

Non-Communicable Diseases Among Youth in India: A Critical Public Health Challenge

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ABSTRACT

Non-communicable diseases (NCDs) among Indian youth pose a significant public health challenge due to their rising prevalence and substantial impacts on health and economic stability. This shift from infectious diseases to chronic conditions such as diabetes, cardiovascular diseases, and cancers is the primary driver of morbidity and mortality among young Indians. Critical modifiable risk factors, including unhealthy diets, sedentary lifestyles, and substance abuse, coupled with non-modifiable factors like genetics and socio-economic conditions, significantly contribute to NCD prevalence. Emphasizing the need for early intervention, health promotion, and comprehensive healthcare strategies is essential for effective management and prevention of NCDs. The article highlights initiatives like school-based programs and community outreach, designed to promote healthier lifestyle choices among youth. Addressing NCDs thoroughly necessitates robust policy frameworks, strengthened healthcare infrastructure, and targeted interventions. These measures are crucial to alleviate the burden of these diseases on India's future workforce and enhance economic prospects.

INTRODUCTION

Non-communicable diseases (NCDs) such as diabetes, hypertension, and cardiovascular diseases (CVDs) as leading causes of global mortality, particularly emphasizing the origins of risk factors like poor diet, smoking, sedentary behaviour, and obesity early in life. These behaviours, established during adolescence, significantly affect health throughout an individual's life course. The study highlights how unhealthy diets, particularly high in sugar-sweetened beverages and saturated fats, contribute

significantly to the increased risk of CVD globally.(1,2,3)

The behavioural risk factors for NCDs often do not occur in isolation but are likely to cluster, exacerbating the risk of developing NCDs later in life. This clustering of risk factors during adolescence, a period of significant physical and psychological development, is crucial because habits formed during these years tend to persist into adulthood, potentially leading to premature deaths.(4,5)

Addressing these issues, the Sustainable Development Goals emphasize the prevention

and control of NCDs as a global priority. Various international strategies recommend integrated school health programs that promote nutrition, physical activity, and overall well-being among youth to curb the onset of NCDs early. Notably, the Lancet Adolescent Commission has identified tackling NCD-related health behaviours during adolescence as critical to preventing future disease.(6,7)

In India, the impact is profound among the youth, marking a significant shift in the country's disease burden traditionally dominated by infectious diseases. NCDs, including cardiovascular diseases, diabetes, cancer, and chronic respiratory conditions, are now leading causes of morbidity and mortality among young Indians, necessitating an urgent and comprehensive response.(8,9)

Globally, NCDs are responsible for 71% of all deaths, with a substantial burden manifesting in low- and middle-income countries, where healthcare systems face significant challenges in managing such diseases(10). In India, the situation is exacerbated by rapid urbanization, lifestyle changes, and economic growth, which have introduced new health challenges and amplified the risks associated with NCDs. The prevalence of these diseases among Indian youth not only represents a major shift in public health dynamics but also poses severe implications for the country's future workforce and economic prospects.(9,10)

Epidemiology of Non-Communicable Diseases: The epidemiology of Non-Communicable Diseases (NCDs) among youth in India presents a formidable public health challenge, marked by a notable surge in morbidity and mortality. Contrary to historical trends associating NCDs with older demographics, there's a discernible shift wherein adolescents and young adults increasingly bear the brunt of these ailments.(11)

Evident within India's demographic milieu is the steady ascent in NCD prevalence among its youth populace. Data from the Indian Council

of Medical Research (ICMR) divulges a doubling of NCD burden among individuals aged 15-29 over the past decade. This burgeoning prevalence underscores an escalating incidence of conditions encompassing diabetes, hypertension, obesity, and mental health disorders. Similarly, the Global Burden of Disease Study underscores the amplifying footprint of NCDs among India's youth, attributing approximately 23% of deaths within this cohort to NCD-related causes.(9,10)

A myriad of modifiable and non-modifiable risk elements intricately intertwine to precipitate NCD onset among Indian youth. Modifiable determinants such as dietary imbalances, sedentary lifestyles, tobacco consumption, and alcohol misuse wield substantial influence. (10) Conversely, non-modifiable factors including genetic predisposition, familial history, and socio-economic dynamics like poverty, educational disparities, and urbanization patterns further compound susceptibility to NCDs among this demographic.

