

Impacts of National Health Insurance on the Economic Burden and Health Service Utilization for Non-Communicable Diseases in Low-and-middle-income Countries: A Systematic Review

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Outline of Presentation

Introduction

Methods

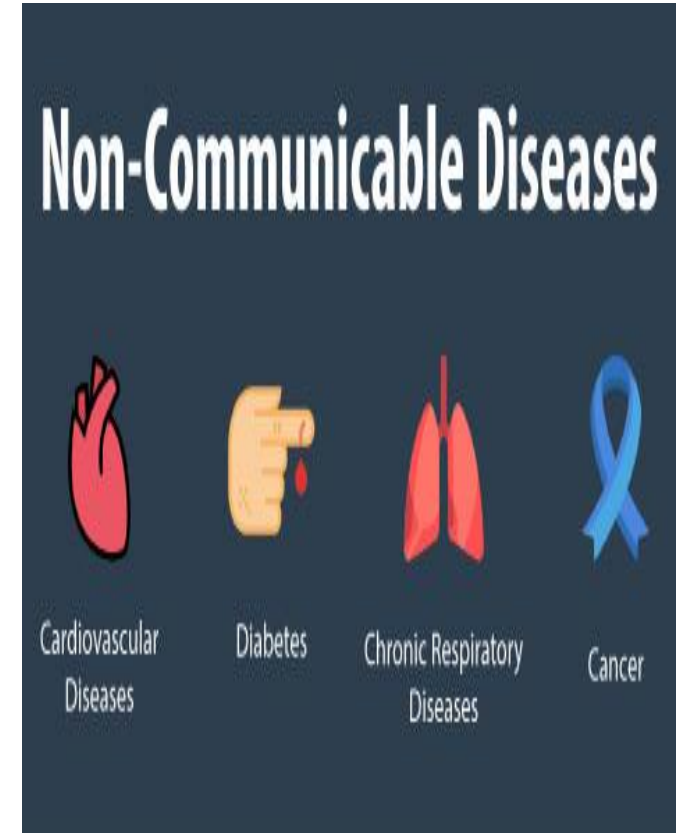
Results

Discussion

Conclusion

Introduction

- Non-communicable disease (NCD) accounts for more than two-thirds of all deaths globally ([1](#))
- Three-quarters of the NCD deaths occur in low-and-middle-income countries (LMIC) ([1](#))
- The NCDs impose a significant financial burden on families, hence need social protection (2-4)
- Cardiovascular diseases, cancer, chronic obstructive pulmonary diseases, and diabetes are the leading NCDs (6,7)



Introduction....

- Sustainable Development Goals (SDG) has set global targets for reducing one-third of premature deaths from NCDs
- The progress on the NCD to achieve the SDG target is already out of track ([11](#))



Introduction (Health Insurance).....

- Health insurance is meant to protect people from paying out-of-pocket expenditures (OOPE) and means to achieve UHC ([15](#))
- Health insurance has diverse characteristics having public and privately managed with volunteer or compulsory nature.
- National health insurance targets the general population or some specified groups and has different packages of benefits



Introduction....

