



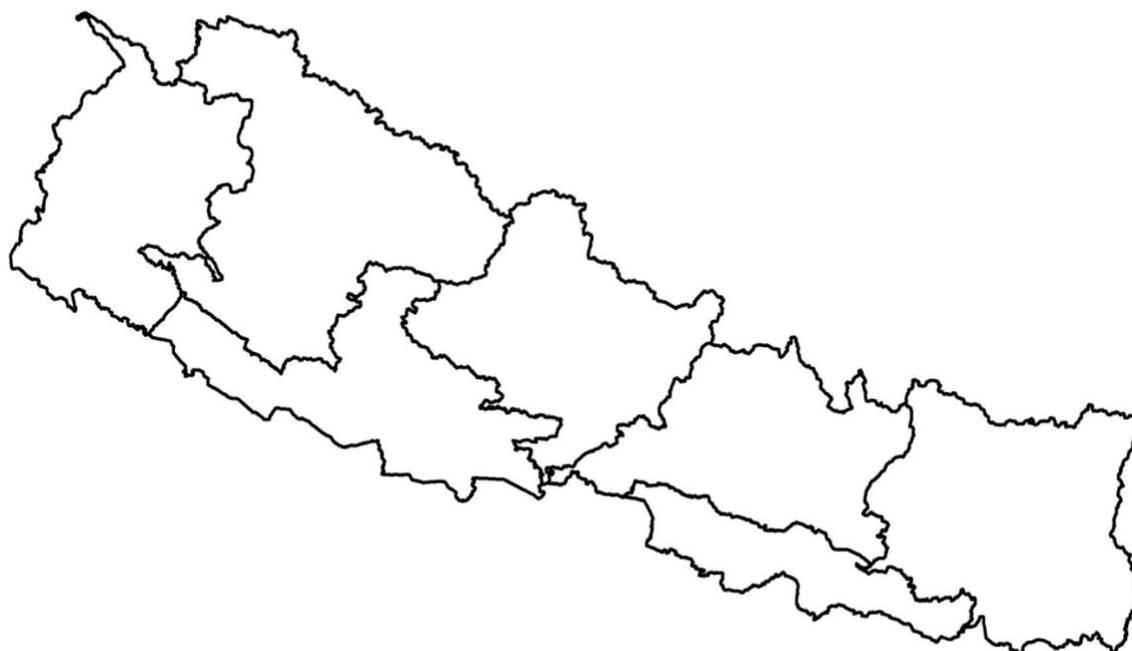
# Non-communicable Diseases in Nepal

Research Roundup December 2022

*Making non-communicable diseases a national priority*

# Non-communicable Diseases in Nepal-Research Roundup

**December 2022**



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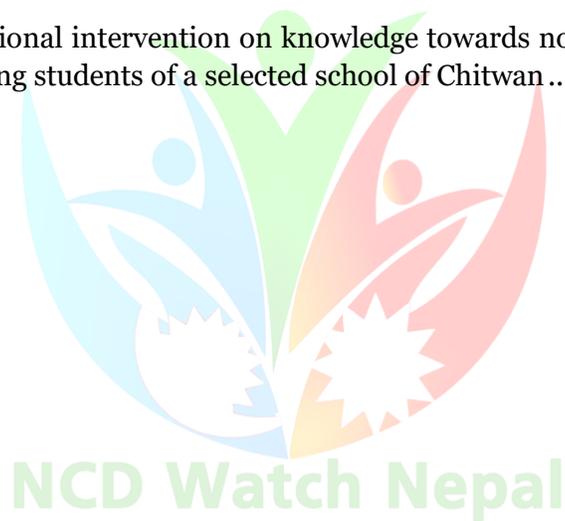
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## Roundup Summary

For December 2022, our scoping on non-communicable diseases and mental health in Nepal found 26 published articles. Most of the studies were cross-sectional and covered the topic of cardiovascular disease, diabetes, cancers, and mental health.

### Cardiovascular Risk Profiles and Pre-Existing Health Conditions of Trekkers in the Solu-Khumbu Region, Nepal

**DOI:** <https://doi.org/10.3390/ijerph192416388>

**Context:** Data on cardiovascular risk factors and disease in trekkers in the Himalayas are scarce. Trekking typically occurs at significantly higher altitudes, potentially triggering the risk of hypoxic pathomechanisms.

