

# Non-communicable Diseases in Nepal Research Roundup

*Making non-communicable diseases a national priority*

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# Non-communicable Diseases in Nepal-Research Roundup

October 2024



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## Roundup Summary

In October 2024, our search on non-communicable diseases and mental health-related literature in Nepal yielded nineteen published articles. Most of the studies covered cardiovascular diseases, followed by mental health, hypertension, diabetes, and cancer.

### **Readiness of the health system to provide non-communicable disease services in Nepal: a comparison between the 2015 and 2021 comprehensive health facility surveys**

**DOI:** <https://doi.org/10.1186/s12913-024-11606-8>

**Context:** Nepal faces a growing challenge with non-communicable diseases (NCDs), yet there are significant gaps in the healthcare system's ability to provide consistent prevention, diagnosis, and treatment services.

**Methodology:** The study used a comparative cross-sectional design analyzing data from the 2015 and 2021 Nepal Health Facility Surveys using tools like the DHS service provision assessment and WHO SARA indicators to assess readiness scores.

**Key message:** The availability of services for non-communicable diseases (NCDs) has improved from 2015 to 2021, but the readiness of health facilities to provide these services has not increased proportionally. Local and provincial governments should prioritize these improvements for better NCD care.

### **Treatment Adherence and Health-Related Quality of Life Among Patients with Hypertension at Tertiary Healthcare Facility in Lalitpur, Nepal: A Cross-Sectional Study**

**DOI:** <https://doi.org/10.2147/PPA.S476104>

**Context:** Hypertension is a major health issue in Nepal. Understanding medication adherence and its impact on the quality of life is crucial for shaping effective health policies and improving outcomes for hypertensive patients.

**Methodology:** This was a cross-sectional study conducted among 380 hypertensive patients at KIST Medical College and Teaching Hospital in Lalitpur, Nepal using the EQ-5D-5L and Hill-Bone Compliance to High Blood Pressure Therapy Scale (HBCTS).

**Key message:** Treatment adherence among hypertensive patients was suboptimal, which can negatively impact health outcomes. Improved medication adherence was linked to a better quality of life, highlighting the need to prioritize adherence for better health results.

## **Risk factors of type II diabetes among bankers of Kathmandu Metropolitan city: A cross-sectional study**

**DOI:** [10.34172/jrcm.34552](https://doi.org/10.34172/jrcm.34552)

**Context:** Bank employees are at higher risk for type 2 diabetes due to their sedentary lifestyle and high stress levels associated with their profession.

**Methodology:** This was a cross-sectional study conducted among 348 bank employees in Kathmandu Metropolitan City in 2020 using a pre-tested structured questionnaire based on the WHO STEP Instrument and the Perceived Stress Scale.

**Key message:** Bank employees face a high risk of developing type 2 diabetes due to factors such as poor dietary habits, stress, and other lifestyle-related risks. Measures promoting healthy lifestyles, stress management, and diabetes prevention awareness are crucial in such groups.

## **Clinical Profile of Peripheral Artery Disease of Patients Attending Shahid Gangalal National Heart Center, Janakpurdham, Nepal**

**DOI:** <https://doi.org/10.33314/jnhrc.v22i02.4874>

**Context:** Peripheral artery disease is a serious vascular condition that can lead to acute limb ischemia, posing significant health risks especially among those with existing cardiovascular concerns.

**Methodology:** This study included 386 high-risk patients for peripheral artery disease at Shahid Gangalal National Heart Center. Peripheral artery disease was diagnosed using an ankle-brachial index (ABI) of  $\leq 0.9$ , with further confirmation through Doppler studies.

**Key message:** Peripheral artery disease affects a significant number of high-risk patients, particularly women and those with hypertension. Early evaluation and treatment in high-risk individuals are essential to prevent complications and improve outcomes.

## **Prevalence of Coronary Artery Disease among Adults in Nepal**

**DOI:** <https://doi.org/10.33314/jnhrc.v22i02.5216>

**Context:** Coronary artery disease is a significant health concern and a leading cause of mortality, affecting the heart and blood vessels.

**Methodology:** This was a descriptive cross-sectional study that surveyed 12,557 individuals aged 20 and above, using multistage stratified cluster sampling. Data collection included interviews, physical exams, and lab tests to gather information on demographics and risk factors.

