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The Economic Burden of Non-Communicable Diseases and Their Comorbidities: Analyzing Out-of-Pocket Expenditure and Its Implications

1.Introduction

Non-Communicable Diseases (NCDs) have become a significant public health challenge, accounting for 63% of all deaths in India (1). To combat this rising burden, the Government of India introduced the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), focusing on prevention, early detection, and effective management (2). NCDs and their associated comorbidities place a heavy financial strain on individuals and families, especially in low- and middle-income countries like India. It has been reported that existing health insurance schemes can potentially cover 70% of the population and include government subsidized schemes, social health insurance schemes and private voluntary health insurance (3). Despite government health initiatives, a substantial portion of NCD-related costs, including diagnostics, medications, hospitalizations, and long-term care—remains self-funded (4). High OOP spending often results in catastrophic health expenditures, financial instability, and even impoverishment (5). This study aims to assess the extent of OOP costs for NCD treatment, identify major cost drivers, and evaluate the socioeconomic impact on affected households. Furthermore, it will explore potential policy measures to alleviate financial hardships associated with NCD healthcare expenses.

2.Research Question

Q1. What are the key drivers of OOPE among individuals with NCDs and their comorbidities?
Q2. What is the extent of out-of-pocket expenditure (OOPE) incurred by households due to NCDs and their comorbidities?
Q3. How does OOPE for NCDs affect household financial stability and poverty levels over time?

3.Objectives

- To assess the extent of out-of-pocket expenditure (OOPE) incurred by households for Non-Communicable Diseases (NCDs) and their comorbidities.
- To evaluate the effectiveness of existing financial protection mechanisms for NCD management in reducing catastrophic health expenditures.
- To identify the key cost drivers contributing to high OOPE among individuals with NCDs.

4.Hypothesis

H1: Higher out-of-pocket expenditure (OOPE) for Non-Communicable Diseases (NCDs) is significantly associated with increased financial distress and household impoverishment.
H2: Limited insurance coverage and lack of financial protection mechanisms lead to higher OOPE for NCD management.
H3: The cost burden of NCDs varies significantly across different income groups, with lower-income households experiencing greater financial hardship.
H4: Increased OOPE for NCDs negatively impacts healthcare access and treatment adherence among affected individuals.
H5: Government health schemes and insurance coverage have a significant moderating effect in reducing OOPE for NCD-related expenses.

5. MATERIAL AND METHODS:

a. STUDY DESIGN:

- Quantitative Study: Analyzing healthcare expenditure patterns through structured survey (Google form) and secondary data.
- Cross-Sectional study: Data collection at a single point in time to assess financial burden.

b. SETTING: Hospitals and general population residing in districts of Gurugram and Noida

c. STUDY POPULATION:

- **Inclusion criteria**: Diagnosed and Undiagnosed Patients, Individuals above age 20, caregivers, Family members, Urban & Rural Population, Willing to participate, Healthcare Expenditure.
- **Exclusion criteria**: Individuals below age 20, non-consenting patients, Incomplete Response, fully funded government support for NCD.
- **Study tools**: Google form-based Questionnaire.

d. **STUDY DURATION:** 3 months (10th March 2025 to 31st May 2025)

e. **SAMPLE SIZE:** 200 sample size calculated using 95% C.I and 5% margin of error for the districts near NCR.

f. **SAMPLING TECHNIQUE:**
Sampling Method: Stratified random sampling

g. **DATA COLLECTION PROCEDURE**:
- The data collection process will be conducted through a structured questionnaire designed to assess out-of-pocket expenditure (OOPE) on Non-Communicable Diseases (NCDs) and their socioeconomic impact on households.
- Data from government reports such as the National Sample Survey (NSS), National Health Accounts (NHA), and World Health Organization (WHO) reports on healthcare expenditure will be reviewed.
- Published research articles and policy documents related to NCD-related financial burdens will be analyzed.

h. **OPERATIONAL DEFINITIONS:**

Out-of-Pocket Expenditure (OOPE):

Definition: The direct payments made by individuals or households for healthcare services without reimbursement from insurance or government schemes.