**Methodology:** This was an epidemiological study conducted in the Solu-Khumbu region in Nepal. Trekkers (n = 350) were recruited from guesthouses along the Everest Trek.

**Key message:** This study found that almost half (45%) had pre-existing conditions, mostly orthopedic and CVDs. Similarly, 25% were suffering from manifest acute mountain sickness. Adequate pre-travel examination, consultation, and sufficient personal preparation were rarely found. Hypertensive patients showed moderately elevated blood pressure.

### Threat biases associate with anxiety and depression in physically-abused young people with a history of child labour

**DOI:** <https://doi.org/10.1016/j.jbtep.2022.101765>

**Context:** Young people who have experienced early-life maltreatment preferentially attend to threat and draw more threatening interpretations.

**Methodology:** This cross-sectional study was conducted among 13 care homes in Kathmandu. A total of 100 young people rescued from illegal child work were assessed for childhood maltreatment and anxiety/depressive disorders.

**Key message:** Seventy young people reported a history of physical (and emotional) abuse. Abused participants with anxiety were slower to disengage from negative faces to engage with positive faces. Similarly, abused participants with depression endorsed more negative interpretations of ambiguous situations than those without depression.

## Burden of Diabetes Mellitus in Nepal: An Analysis of Global Burden of Disease Study 2019

**DOI:** <https://doi.org/10.1155/2022/4701796>

**Context:** Among people with diabetes mellitus (DM) in Nepal, only 52.7% were aware of their DM status. This is particularly concerning, given the consequences.

**Methodology:** This analysis is produced based on the estimates from the Global Burden of Disease Study (GBD) 2019 by the Institute for Health Metrics and Evaluations (IHME).

**Key message:** This study found a considerable increase in prevalence, mortality rate, and DALYs attributable to DM in Nepal, which could further increase in the future, posing a serious challenge to the health system. Prevention of DM requires collaborative efforts from multiple sectors for risk factors controlling interventions.

## Healthcare use and costs among individuals receiving mental health services for depression within primary care in Nepal

**DOI:** <https://doi.org/10.1186/s12913-022-08969-1>

**Context:** Integrating mental health services into primary care is a key strategy for reducing the mental healthcare treatment gap. Depression and other mental disorders are associated with increased healthcare costs to service users and health systems.

**Methodology:** In this study, a total of 192 primary care service users who screened positive for depression, as indicated by a PHQ-9, were randomized to receive a package of integrated care based on the Mental Health Gap Action Programme.

**Key message:** This study concluded that delivering psychotherapy within integrated services for depression resulted in greater healthcare use without significantly greater costs to the health system or individual.

## Psychological Distress among Pharmacists during Second Wave of Pandemic: A Cross-Sectional Study

**DOI:** <https://doi.org/10.1155/2022/3606351>

**Context:** Being one of the frontline healthcare workers, pharmacists untiringly delivered much-needed health services during the pandemic. However, data on the psychological impact among community pharmacists still need to be included in the Nepalese context.

**Methodology:** A cross-sectional study was conducted among 172 community pharmacists in Bharatpur. The COVID-19 peritraumatic distress index (CPDI) questionnaire was used to measure psychological distress.

**Key message:** Among the participants, 77.9% were severely distressed, while 22.1% were mild to moderately distressed due to the COVID-19 pandemic. Factors like education of bachelor and above, eight or more working hours, being unsatisfied with the job, and having experience of more than three years were significantly linked to severe psychological distress.

## Preferences of cancer patients as a guide to cancer prevention: a retrospective willingness to pay study in Nepal

**DOI:** <https://doi.org/10.1016/j.puhe.2022.10.022>

**Context:** Patients who have faced or facing the economic and mental burden of cancer can better understand the importance of early diagnosis.

**Methodology:** This was a primary survey among 600 diagnosed cancer patients randomly sampled from five hospitals in Nepal from December 2015–February 2016. This study used contingent valuation estimation methods to model patients' willingness to pay (WTP) through the Structural Equation Modelling framework.

**Key message:** Risk of re-occurrence plays a significant role in WTP. The direct effect of risk of re-occurrence on WTP was positive, but the higher the risk of cancer relapses, the higher pessimism was found among patients. Income positively impacted WTP, whereas one belonging to the backward Dalit section of the society had lower WTP for screening.