**Key message:** Coronary Artery Disease was seen in higher rates among older adults, urban residents, and those with conditions like hypertension, diabetes, or high cholesterol. Targeted

prevention and intervention strategies are needed to address these risk factors and reduce disease burden.

### **Prevalence of Depression among Geriatric Population in a Rural Municipality of Nepal: A Descriptive Cross-sectional Study**

**DOI:** <https://doi.org/10.31729/jnma.8781>

**Context:** Depression is a growing concern for the elderly, significantly impacting their quality of life.

**Methodology:** This was a cross-sectional study carried out in three randomly selected wards of Shivapuri Rural Municipality among population aged 60 and above selected through consecutive sampling while the depression levels were assessed using the Nepali version of the Geriatric Depression Scale (GDS-15).

**Key message:** About one-third of elderly individuals in the study experienced depression, with more than half reporting mild depression. Depression was more common among those under 75 years, males, married individuals, and those living in nuclear families.

### **Association of sleep quality, smartphone addiction, and depressive symptoms among undergraduate medical students in Nepal**

**DOI:** <https://doi.org/10.1007/s44202-024-00246-y>

**Context:** Sleep quality, smartphone addiction, and depression are interconnected, but is often overlooked due to limited research.

**Methodology:** A cross-sectional study was conducted with 212 undergraduate medical students at Maharajgunj Medical Campus, Tribhuvan University, Nepal using Pittsburgh Sleep Quality Index, Smartphone Addiction Scale Short Version, and Patient Health Questionnaire-9.

**Key message:** Smartphone addiction and poor sleep quality were found as important factors influencing depressive symptoms among undergraduate medical students emphasizing the need for further research to develop effective mental health interventions.

### **Trends and determinants of clustering for non-communicable disease risk factors in women of reproductive age in Nepal**

**DOI:** <https://doi.org/10.1371/journal.pone.0309322>

**Context:** Risks of non-communicable diseases like smoking, obesity, and hypertension often cluster together, affecting women of reproductive age.

**Methodology:** This study utilized data from the 2016 and 2022 Nepal Demographic and Health Surveys (NDHS), involving a total of 6,957 women for smoking and obesity data and 3,749

women for hypertension in 2022. A risk factor score ranging from 0 to 3 was created for each participant, and multivariable Poisson regression models were used to assess the determinants of risk factor clustering.

**Key message:** The prevalence of overweight, obesity, and other non-communicable disease (NCD) risk factors is rising among women, particularly those aged 30 and above, married or divorced, from wealthier backgrounds, and are working. Targeted public health efforts to address NCD risks, especially in these high-risk groups are needed.

### **Exploration of Post-traumatic Stress Disorder (PTSD) and Resilience in Female Internally Trafficked Domestic Workers from Nepal**

**DOI:** <https://doi.org/10.61274/apxc.2024.v03i02.006>

**Context:** Female domestic service workers in Nepal who have experienced internal trafficking face various challenges including post-traumatic stress disorder (PTSD).

**Methodology:** This study used a mixed methods design, with 25 participants completing questionnaires on resilience and PTSD. Additionally, 13 of these participants, who had worked in domestic service, took part in semi-structured interviews to discuss their experiences.

**Key message:** Women who experienced domestic service work were found to have high levels of PTSD but showed resilience despite this trauma suggesting need for further research to understand how some individuals maintain resilience despite complex challenges like internal trafficking and domestic service work.

### **A Research Study on Tobacco Associated Oral Potentially Malignant Disorders (OPMDs) Prevalent in Oral Mucosa of Lumbini Province/District Rupandehi Population of Nepal**

**DOI:** <https://doi.org/10.30958/ajhms.X-Y-Z>

**Context:** Oral mucosal lesions (OMLs) and potentially malignant disorders (OPMDs) like oral leukoplakia and submucous fibrosis are common in Rupandehi District, Nepal, primarily caused by the use of both smokeless and smoked tobacco.

**Methodology:** This descriptive, cross-sectional study was conducted from August 2003 to April 2024 with 500 participants visiting the Outpatient Department of Department of Oral Medicine, Diagnosis and Radiology, Universal College of Medical Sciences (UCMS), Bhairahawa.