Measurement: Assessed through self-reported expenses on diagnostics, medications, hospital visits, and long-term care in the questionnaire.

Non-Communicable Diseases (NCDs):

Definition: Chronic diseases that are not transmitted from person to person, including diabetes, hypertension, cardiovascular diseases, cancer, and chronic respiratory diseases.

Measurement: Self-reported diagnosis or medical records confirming the presence of an NCD.

Catastrophic Health Expenditure (CHE):

Definition: When a household's healthcare expenses exceed a certain percentage (commonly 10% or 25%) of total household income, leading to financial distress.

Measurement: Calculated based on reported healthcare spending relative to household income.

Financial Burden:

Definition: The strain imposed on a household's financial resources due to high healthcare costs, potentially leading to debt or reduced spending on essential needs.

Measurement: Evaluated through survey responses on borrowing, asset sales, or reduced expenditure on food, education, and other necessities.

Health Insurance Coverage:

Definition: The extent to which an individual's or household's healthcare expenses are covered by public or private health insurance schemes.

Measurement: Determined through questionnaire responses on insurance type, coverage, and benefits received.

Socioeconomic Impact:

Definition: The effect of healthcare expenses on an individual's or household's overall financial stability, employment, and standard of living.

Measurement: Assessed through survey questions on changes in income, employment status, and financial coping mechanisms.

Access to Healthcare:

Definition: The ability of individuals to obtain necessary medical services without financial or geographical barriers.

Measurement: Evaluated based on self-reported ease of accessing hospitals, affordability of treatment, and waiting time for services.

6.DATA ANALYSIS PLAN: The data analysis plan will involve conducting a regression analysis to examine the relationship between independent and dependent variables.

7.ETHICAL CONSIDERATION: Data confidentiality and privacy will be ensured by anonymizing responses and securely storing data in password-protected databases. Access will be restricted to authorized researchers only. Ethical approval will be obtained from the relevant Institutional Ethics Committee before the study begins.

8.IMPLICATION OF RESEARCH: This study will provide valuable insights into the financial burden of Non-Communicable Diseases (NCDs) on households, helping policymakers design more effective healthcare financing strategies. The findings can guide government agencies in improving insurance coverage, subsidy programs, and preventive care initiatives to reduce out-of-pocket expenditure (OOPE). For the healthcare industry, the research will highlight key cost drivers, enabling hospitals and pharmaceutical companies to develop more affordable treatment options. Additionally, it will raise awareness among individuals and communities about the economic impact of NCDs, encouraging better financial planning and early disease prevention measures.

9. REFRENCES:

1. Union Health Minister Dr. Mansukh Mandaviya addresses annual meeting of the Friends of the UN Inter-Agency Task Force on the Prevention and Control of Non-Communicable Diseases (NCDs) and Mental Health [Internet]. [cited 2025 Apr 8]. Available from: https://pib.gov.in/pib.gov.in/Pressreleaseshare.aspx?PRID=1958944

2. National Programme for prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & stroke (NPCDCS) :: National Health Mission [Internet]. [cited 2025 Apr 8]. Available from: https://nhm.gov.in/index1.php?lang=1&level=2&sublinkid=1048&lid=604

3. Gupta R, Makkar JS, Sharma SK, Agarwal A, Sharma KK, Bana A, et al. Association of health insurance status with coronary risk factors, coronary artery disease, interventions and outcomes in India. Int J Cardiol Cardiovasc Risk Prev. 2022 Sep 1;14:200146.

4. Ambade M, Sarwal R, Mor N, Kim R, Subramanian SV. Components of Out-of-Pocket Expenditure and Their Relative Contribution to Economic Burden of Diseases in India. JAMA Netw Open. 2022 May 13;5(5):e2210040.

5. Sriram S, Albadrani M. Impoverishing effects of out-of-pocket healthcare expenditures in India. J Fam Med Prim Care. 2022 Nov;11(11):7120–8.