## Differences in risk factors for head and neck cancer among men and women in Nepal: A case-control study

**DOI:** <https://doi.org/10.1016/j.canep.2022.102319>

**Context:** Head and neck cancer (HNC) is a major cause of cancer morbidity and mortality in Nepal.

**Methodology:** This was a hospital-based case-control study conducted at the B.P. Koirala Memorial Cancer Hospital in Nepal from 2016 to 2018. A total of 549 HNC cases (438 men and 111 women) and 601 age-matched healthy controls (479 men and 122 women) were included in the study.

**Key message:** An increased risk of HNC for low education level and family income were observed among men. Though the incidence of HNC is higher among men, the AORs among women were higher than the men for known risk factors (smoking and tobacco chewing).

## Breath-Actuated Inhalation Therapy: Survey Of physicians' Perception (INTROSPECT) in Nepal

**DOI:** <https://doi.org/10.1080/02770903.2022.2158858>

**Context:** Breath-actuated inhalers (BAIs) are gaining attention in managing obstructive airway diseases (OADs).

**Methodology:** This was a cross-sectional study conducted among 141 physicians.

**Key message:** Most physicians felt that the right device should be easy to teach, learn and remember. They considered coordination and multiple steps as the primary challenges with pressurized metered-dose inhalers (pMDIs) and dry powder inhalers (DPIs). Physicians believed that BAIs could address the key challenges faced by using pMDIs and DPIs in asthma and COPD patients.

## Catastrophic health expenditure on chronic non-communicable diseases among elderly population: A cross-sectional study from a sub-metropolitan city of Eastern Nepal

**DOI:** <https://doi.org/10.1371/journal.pone.0279212>

**Context:** Chronic non-communicable diseases (CNCD) contribute to the major burden of disability and death worldwide. Due to the requirement for long-term treatment and care, the expenditure on CNCD is expensive.

**Methodology:** This was a community-based cross-sectional study among 280 elderly population with chronic non-communicable diseases in the Dharan Sub-metropolitan city of Eastern Nepal.

**Key message:** The median household, food, and health expenditures were 95325, 45000, and 2100 NPR, respectively. The proportion of the participants with catastrophic health expenditures was 14.6%. The single-living participants had 3.4 times higher odds of catastrophic health expenditure. This study recommended the provision of mandatory health insurance programs for the elderly to cut down catastrophic healthcare expenditures.

## Prevalence of prediabetes and associated factors of prediabetic stages: a cross-sectional study among adults in Nepal

**DOI:** <https://doi.org/10.1136/bmjopen-2022-064516>

**Context:** Prediabetes is a high-risk state for diabetes development with an annual conversion rate of 5%–10%.

**Methodology:** This is a community-based cross-sectional study from the DiPEP project in two urban settings in Nepal, Patan, and Dhulikhel. A total of 6222 participants were screened for prediabetes based on glycated hemoglobin (HbA1c).

**Key message:** The estimated prevalence of prediabetes was 5% among screened participants, and the female gender was associated with the prediabetic stage. As a large proportion of the population with prediabetes were not aware of their status, this study recommended regular community screening programs to detect individuals with prediabetes and provide them with a comprehensive lifestyle intervention for diabetes prevention.

## Clinicopathological characteristics of carcinoma penis over ten years in a tertiary-level oncology center in Nepal: a retrospective study of 380 cases

**DOI:** <https://doi.org/10.1007/s11255-022-03427-7>

**Context:** Carcinoma Penis comprises 1-10% of all malignancies in males.

**Methodology:** A retrospective cross-sectional study was carried out at the Urology Unit at BP Koirala Memorial Cancer Hospital, Bharatpur, Nepal. A total of 380 patients who underwent some form of surgical intervention were included.

**Key message:** The most common treatment for the primary tumor was partial amputation of the penis (74.2%). Similarly, the most common histology was the usual squamous cell carcinoma (SCC) in 94.2% of cases and 69% were well differentiated. The majority of the patients present late. Early recognition and prompt treatment are required to improve the overall outcome.

## Cardiac Surgery in Birgunj: Early Experience

**DOI:** <http://jnmc.com.np/index.php/jnmc/article/view/311>

**Context:** Cardio-vascular diseases are growing up in developing countries and are the leading cause of death worldwide.

**Methodology:** This retrospective study was carried out in the Department of Surgery of National Medical College and Teaching Hospital, Birgunj, Nepal. A total of 18 patients were included from 2019 to 2022 in this study.