The toll of NCDs reverberates across the health spectrum, exacting a profound toll on the well-being of India's youth. These maladies herald a spectrum of adverse health sequelae encompassing premature mortality, disability, and diminished quality of life. Moreover, NCDs engender significant economic ramifications, exerting strain on individuals, families, and healthcare systems, manifesting as escalated healthcare expenditures and productivity losses.(11)

A panoply of impediments obstruct the effective prevention and control of NCDs among India's youth cohort. These include deficiencies in health awareness and literacy, constrained healthcare access, inadequate infrastructural resources, and the enduring stigma surrounding NCDs. Concurrently, the rapid epidemiological transition and urbanization precipitate lifestyle shifts, compounding the NCD burden among the youth populace.(10,11)

Addressing the escalating NCD scourge mandates a multifaceted approach integrating diverse interventions and strategies tailored to India's youth demographic. Initiatives spanning health promotion endeavours, school-based interventions, and community outreach programs assume significance. Furthermore, early screening and detection initiatives facilitate timely interventions, curtailing disease progression.

Realizing substantive gains necessitates the formulation and implementation of comprehensive policy frameworks attuned to India's NCD epidemiology among its youth. Imperatives encompass policies promoting healthy behavioural paradigms, regulating the marketing of deleterious foodstuffs, and fortifying healthcare infrastructure. Additionally, interventions targeting social determinants of health, such as poverty alleviation and educational enhancement, hold pivotal roles in mitigating NCD prevalence among youth.

Navigating the intricate epidemiological terrain of NCDs among India's youth mandates concerted efforts entailing holistic health promotion endeavours, early intervention strategies, and policy imperatives addressing underlying socio-economic determinants. By effectuating targeted interventions and policy frameworks, it's plausible to ameliorate the NCD burden among India's youth populace, fostering enhanced health outcomes and overall well-being.

Impact of Non-Communicable Diseases (NCDs) on youth: The impact of Non-Communicable Diseases (NCDs) on youth in India is a multifaceted challenge encompassing physical, social, and economic dimensions, with significant implications for public health. NCDs such as diabetes, hypertension, cardiovascular diseases, and cancer exert a profound toll on the physical health of young individuals, often leading to substantial morbidity and mortality.(11,12) Complications arising from these diseases, including kidney failure, heart attacks, strokes, and cancer,

markedly impair the quality of life and can result in premature death.

The burden of NCDs on youth in India is compounded by systemic factors such as inadequate access to healthcare services, deficient infrastructure, and limited awareness of preventive measures. Consequently, many young individuals with NCDs face delays in diagnosis and treatment, resulting in poorer health outcomes and elevated mortality rates.

Socially, NCDs impose significant challenges on young individuals in India, fostering stigma, and discrimination that can detrimentally affect mental health and well-being. Additionally, these diseases disrupt educational and employment opportunities, contributing to social isolation and economic adversity, particularly among marginalized communities where various barriers constrain healthcare access.(10,12)

Economically, NCDs have a substantial toll on youth in India, with high healthcare costs associated with diagnosis, treatment, and ongoing care. Moreover, NCDs lead to lost productivity due to disability, premature mortality, and absenteeism, placing strain on families, communities, and the healthcare system as a whole.(12)

Given these challenges, there is an urgent need for comprehensive public health strategies to address the impact of NCDs on youth in India. Efforts should prioritize prevention and control measures, including health promotion, early detection, and equitable access to affordable healthcare services. Public awareness campaigns targeting youth, healthcare providers, policymakers, and the broader community are essential to foster healthy behaviours and ensure timely intervention. By addressing the complex interplay of factors contributing to NCD prevalence among youth, India can mitigate the burden of these diseases and enhance the health and well-being of its young population.(9,10,11)

Risk Factors and Challenges in the Prevention and Control of Non-Communicable Diseases (NCDs):

Non-communicable diseases (NCDs) among youth in India are influenced by several modifiable risk factors, exacerbating their prevalence and impact.(13,14) One of the primary risk factors is an unhealthy diet, characterized by the consumption of processed foods, sugary beverages, and fast food. This dietary pattern contributes significantly to the development of NCDs such as obesity, diabetes, and cardiovascular diseases.(15) Additionally, sedentary lifestyles prevalent among youth further compound the risk, as physical inactivity is strongly associated with NCD incidence. The habit of tobacco use, including smoking and smokeless forms, is particularly prevalent among youth in India and is a leading cause of NCDs such as cancer, respiratory diseases, and cardiovascular ailments. Similarly, the harmful use of alcohol presents a significant risk factor for various NCDs, including liver diseases, cancer, and cardiovascular disorders.(15)

However, mitigating the burden of NCDs among youth in India encounters several formidable challenges. Foremost among these challenges is the limited access to healthcare services, especially in rural and remote areas, which hampers early detection and effective management of NCDs. Inadequate healthcare infrastructure further exacerbates the problem, with shortages of trained healthcare professionals, diagnostic facilities, and essential medicines hindering the provision of quality care. Additionally, the lack of awareness and health literacy among youth and their families poses significant hurdles in the prevention and control of NCDs. This often results in delayed diagnosis and suboptimal management of NCDs, further aggravating the burden.(16,17)