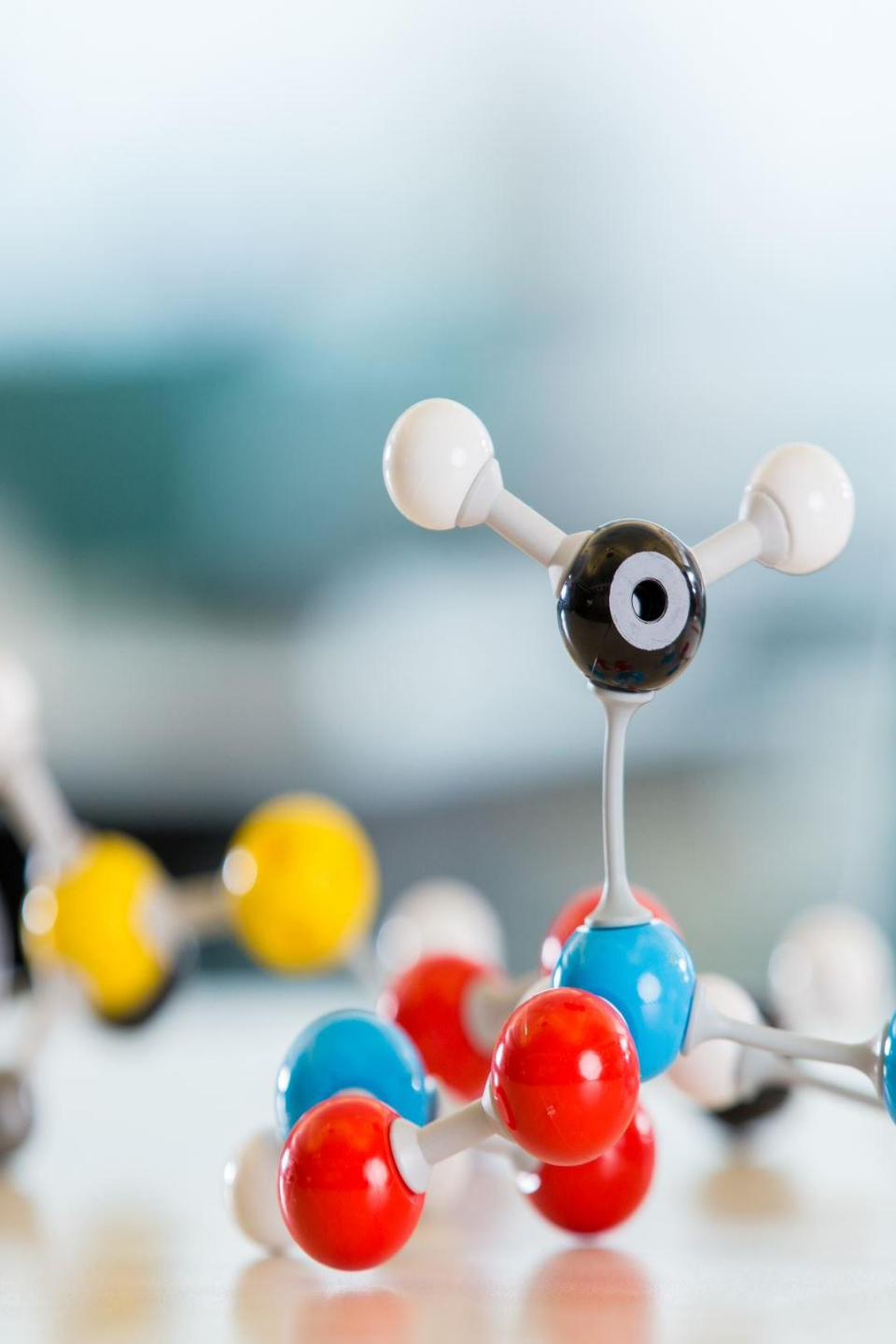
- Health insurance has positive effects on health service utilization (19, 20)
- Insured people are more likely to spend more due to high utilization of health services ([17](#)).
- There is increased Catastrophic Health Expenditure (CHE) from 9.6% in 2000 to 13.5% in 2019 ([12](#))

Introduction....

- Insurance program cannot protect people from economic burdens unless it has wider coverage for NCDs ([18](#))
- Previous studies were not consistent in getting financial protection from health insurance programs for chronic diseases ([25](#)).
- The study addresses the knowledge gap of the contribution of health insurance on preventing economic burden in households and health services utilization for NCD in LMICs.

OBJECTIVES

- To identify the determining factors of economic burden and health service utilization for national health insurance members with NCDs.
- To identify the contribution of national health insurance to the prevention of economic burden for people with NCDs.
- To identify the contribution of national health insurance to health service utilization of people with NCDs.
- To identify the mediating effect of health service utilization on the relationship between health insurance and prevention of economic burden for people with NCDs.



METHODS

(PROSPERO ID: CRD42023426053)

Search Strategy:

- The databases of Embase, Scopus and PubMed were used
- The population, Intervention, Comparison, and Outcome (PICO) framework was used for searching and screening the literature.
- The keywords used for searching literature are non-communicable disease (population), health insurance (intervention), economic burden, and health service utilization (outcomes), which were further searched by similar words.

