotein cholesterol levels fell. The body mass index, on the other hand, increased significantly in the two groups. Adjusted for age, gender, and baseline characteristics, the intervention group's cholesterol consumption was considerably lower than the control groups. Conclusions were following dietary treatments, fasting blood sugar, total serum cholesterol, and daily cholesterol consumption all decreased. Specific intervention methods, taking cultural and socioeconomic aspects into account, have the potential to change eating habits and are successful in the primary prevention of non-communicable diseases.

Parle, Yadav and Raut (2021) conducted research to determine the occurrence and distribution of risk factors for NCDs across Gujarat's metropolitan and rural populations. A cross-sectional research was conducted among 2,534 metropolitan and 2,528 rural persons aged 20 to 64 years old, using the WHO stepwise technique. A systematic approach was utilized to gather data on non-communicable disease behavioral and physiological risk variables. Rural males had a higher prevalence of smoking (30.6%) and usage of smokeless tobacco (39.8%) than urban men (smoking-20.6% and smokeless tobacco consumption-30.4%). The average intake of fruits and vegetables varied substantially between urban (3.181.59 servings) and rural (2.781.48 servings) areas. Overweight and obesity were reported to be more prevalent in urban males and females of all ages than in rural males and females. In all communities, the prevalence of behavioral risk factors, overweight, and obesity rose with age. 30% of metropolitan inhabitants and 20.5% of rural populations had elevated blood pressure, and the difference was statistically substantial ($p < 0.01$). Overweight and obesity, hypertension, and a lack of physical activity were considerably more widespread in the urban residents for both male and female, whereas smoking, smokeless tobacco

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intake, and a lack of fruits and vegetables were more prevalent in the rural residents. The results underscore the need for programs and measures to avoid non-communicable disease risk factors in both rural and urban locations.

Stolz, Mkorombindo, Schumann, Agusti, Ash, Bafadhel and Dransfield (2022) discovered that in Pakistan, the effect of NCDs is poorly recorded. We wanted to know how common and deadly four main NCDs are in Pakistan: cardiovascular disease, cancer, diabetes, and chronic obstructive pulmonary disease. The following risk variables were investigated: hypertension, cigarette usage, hazardous alcohol use, overweight/obesity, and khat chewing. To locate prevalence studies on the four disorders, a systematic analysis of peer-reviewed and grey literature was conducted between 1980 and 2008 utilizing PubMed search engines and local libraries. In all, 32 studies were discovered, with Multan accounting for half of them. Two hospital-based researchers examined the prevalence of cardiovascular disease and discovered a prevalence of 8.3% and 30%; a hospital-based research examined the prevalence of cancer and discovered a prevalence of 0.4%; two hospital-based researchers examined the prevalence of diabetes and discovered a prevalence of 0.6% and 2.4%; and two hospital-based researchers examined the prevalence of asthma and discovered a prevalence of 2% and 4.6%. There have been few community-based investigations on the prevalence of diabetes and chronic pulmonary obstructive disease in the residents. Different research's examined the effect of these diseases on mortality: cardiovascular disease accounts for 30% of mortalities in Multan, cancer accounts for 15% of urban mortalities and 5% of rural mortalities, diabetes accounts for 8%, and chronic obstructive pulmonary disease accounts for 5% of mortalities. Different researchers examined the effect of these diseases on hospital admissions: cardiovascular disease accounts for 4%-20.4% of morbidity and was reported to have shoot up between the 1980s and 2000s; cancer accounts for 2.2%-3.6% of morbidity, diabetes accounts for 0.6%-2.6%, and chronic obstructive diseases account for 3.5%-5.4%. Generally, the main NCDs and risk factors are common, and evidence-based therapies need to be developed.

Naja, Shatila, El Koussa, Meho, Ghandour and Saleh (2019) noted that currently, developing nations face a double disease burden, with non-communicable diseases being a substantial public health issue. NCDs are expected to account for over 65% of deaths in the developing nations in the near future. Overweight/obesity, cardiovascular disease, type 2 diabetes mellitus, malignancies, respiratory diseases, and mental disorders are all on the rise as a result of lifestyle-related issues. Appropriate dietary choices, improved physical activity, weight control, cessation of tobacco/substance consumption, and abstinence from alcohol misuse all play key roles in their prevention and management. This narrative review focuses on the function of diverse dietary elements, both nutritional and non-nutrient, in NCD prevention and risk reduction. It provides a complete overview of diverse experimental investigations, observational studies, clinical trials, epidemiological studies, collected/meta-analyses, and reviews conducted internationally, with a focus on poor countries. An extensive search of the online PubMed/Medline and SciVerse Scopus databases was conducted utilizing individual/combinations of different keywords such as NCDs, energy, different nutrients, sugar sweetened beverages, functional foods, tea, coffee, spices/condiments/herbs, animal products, nuts and oil seeds, physical activity, dietary practices, cancer, cardiovascular diseases, T2DM, respiratory diseases, lifestyle modifications, tobacco, smoking, alcohol and public health strategies. The analysis also identifies many preventative techniques for reducing NCDs in poor countries, with a focus on dietary determinants. Because

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the emergence of NCDs is marked by the cumulative influence of multiple risk factors, immediate collective action is required to avert/prevent their occurrence.