Addressing the growing burden of NCDs among youth in India requires a multifaceted approach that integrates various interventions and policy measures. Public health initiatives should prioritize health promotion efforts aimed at fostering healthy lifestyle behaviours

among youth. This includes promoting a balanced diet, encouraging regular physical activity, and discouraging tobacco and alcohol use. Policy interventions such as taxation on unhealthy foods and beverages, restrictions on tobacco advertising and sales, and the promotion of physical activity in schools and communities can serve as effective measures to mitigate the risk factors associated with NCDs among youth. By addressing these challenges and implementing targeted interventions, it is possible to reduce the burden of NCDs among youth in India and improve their overall health outcomes.(18,19)

Interventions and Strategies for the Prevention and Control of Non-Communicable Diseases (NCDs) Among Youth in India:

Non-communicable diseases (NCDs) are a growing public health issue affecting youth globally, with a particularly significant impact in India. This review discusses various interventions and strategic approaches for addressing the prevalence of NCDs among young individuals in the region, with a focus on promoting healthy lifestyles, ensuring early detection, and expanding access to healthcare.(20,21)

Health promotion initiatives targeting Indian youth play a pivotal role in NCD prevention. These programs aim to instil habits such as balanced nutrition, regular physical activity, and the avoidance of substances harmful to health like tobacco and alcohol. Successful health promotion strategies include school-based educational programs, community outreach efforts, and extensive media campaigns, all designed to foster healthier lifestyle choices among young people.(27)

The early detection of NCDs through regular screening is critical as it enables the timely management of diseases like diabetes, hypertension, and obesity, thus preventing further complications. The adoption of mobile health technologies and telemedicine platforms can significantly enhance the reach and efficiency of these screening programs, especially in remote and underserved areas,

facilitating early intervention and better health outcomes.(14)

Improving access to healthcare is another crucial strategy for managing NCDs in youth. This involves the establishment of dedicated NCD clinics, the strengthening of primary healthcare facilities, and the integration of NCD care into existing healthcare systems. Collaborative models, including public-private partnerships and community-based approaches, are essential to make healthcare services more accessible and affordable for all young individuals.(22)

Furthermore, strengthening the healthcare system is imperative for an effective response to the NCD crisis affecting youth. This includes training healthcare providers in NCD management, upgrading infrastructure and diagnostic capabilities, and ensuring the availability of essential medicines. Comprehensive integration of NCD services with other health programs can enhance the efficiency and effectiveness of healthcare delivery.(22)

Behavioural interventions that aim to modify lifestyle choices are also vital. Programs that focus on counselling, motivational interviewing, and peer education can effectively promote positive health behaviours and reduce NCD risk factors. Engaging youth in the design and implementation of these programs not only enhances their effectiveness but also ensures their sustainability and relevance.(23,24)

Policy implications of these interventions include the enforcement of robust national NCD policies that emphasize prevention, early detection, and management through a multi-sectoral approach. Strong tobacco control policies are essential to curb tobacco use among youth, a major NCD risk factor.(25,26) Additionally, promoting a healthy food environment and physical activity are crucial policy areas. Ensuring that young people have financial protection through adequate healthcare financing policies, such as comprehensive health insurance schemes, can alleviate the economic burden of NCDs on

families and improve access to necessary healthcare services.(28,29,31)

CONCLUSION

Effectively addressing the challenge of NCDs among youth in India and globally involves a multi-faceted approach that includes health promotion, accessible screening programs, strengthened healthcare services, behavioural changes, and supportive policies.

The rising prevalence of NCDs among the youth calls for an urgent reevaluation of current public health strategies and the implementation of more robust, integrated approaches that address the socio-economic and cultural dynamics of the population. Strengthening the healthcare infrastructure, coupled with effective public health policies and community engagement, will be key to mitigating the impact of these diseases on future generations.

AUTHORS CONTRIBUTION

All authors have contributed equally.

CONFLICT OF INTEREST

There are no conflicts of interest.

DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

REFERENCES

1. Champion KE, Parmenter B, McGowan C, et al. Effectiveness of school-based eHealth interventions to prevent multiple lifestyle risk behaviours among adolescents: a systematic review and meta-analysis. *Lancet Dig Health*. 2019;1(5):e206–e221.
2. Bennett JE, Stevens GA, Mathers CD, et al. NCD countdown 2030: worldwide trends in non-communicable disease mortality and progress towards Sustainable Development Goal target 3.4. *Lancet North Am Ed*. 2018;392(10152):1072–1088.
3. Long KQ, Ngoc-Anh HT, Phuong NH, et al. Clustering lifestyle risk behaviors among Vietnamese adolescents and roles of school: a Bayesian multilevel analysis of Global School-Based Student Health Survey 2019. *Lancet Reg Health-West Pac*. 2021;15
4. Afshin A, Sur PJ, Fay KA, et al. Health effects of dietary risks in 195 countries, 1990–2017: a