Inclusion Criteria:

- Leading non-communicable diseases: cardiovascular diseases, chronic pulmonary diseases, cancers, and diabetes
- The studies conducted in LMICs
- Studies having economic burden or health service utilization or their combination as their outcomes.
- 10 years prior to the publication

Exclusion Criteria:

- Study with meta-analysis, systematic review, and review papers
- The studies with qualitative methods
- Studies on children aged less than 18 years
- Studies that did not have the economic burden or health service utilization or their combination as their outcomes
- Studies conducted in high-income countries
- Articles other than in the English language

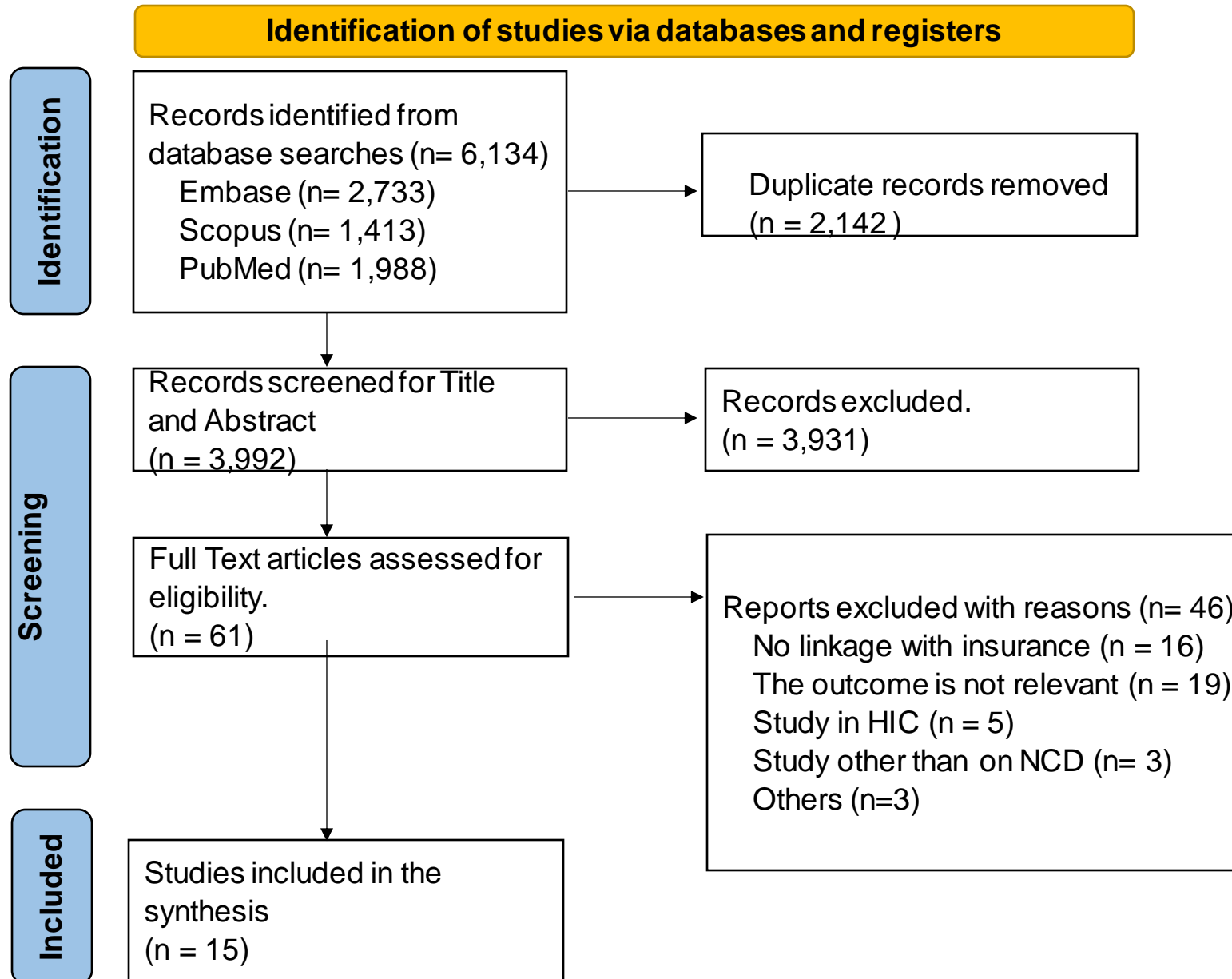
Data Analysis and Synthesis:

- The selected studies were reviewed and synthesized in groups regarding specific diseases and their outcomes.
- The review analyzed and synthesized the study methods, population characteristics, determining factors affecting outcomes, and effects of the public health insurance

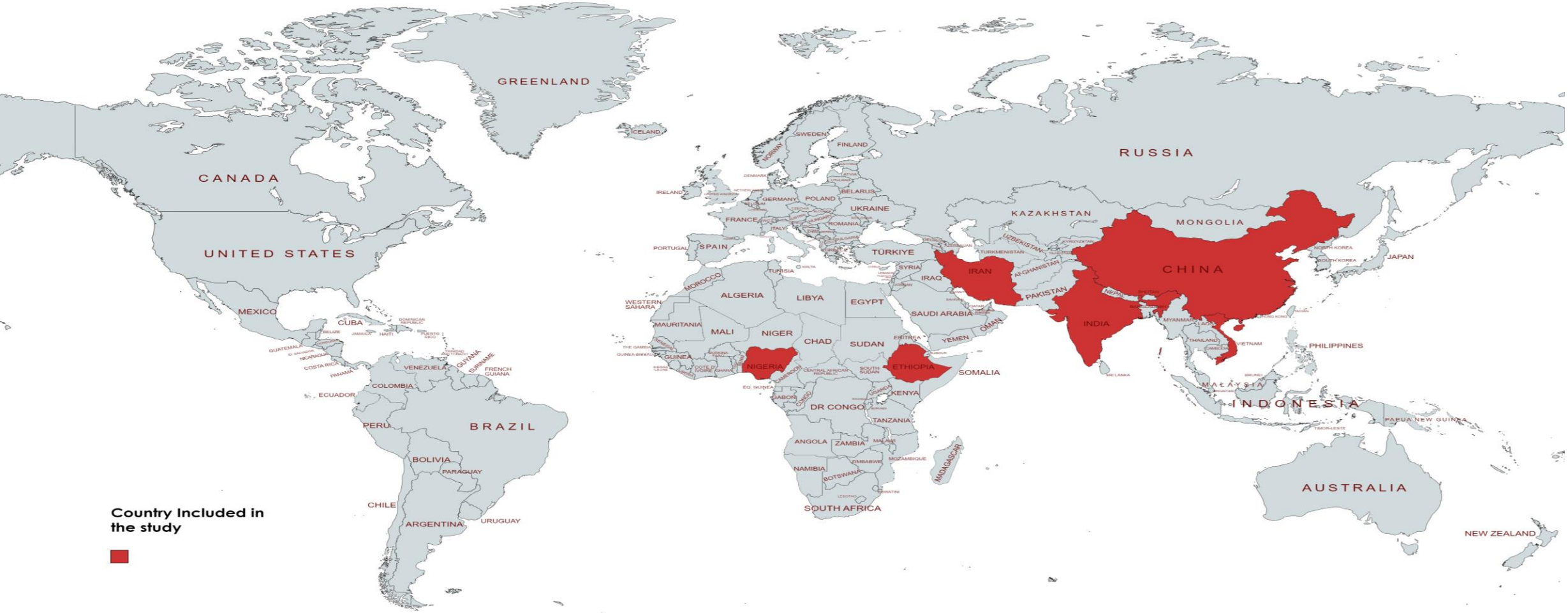


RESULTS

PRISMA Flowchart

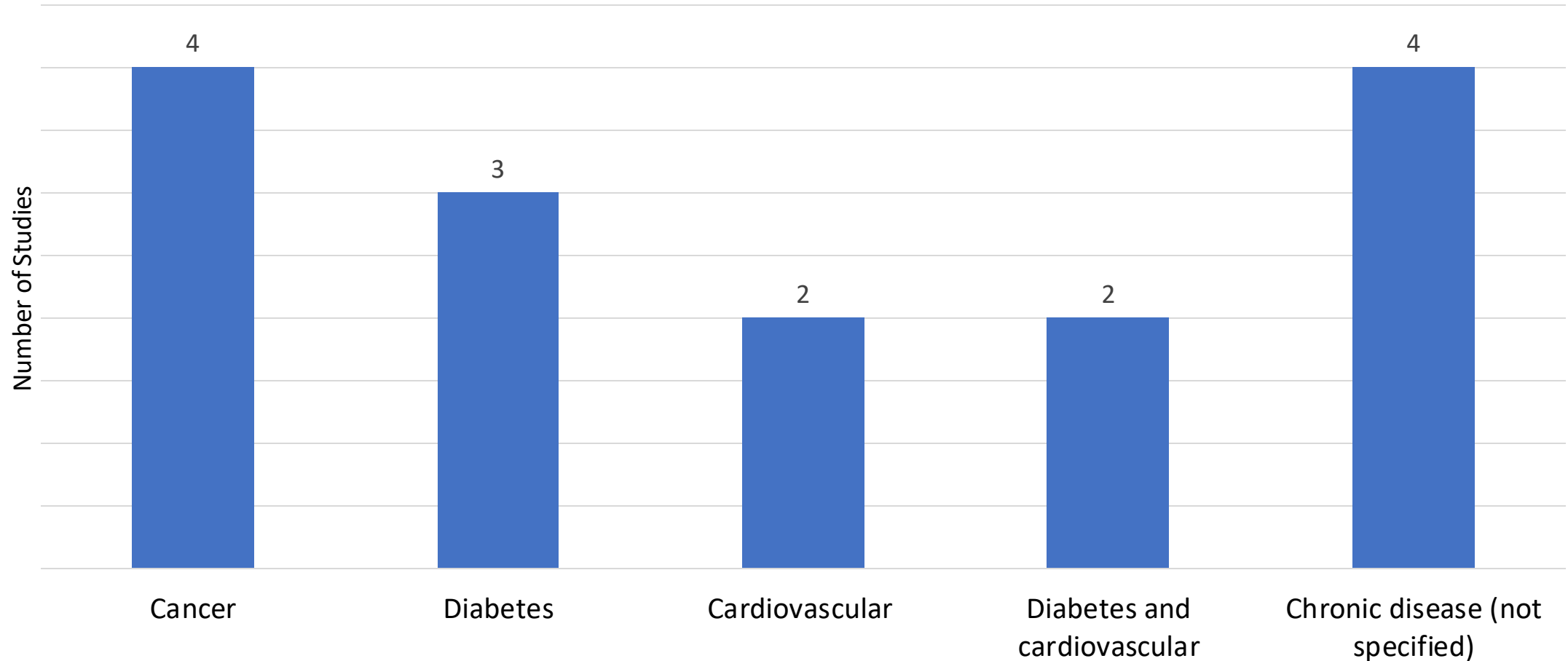


Countries Included in the Systematic Review

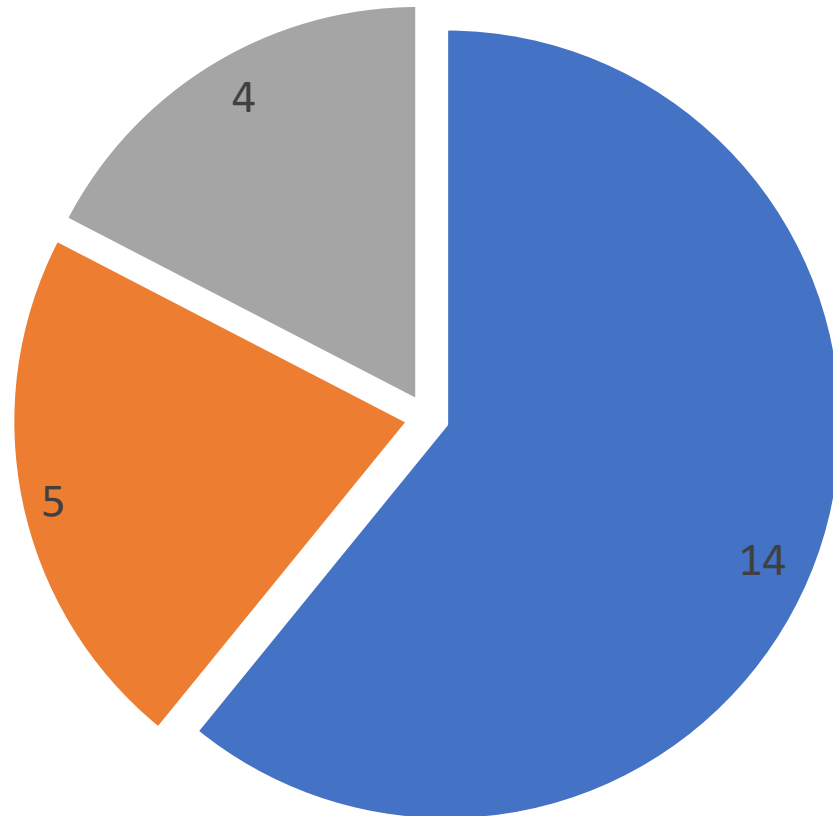