**Key message:** This study found that coronary artery bypass surgery (CABG) was the most common surgery performed. Similarly, 44.4% of the patient develops a complication, out of which mortality occurred in 11.11% of patient. This study concluded that elective cardiac surgery is challenging at the study site.

## Thyroid Dysfunction Associated with Depressive Disorder: A Descriptive Cross-Sectional Study Done in a Tertiary Care Center of Eastern Nepal

**DOI:** <https://www.nepjol.info/index.php/JoNMC/article/view/50459>

**Context:** Depression is known to be associated with changes in the hypothalamic-pituitary-thyroid axis and thus may be accompanied by subtle thyroid dysfunction.

**Methodology:** This cross-sectional study was conducted among 130 patients diagnosed with depression at Nobel Medical College and Teaching Hospital, Birgunj, Nepal. Thyroid profile consisting of free tri-iodothyronine (FT<sub>3</sub>), free thyroxine (FT<sub>4</sub>), and thyroid-stimulating hormone (TSH) was estimated by chemiluminescence immunoassay.

**Key message:** The prevalence of abnormal thyroid function tests was 33.8%. The commonest thyroid abnormality was subclinical hypothyroidism (15.4%), followed by overt hypothyroidism (14.6%). Thyroid abnormality was more common among the severe form of depression (46.66%).

## Risk factors and clinico-pathological profile of female genital tract malignancies at BPKIHS

**DOI:** <https://www.nepjol.info/index.php/NJOG/article/view/48053>

**Context:** Genital tract is the most common site for tumors in females.

**Methodology:** It was a prospective descriptive study conducted among 61 patients diagnosed with a female genital malignancy in the Department of Gynaecology, BPKIHS, Nepal.

**Key message:** Among the participants, cervical cancer was the most common cancer (56.0%), followed by ovarian cancer (21.0%) and gestational trophoblastic neoplasia (13.0%). The majority of them had poor local hygiene (n=27; 79.4%), and the most common presentation was post-menopausal bleeding (n=29; 85.3%).

## Burden of Respiratory Diseases Attributable to Household Air Pollution in Nepal: National and Provincial Estimates

**DOI:** <https://www.nepjol.info/index.php/NJS/article/view/50799>

**Context:** Health effects associated with household air pollution are primarily respiratory and cardiovascular diseases which are among the top burden of diseases in Nepal.

**Methodology:** This study was conducted to estimate the Attributable Fraction (AF) and corresponding Attributable Burden (AB) of respiratory diseases associated with household air pollution.

**Key message:** The estimated AF of childhood pneumonia, ARI/pneumonia, and COPD/asthma are obtained as 34.6%, 42.5%, and 54.8%, respectively. Similarly, AB of childhood pneumonia, ARI/pneumonia, and COPD/asthma are obtained as 7.3, 63.6%, and 10.3 per 1000 population, respectively. AF was substantially higher in rural Nepal compared to urban Nepal. Provincially, Karnali was worst affected, with the highest attributions (45.3% - 65.6%) for the accounted burden of diseases.

## Association between Serum Uric Acid and Blood Glucose Level in Diabetic and Non-diabetic Patients

NCD Watch Nepal

**DOI:** <https://www.nepjol.info/index.php/nmcj/article/view/50576>

**Context:** Since the association of uric acid in patients without diabetes and with diabetes is not consistent, studies are required to know the actual trend of SUA in healthy and diabetic individuals.

**Methodology:** This cross-sectional study was conducted in the Department of Biochemistry and Internal Medicine at Dhulikhel Hospital, Nepal. A total of 130 diabetic patients and 130 non-diabetics were included in the study.

**Key message:** It was found that the hyperuricemia and median serum uric acid levels were significantly higher in people with diabetes than non-diabetics; the level of fasting and post-prandial blood glucose positively correlated with serum uric acid. Serum uric acid levels increased with age and duration of diabetes.

## Assessment of factors associated with poor glycemic control among patients with Type 2 diabetes mellitus

**DOI:** <https://www.nepjol.info/index.php/jdean/article/view/50352>

**Context:** Complications due to type 2 diabetes mellitus (T2DM) are directly related to glycemic control status.

**Methodology:** This was a hospital-based cross-sectional study conducted among a total of 105 cases of DM in Nobel Medical College and Teaching Hospital, Nepal.

**Key message:** Among the study participants, 58.2% had poor glycemic control. Fasting Blood Sugar Test (FBS), Post-Prandial Blood Sugar (PPBS), and duration of DM was associated with higher HbA1c leading to a higher prevalence of poor glycemic control.