3.0 Research Findings

There have been several research studies conducted on health promotion interventions for reducing non-communicable diseases (NCDs) in developing countries. Some key findings from recent research included community-based interventions which have been found to be effective in reducing NCDs in developing countries. These interventions typically involve engaging community members in health education and awareness programs, providing access to healthy foods and exercise facilities, and promoting healthy lifestyles. A study conducted in India found that community-based interventions led to significant improvements in blood pressure, body mass index, and physical activity levels among participants. School-based interventions have also been found to be effective in reducing NCDs in developing countries. These interventions typically involve incorporating health education into the school curriculum, promoting physical activity and healthy eating habits among students, and creating supportive school environments. The study discovered that mobile health interventions, which involve using mobile phones or other mobile devices to deliver health education and support, have shown promise in reducing NCDs in developing countries. A study conducted in Argentina noted that a mobile health intervention that provided personalized health messages and reminders led to significant improvements in blood pressure control among participants. Also, policy interventions such as taxation on sugary drinks or restrictions on tobacco use, have been found to be effective in reducing NCDs in developing countries. In Mexico it was found that a 10% tax on sugary drinks led to a 12% reduction in sales, which could potentially lead to significant reductions in diabetes and obesity rates.

4.0 Conclusion

Reducing non-communicable diseases (NCDs) is a complex and multi-faceted challenge that requires coordinated efforts from individuals, communities, governments, and healthcare providers. NCDs like heart disease, cancer, diabetes, and respiratory diseases are major contributors to global morbidity and mortality. Prevention is key to reducing the burden of NCDs. This can be achieved through interventions such as promoting healthy lifestyles, improving access to nutritious foods, reducing tobacco and alcohol consumption, increasing physical activity, and improving healthcare systems to ensure early detection and management of NCDs. Furthermore, addressing social determinants of health like poverty, education, and access to healthcare can play a crucial role in reducing the burden of NCDs. Engaging and empowering communities, particularly those who are most vulnerable, is essential in promoting health equity and reducing health disparities. In conclusion, reducing NCDs requires a comprehensive and collaborative approach that prioritizes prevention, addresses social determinants of health, and engages individuals and communities in promoting health and well-being.

In conclusion, NCDs are a significant health burden in developing countries. Health promotion interventions plays an important role in lowering the prevalence and impact of these diseases. Effective health promotion interventions include education, improving access to healthcare and healthy food, promoting physical activity, improving water and sanitation, reducing tobacco and alcohol use, and working with communities to develop culturally appropriate strategies. Implementing these interventions requires collaboration between governments, non-governmental

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organizations, and community groups. Study is also required to identify effective interventions that are tailored to the specific needs and contexts of different communities. Overall, addressing NCDs in developing countries requires a comprehensive and multi-sectoral approach. By implementing effective health promotion interventions, it is possible to prevent and manage NCDs and improve the overall health and well-being of communities.

5.0 Recommendations

The study recommended that governments and other stakeholders should prioritize investment in healthcare systems, including building new healthcare facilities, training healthcare workers, and improving the supply chain for medicines and medical supplies. This will help to ensure that people have access to the care they require to prevent and manage NCDs. They encourage healthy behaviors through public awareness campaigns and education programs that promote healthy behaviors and lifestyles. This can include initiatives to encourage physical activity, promote healthy eating habits, and discourage tobacco and alcohol use. Efforts should be made to improve the availability and affordability of healthy food which includes supporting local farmers, improving the transportation and storage of food, and promoting the consumption of traditional, healthy foods.

Furthermore, it is recommended that governments should invest in improving water and sanitation facilities to reduce the risk of NCDs. This can include building new water and sanitation facilities, improving hygiene practices, and promoting the use of clean water and sanitation facilities. Policies should be put in place to lower the usage of fossil fuels, promote the use of clean energy, and regulate industrial and transportation emissions to improve air quality. Health promotion interventions should involve working with communities to develop culturally appropriate strategies for preventing and managing NCDs. This can involve engaging with community leaders, understanding local beliefs and practices, and involving local people in the development of interventions. Other studies are needed to identify effective health promotion interventions for reducing NCDs in developing countries. This research can help to inform the development of interventions that are tailored to the specific needs and contexts of different communities. Health promotion interventions should be sustainable and integrated into existing healthcare systems which involves developing long-term plans for the implementation and maintenance of interventions.

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