Created with mapchart.net

Types of NCDs analyzed in studies



Analysis of Outcomes



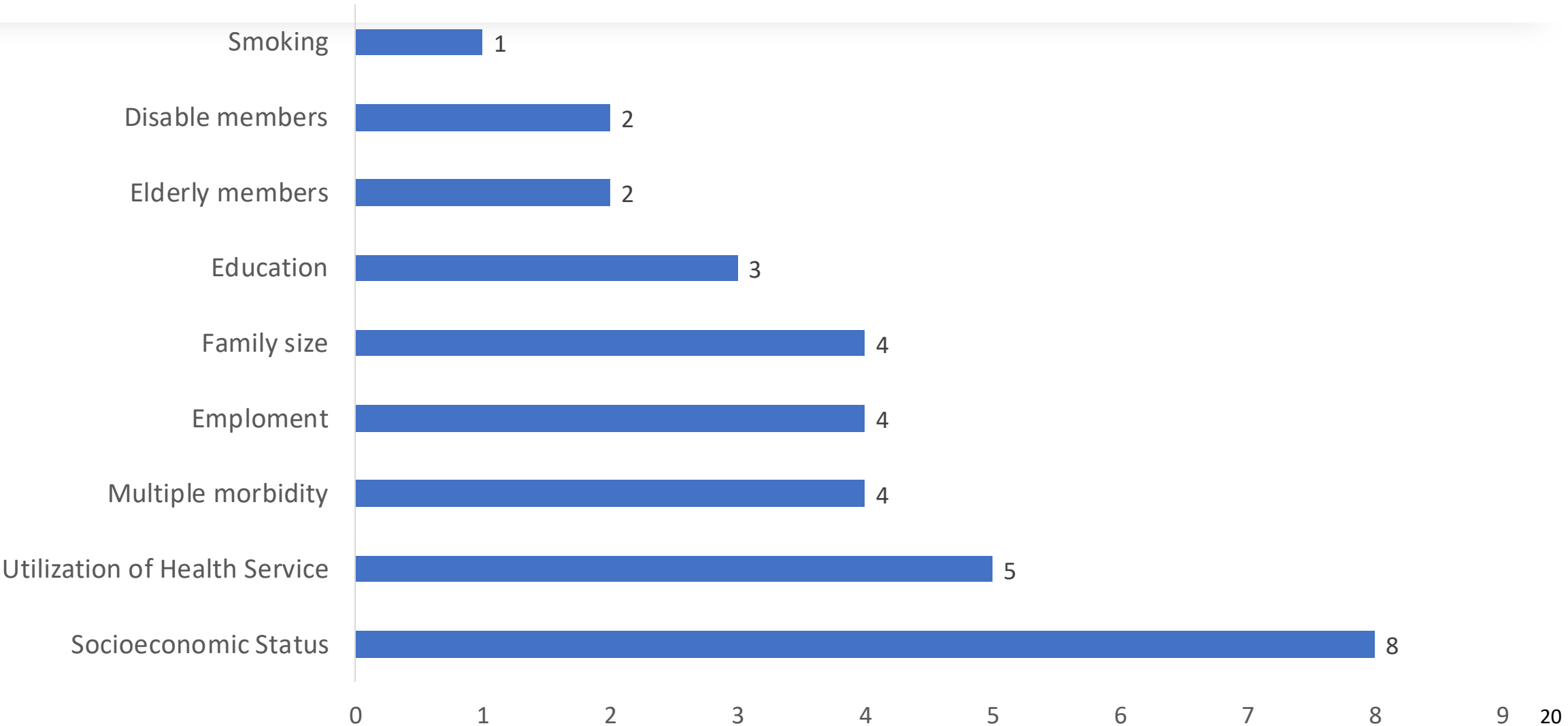
Number of studies

- Economic Burden
- Health Service Utilization
- Combination of Economic Burden and Health Service Utilization