## Visual Inspection with Acetic Acid (VIA) and Factors Associated with it for Cervical Cancer Screening in Nepal

**DOI:** <https://jhsw.org.np/index.php/jhsw/article/view/26>

**Context:** In Nepal, cervical cancer remains a significant public health issue, and visual inspection of the cervix with acetic acid (VIA) is an effective, affordable screening test.

**Methodology:** Eligible women between the ages of 15 to 60 were invited to cancer screening clinics in the five districts of Nepal. Altogether, 6994 visual inspections of the cervix with VIA were done

**Key message:** Among the total VIA being done, positive VIA was found in 259 (3.1%) patients. Pelvic inflammatory disease (PID) was found among 3901 patients. This study concluded that even in rural areas with limited resources, VIA administered by skilled female health professionals is a safe, reliable, and effective test that can save people from cervical cancer.

## Availability, affordability, and access to essential medications for asthma and chronic obstructive pulmonary disease in three low- and middle-income country settings

**DOI:** <https://doi.org/10.1371/journal.pgph.0001309>

**Context:** Despite the rising burden of chronic respiratory disease globally, there is limited information concerning the availability and affordability of treatment drugs for respiratory conditions in low- and middle-income countries (LMICs).

**Methodology:** Global Excellence in COPD Outcomes (GEC<sub>o</sub>) is a population-based study in three distinct geographic and economic regions. A cross-sectional survey of public and private pharmacies (including health centers and informal pharmacies) was conducted in Bhaktapur, Nepal.

**Key message:** Salbutamol (WHO-EML) monotherapy in any formulation was the most commonly available respiratory medication (93.7%). LABA-LAMA combination therapy was only available in Nepal (14.3% of pharmacies surveyed). The monthly treatment cost of respiratory medications was the lowest in Nepal among the three countries.

## Status of Health Literacy and associated factors among Type 2 Diabetes Mellitus in Nepal

**DOI:** <https://ijphap.com/index.php/home/article/view/1>

**Context:** Health literacy has become crucial to preventing and managing chronic diseases like type 2 diabetes Mellitus (T2DM).

**Methodology:** A community-based cross-sectional study was conducted among 204 T2DM patients in Pokhara Metropolitan City, Nepal.

**Key message:** The study showed that most (86.3 %) diabetes patients had adequate health literacy. Gender, marital status, educational status, occupational status, and hospitalization were found statistically significant with health literacy.

## Prevalence and factors associated with depression, anxiety, and stress symptoms among home-isolated COVID-19 patients in Western Nepal

**DOI:** <https://doi.org/10.1016/j.dialog.2022.100090>

**Context:** COVID-19-related stigma and fear of transmission may intensify depression, anxiety, and stress symptoms among home-isolated COVID-19 patients.

**Methodology:** This cross-sectional study was conducted among 402 home-isolated COVID-19 patients in Karnali province, Nepal.

**Key message:** The prevalence of depression, anxiety, and stress symptoms among home-isolated COVID-19 patients were 8.0%, 11.2%, and 4.0%, respectively. Depression, anxiety, and stress symptoms were positively associated with the presence of COVID-19 symptoms. Similarly, higher odds of anxiety symptoms were associated with the presence of comorbid conditions.

## Trend of tobacco use: Reviewing the STEPS surveys conducted in Nepal

**DOI:** <https://www.nepjol.info/index.php/jhp/article/view/50990>

**Context:** The trend of tobacco use has changed over time in the world including Nepal.

**Methodology:** This study has described the trend of tobacco use in Nepal based on the review of the findings of three consecutive STEP-wise approaches to the non-communicable disease risk factor surveillance (STEPS) survey in Nepal.

**Key message:** It was found that the trend of any tobacco use, smoked tobacco use, and smokeless tobacco (SLT) use declined to 28.9% from 37.1% to 17.1% from 26.2%, and to 18.3% from 18.6%, respectively during the period of 2007 to 2019. This shows that three forms of tobacco use decreased among men and women.

## Prevalence of Chronic Diseases and Quality of Life among Elderly People of Kathmandu, Nepal

**DOI:** <https://www.nepjol.info/index.php/nmcj/article/view/50580>

**Context:** The aging population tends to have a higher prevalence of chronic diseases worldwide.

**Methodology:** This was a community-based cross-sectional study done among 200 elderly people at Budanilkantha Municipality, Kathmandu, Nepal. A standardized tool of the WHOQOL-BREF questionnaire was used to assess the quality of life (QoL)

**Key message:** Among the participants, the prevalence of hypertension was the highest. The mean score of the environment domain was better than the physical health, psychological, and social relationships domains, respectively. QoL was statistically significant with an increase in literacy status, education of the head of the family, and involvement in decision-making.

