



Intervention for Primary Prevention of Non-Communicable Diseases

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The scientific advancement of the 21st century has led the world to a silent pandemic of non-communicable diseases (NCDs). NCD-related mortality has surpassed all other communicable disease deaths put all together. More than 7 out of 10 deaths, or nearly 41 million deaths, account for NCDs every year across the globe. Changing social, economic, and structural factors, such as urbanization and unhealthy lifestyles, are contributing to the NCDs crisis, with 15 million people dying before their 70s each year [1]. The risk factors associated with NCDs are broadly classified into modifiable and non-modifiable risk factors. These risk factors increase the likelihood of disease occurrence. Modifiable risk factors are basically preventable behavioral risk factors that are associated with tobacco use, physical inactivity, the harmful use of alcohol, and unhealthy diets. However, non-modifiable risk factors are related to age, gender, race, ethnicity, and genetic inheritance [2].

Modifiable or preventable risk factors for NCDs are firmly entrenched in the way of life of modern societies, regardless of age, gender, ethnicity, or economic status [3]. As a result, four major NCDs, namely cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes, are responsible for more than 80% of all NCD-related premature deaths [4]. Though NCDs are often considered a “lifestyle disorders” [5], this class of diseases has become a public health emergency

for low and middle-income countries, owing to their poverty, illiteracy, and a lack of basic amenities [6].

Building the human capital necessary to overcome severe poverty requires making smart and effective investments in people’s education [7]. Unfortunately, NCD control and prevention efforts are primarily focused on secondary and tertiary prevention in adult and geriatric populations, ignoring the importance of primary prevention in the adolescent age group. These methods are not only costly but also have a poor prognosis in terms of disease outcomes. However, extensive research shows modifiable, preventable risk factors for NCDs emerge in adolescence and affect the likelihood of developing an NCD later in life. Therefore, adolescence is critically important for strategies to combat NCDs, and investments must be made in the primary prevention of NCDs to ensure the health of the future and current generations simultaneously. This will not only be a cost-effective intervention but also a long-lasting and more promising one [8-11].

Globally, more than 85% of children are enrolled in primary and lower secondary schools, where they spend one-third of their time. Schools are a special place for fostering health and provide a crucial window of opportunity for instilling positive behaviors. Only a few countries have successfully implemented health-promoting schools on a large

scale [12]. Global estimates of mortality and morbidity show that school-aged children are significantly underserved in terms of health promotion, disease prevention, and medical attention [13]. Despite the fact that the idea was first proposed by World Health Organization, United Nations Educational, Scientific and Cultural Organization, and United Nations Children's Fund back in 1992, Estimates of mortality and morbidity worldwide indicate that services for health education, health promotion, and disease control and prevention are seriously deprived for school-aged children [14].

India, the most populous country in the world, has the highest proportion of youth. If we delay more in taking corrective measures for primary prevention of NCDs, we may have to face public health emergency in near future. Since then, India's total fertility rate has now fallen to 2.1 [15,16]. As a result, this current youth population is likely to be replaced by a geriatric population. Hence, we are not far away from the transformation of the country from the capital of diabetes to the capital of NCDs.

Over the years, the nations have revolutionized school education and advanced the curriculum with an indifferent attitude toward disease prevention. Rather, we could have a holistic education model, that with regular education, could impart basic elementary knowledge of communicable diseases and NCDs, their risk factors, prevention and control, and the need and importance of screening for diseases. Thorough research has documented how increasing awareness about NCDs and their risk factors can lower the disease burden [17,18].

Since NCDs' risk factors tend to develop in adolescence, this age group is more appropriate for early sensitization and the primary prevention of NCDs. As the students enroll in different courses after school, the most practical approach for implementation of this intervention is the introduction of NCD primary prevention in the secondary school curriculum, when it is needed the most and mass students can be educated. Implementing primary prevention in secondary school curricula is a practical approach to equipping students with essential life skills and knowledge at a time when they are more receptive to learning and making informed decisions. Primary prevention aims to address various aspects of well-being, including physical health, mental health, substance abuse prevention, and responsible decision-making. By incorporating these elements into the secondary school curriculum, students can graduate with a well-rounded set of skills and knowledge that will empower them to make informed and responsible choices in various aspects of their lives. The practical approach involves hands-on activities, real-life examples, and interactive discussions to enhance the effectiveness of primary prevention efforts.

Therefore, appropriate knowledge of NCDs control and preventive measures through school education will not only protect students themselves against NCDs, but they can also act as a safeguard for their parents, families, and society as a whole. This could be a significant step forward for low- and middle-income countries struggling to achieve Sustainable Development Goals. Target 3.4 Reduce by one-third premature mortality from NCDs through prevention and treatment and promote mental health and well-being.

NOTES

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