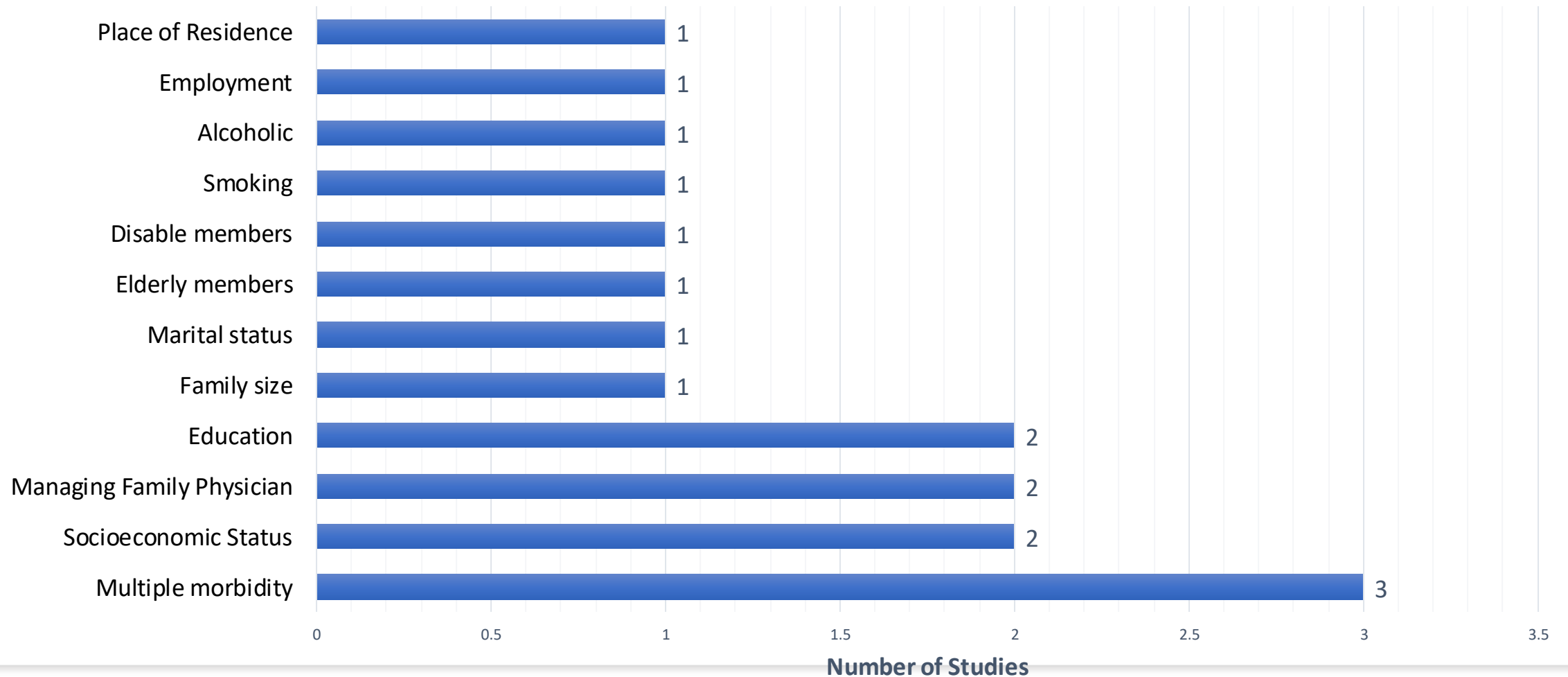
Characteristics of Public Health Insurance Systems