## Multilevel factors appealing to junk food consumption among school children and adolescents: A systematic review

**DOI:** <https://www.nepjol.info/index.php/jhp/article/view/50981>

**Context:** Junk food consumption (JFC) is increasing and is common mostly among schoolchildren and adolescents (SCA).

**Methodology:** This was a systematic review that included 22 quantitative articles.

**Key message:** This study found that factors like age, sex, taste, and pleasure of eating junk food, knowledge of junk food, and attitude towards dietary choices of the microsystem (individual factors) and mass media exposure and marketing strategies of the macrosystem (public policy factors) remain the most influencing systems to consumption of junk food. The result implies that the researchers and policymakers need to consider multilevel factors while designing and implementing the school-based nutrition education program.

## Estimation of body fat percentage in the adult population in Nepal and assess its correlation with body mass index

**DOI:** <https://jcmc.com.np/jcmc/index.php/jcmc/article/view/699>

**Context:** BMI remains a widely used parameter to assess obesity. However, it does not account for fat and lean body mass.

**Methodology:** This cross-section study included 207 healthy subjects (17-25 years) of MBBS and BDS programs at the KIST Medical College, Nepal.

**Key message:** The mean BMI and BF% were  $21.8 \pm 2.9$  kg/m<sup>2</sup> and  $23.3 \pm 6.7$ , respectively. This study found a strong correlation between BF% and BMI.

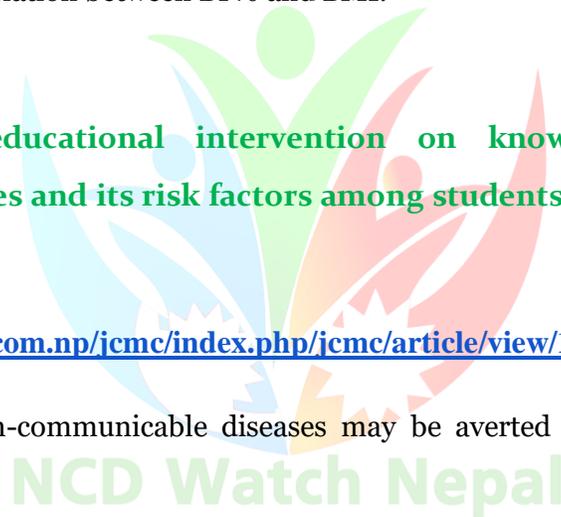
## Effects of health educational intervention on knowledge towards non-communicable diseases and its risk factors among students of a selected school of Chitwan

**DOI:** <https://www.jcmc.com.np/jcmc/index.php/jcmc/article/view/1223>

**Context:** Burden of non-communicable diseases may be averted by health promotion and prevention initiatives.

**Methodology:** This was a quasi-experimental pre-test-post-test design conducted among the plus-two students of a selected school in Chitwan.

**Key message:** This study found that a one-hour educational classroom package effectively improved the NCD-related knowledge of plus two students in the study area.



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 December 2022.

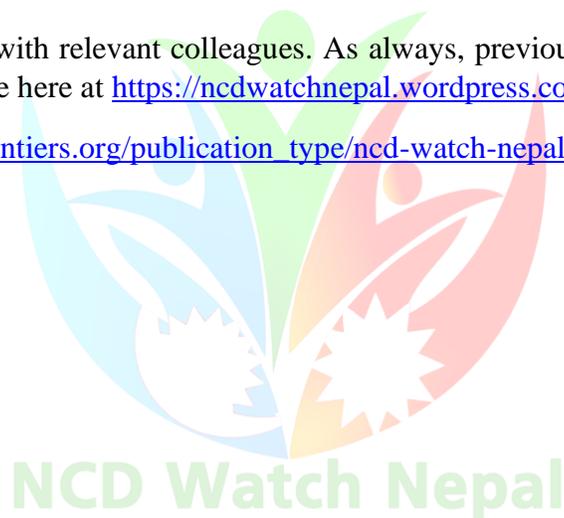
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*#actonNCDs #beatNCDs*