**Key message:** High prevalence of oral mucosal lesions (OMLs) and potentially malignant disorders (OPMDs) linked to tobacco use was seen particularly among those aged 41 to 80 years. There is a need for tobacco cessation programs to prevent these conditions in Nepal.

## Prevalence and factors associated with overweight and obesity among adolescents in Nagarjun municipality: a cross-sectional study

**DOI:** <https://doi.org/10.1136/bmiph-2024-001675>

**Context:** Overweight and obesity are becoming more common among adolescents in low- and middle-income countries like Nepal, driven by social, behavioral, and lifestyle changes.

**Methodology:** This cross-sectional study was conducted between September 2022 and January 2023 among 768 randomly selected adolescents from 10 schools in Nagarjun Municipality, Nepal. Anthropometric measurements were taken to calculate body mass index.

**Key message:** Overweight and obesity among adolescents are strongly linked to a lack of physical activity and poor dietary habits, such as consuming high-calorie foods. There is the need for lifestyle interventions at schools and in homes to promote healthier habits.

## Antibiotic Susceptibility Pattern Among Cancer Patients with Urinary Tract Infection at a Tertiary Cancer Hospital in Nepal

**Link:** <https://pufomas.edu.np/puhj/index.php/journal/article/view/33/9>

**Context:** Cancer patients are more vulnerable to infections due to their immunocompromised state from treatment. Urinary tract infections are particularly common among these patients, contributing to significant morbidity.

**Methodology:** This retrospective study analyzed cancer patients with urinary tract infections at Kathmandu Cancer Center (KCC) in Nepal from September 2020 to June 2024. Antibiotic susceptibility was tested using the Kirby-Bauer disk diffusion method, and data on positive urine cultures, bacterial profiles, and test results were collected from the medical laboratory system.

**Key message:** Urinary tract infections are common among cancer patients, with Escherichia coli being the most frequently isolated bacteria highlighting that certain antibiotics, such as Amikacin and Nitrofurantoin, are more effective in treating these infections, while others show higher resistance.

## Analysis of the mean electrical axis of the heart from standard electrographic leads in normal adult males

**DOI:** <https://doi.org/10.61814/jkahs.v7i3.954>

**Context:** Electrocardiograms (ECG) are commonly used to diagnose cardiovascular diseases, and understanding the concept of the cardiac vector is essential for interpreting ECG results in clinical practice.

**Methodology:** This was a prospective cross-sectional study conducted among 116 male participants, aged 18-25 years, from Gandaki Medical College in Pokhara, Nepal, between June and September 2023. Electrocardiograms (ECGs) were recorded using a standard machine, and the cardiac vector was analyzed by measuring the electrical axis using Lead-I and Lead-III.

**Key message:** Heart's electrical axis in healthy males was found to be positively related to height but negatively related to weight and BMI. A higher BMI was associated with a shift in the heart's electrical activity to the left.

### Knowledge on Hypertension among Adult People in Morang, Nepal

**Link:** <https://pufomas.edu.np/puhj/index.php/journal/article/view/32/8>

**Context:** Hypertension is a major global health issue, particularly in low and middle-income countries, where a significant portion of the population is affected.

**Methodology:** This was a descriptive cross-sectional study conducted among 423 participants to assess hypertension knowledge among adults using a convenience sampling method through a structured interview schedule.

**Key message:** Some respondents had a good understanding of hypertension, less than half had poor knowledge. Key factors like education, ethnicity, and sources of health information were linked to better knowledge, suggesting the need for mass awareness programs.

### A survey of availability and affordability of polypills for primary and secondary prevention of cardiovascular diseases in selected countries

**DOI:** <https://doi.org/10.1093/eurheartj/ehae666.3587>

**Context:** The inclusion of polypills in the World Health Organization's Essential Medicines List highlights their potential to improve access to treatment for cardiovascular diseases.

**Methodology:** This was a cross-sectional survey conducted in 13 countries to assess the availability and affordability of polypills involving public and private sector facilities, with data collected from at least one public facility and three private pharmacies in each country using convenience sampling.

**Key message:** Polypills are not widely available or affordable in most countries, with only a few countries having limited access, particularly in the private sector.

## Cardiometabolic multimorbidity and associated risk factors in a cohort identified through community-based screening in Eastern Nepal

**DOI:** <https://doi.org/10.1093/eurheartj/ehae666.2800>

**Context:** Cardiometabolic diseases are a leading cause of premature death and illness in low- and middle-income countries like Nepal.