- systematic analysis for the Global Burden of Disease Study 2017. *Lancet North Am Ed.* 2019;393(10184):1958–1972.
5. Patton GC, Coffey C, Cappa C, et al. Health of the world's adolescents: a synthesis of internationally comparable data. *Lancet North Am Ed.* 2012;379(9826):1665–1675.
 6. Aktaş N. School-based nutrition promotion: nutrition friendly school program in Turkey. *Recent Dev Educ.* 2017;479
 7. Patton GC, Sawyer SM, Santelli JS, et al. Our future: a Lancet commission on adolescent health and wellbeing. *Lancet North Am Ed.* 2016;387(10036):2423–2478.
 8. Nethan, S., Sinha, D., & Mehrotra, R. (2017). Non Communicable Disease Risk Factors and their Trends in India. *Asian Pacific journal of cancer prevention:APJCP*, 18(7),2005–2010.
 9. Global Burden of Disease 2019 India Collaborators. (2020). Five insights from the Global Burden of Disease Study 2019. *The Lancet*, 396(10258), 1135-1159.
 10. World Health Organization. (2018). Noncommunicable diseases. Retrieved from
 11. Indian Council of Medical Research. (2020). National Non-communicable Disease Monitoring Survey (NNMS) 2017-18. New Delhi: Indian Council of Medical Research.
 12. Patel, V., et al. (2011). Chronic diseases and injuries in India. *The Lancet*, 377(9763), 413-428. [https://doi.org/10.1016/S0140-6736\(10\)61188-9](https://doi.org/10.1016/S0140-6736(10)61188-9)
 13. Ministry of Health and Family Welfare. (2020). Annual Report on National Health Mission. Government of India.
 14. Joshi, R., et al. (2016). Task shifting for non-communicable disease management in low and middle income countries – a systematic review. *PLoS ONE*, 11(8), e0161134.
 15. Misra, A., & Khurana, L. (2008). Obesity and the metabolic syndrome in developing countries. *Journal of Clinical Endocrinology and Metabolism*, 93(11 Suppl 1), S9-30. <https://doi.org/10.1210/jc.2008-1595>
 16. Anjana, R. M., et al. (2017). Physical activity and inactivity patterns in India – results from the ICMR-INDIAB study (Phase-1) (ICMR-INDIAB-5). *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), 127.
 17. Prabhat J, Binu J, Vendhan G, C. GP, Neeraj D, Rajesh K, et al. A Nationally Representative Case–Control Study of Smoking and Death in India. *N Engl J Med (Internet)* 2024;358(11):1137–47
 18. Rehm, J., et al. (2017). The relationship between different dimensions of alcohol use and the burden of disease—an update. *Addiction*, 112(6), 968-1001.
 19. Bhojani U, Beerenahalli TS, Devadasan R, et al. (2017). No longer diseases of the wealthy: prevalence and health-seeking for self-reported chronic conditions among urban poor in southern India. *BMC Health Serv Res.* 17(1):339.
 20. Government of India. (2017). National Health Policy 2017. Ministry of Health and Family Welfare.
 21. Ministry of Youth Affairs and Sports. (2017). National Sports Policy. Government of India.
 22. Ministry of Health and Family Welfare. (2013). National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke. Government of India.
 23. Government of India. (2019). Ayushman Bharat Pradhan Mantri Jan Arogya Yojana. Ministry of Health and Family Welfare.
 24. Ministry of Health and Family Welfare. (2018). National Tobacco Control Programme. Government of India.
 25. Prabhakaran, D., et al. (2016). Cardiovascular diseases in India: Current epidemiology and future directions. *Circulation*, 133(16), 1605-1620. <https://doi.org/10.1161/CIRCULATIONAHA.114.008729>
 26. Narain, J. P. (2016). Public Health Challenges in India: Seizing the Opportunities. *Indian Journal of Community Medicine*, 41(2), 85-88. <https://doi.org/10.4103/0970-0218.173495>
 27. Reddy, K. S., et al. (2016). Responding to the threat of chronic diseases in India. *The Lancet*, 366(9498), 1744-1749. [https://doi.org/10.1016/S0140-6736\(05\)67343-6](https://doi.org/10.1016/S0140-6736(05)67343-6)
 28. Thakur, J. S., et al. (2011). Epidemiology of non-communicable diseases in India: Challenges and strategies. *National Medical Journal of India*, 24(5), 280-287.
 29. Agarwal, A., et al. (2018). Implications of Public Health in Controlling Non-communicable Disease in India. *South East Asia Journal of Public Health*, 8(2), 12-17.
 30. Government of India. (2013). National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS): Operational Guidelines. Ministry of Health and Family Welfare.