**Methodology:** This study analyzed secondary data from a community-based NCD intervention program involving 14517 adults screened for various NCDs between 2019-2023 in Eastern Nepal, focusing on cardiometabolic multimorbidity and its risk factors.

**Key message:** The study found that a significant number of adults in Eastern Nepal suffer from cardiometabolic multimorbidity, with older age and hypertension being key contributing factors.

## Lifestyle related health risk factors regarding non-communicable diseases among adults in Morang District

**DOI:** <https://doi.org/10.30574/ijrsa.2024.13.1.1844>

**Context:** Non-communicable diseases (NCDs) are the primary cause of death globally, with a higher burden in low- and middle-income countries like Nepal, highlighting the importance of understanding lifestyle-related risk factors for better health management.

**Methodology:** This was a cross-sectional study conducted among adults in Morang district, Nepal, to assess risk factors for non-communicable diseases, including obesity, smoking, alcohol consumption, low fruit and vegetable intake, insufficient physical activity, and elevated blood pressure.

**Key message:** Majority of participants had multiple risk factors for non-communicable diseases, with obesity being the most common. Tobacco and alcohol consumption, poor diet, insufficient physical activity, and high blood pressure were also prevalent. Public health efforts should focus on addressing these behaviors to reduce disease risk.

## Exploring Trends: Five-Year Analysis of Suicide Rates in Nepal

**DOI:** <https://doi.org/10.1155/2024/5396303>

**Context:** Suicide is a significant public health concern worldwide, with over 700,000 deaths annually, particularly affecting developing countries like Nepal.

**Methodology:** The study utilized data from the Nepal Police suicide database, covering the years 2019 to 2023 analyzing the trends in suicide rates based on factors such as age, gender, suicide methods, and provincial distribution.

**Key message:** Suicide rates in Nepal have been increasing over the past five years, with higher rates among males, especially above 18 years, and females under 18 with hanging as the most common method. Urgent action is needed from the government to implement targeted policies and strategies to prevent suicide.

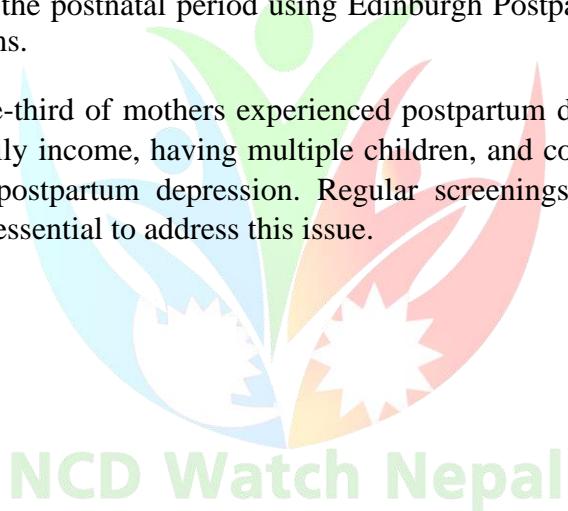
### Prevalence and risk factors associated with postpartum depression among mothers in selected municipalities of Bardiya, Nepal

**DOI:** <https://doi.org/10.1155/2024/5396303>

**Context:** Depression is a common mental health issue, and postpartum depression affects a significant number of women after childbirth, leading to emotional and social challenges.

**Methodology:** This was a community-based cross-sectional study conducted with 164 mothers in Bardiya, Nepal, during the postnatal period using Edinburgh Postpartum Depression Scale to assess depressive symptoms.

**Key message:** About one-third of mothers experienced postpartum depressive symptoms. Key factors such as lower family income, having multiple children, and complications after delivery were strongly linked to postpartum depression. Regular screenings and timely referrals for support and treatment are essential to address this issue.



We thank you all for joining our initiative to promote evidence-informed policymaking and promote public awareness of the non-communicable disease (NCDs) and related issues in Nepal- we are committed to staying up to date with the latest NCD research in Nepal.

This issue covers a summary of scientific publications on NCDs in Nepal for the month of October 2024.

Should you have colleagues who'd like to receive these updates via email ([ncdwatchnepal@gmail.com](mailto:ncdwatchnepal@gmail.com))

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