SN	Country	Types of Health Insurance	Benefit Coverage	Nature of Insurance
1	China	NCMS	Inpatient medical services	Voluntary
		URMI	Inpatient and catastrophic outpatient services	Voluntary
		UEMI	Inpatient and outpatient medical services (43)	Compulsory
2	Iran	Basic Health Insurance	Varies	Compulsory for formal sector
		Supplementary Health Insurance	Additional benefits	Voluntary (44)
3	India	Social Health Insurance	Hospital expenses for common illness	Voluntary
4	Vietnam	Social Health Insurance	Comprehensive: inpatient and outpatient medical services including major surgeries	Voluntary (45)
5	Ethiopia	Community Based Health Insurance (CBHI)	Comprehensive (All services except Tooth implantation and eye glasses) (46)	Voluntary
6	Nigeria	National Health Insurance Scheme (NHIS)	Primary, secondary and tertiary healthcare including medicine (47)	Voluntary

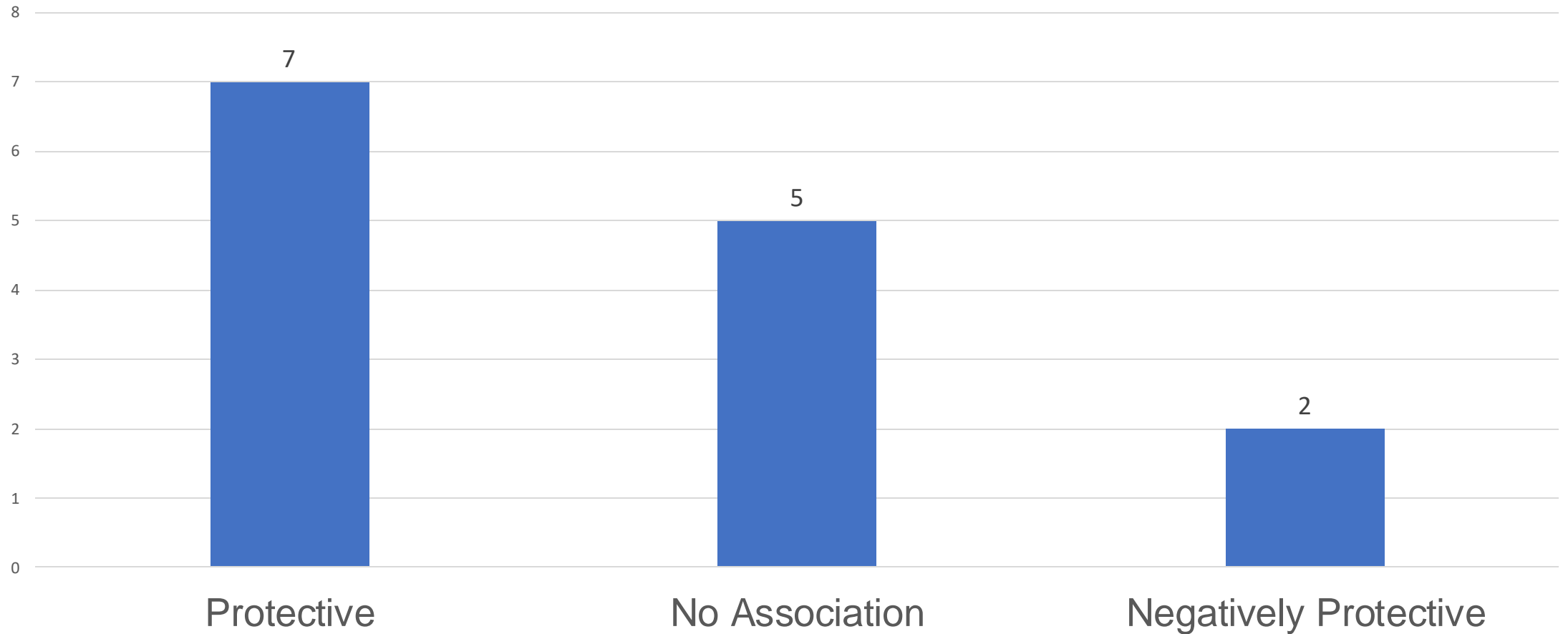
Determinants of Economic Burden Faced by Members of Public Health Insurance with NCDs



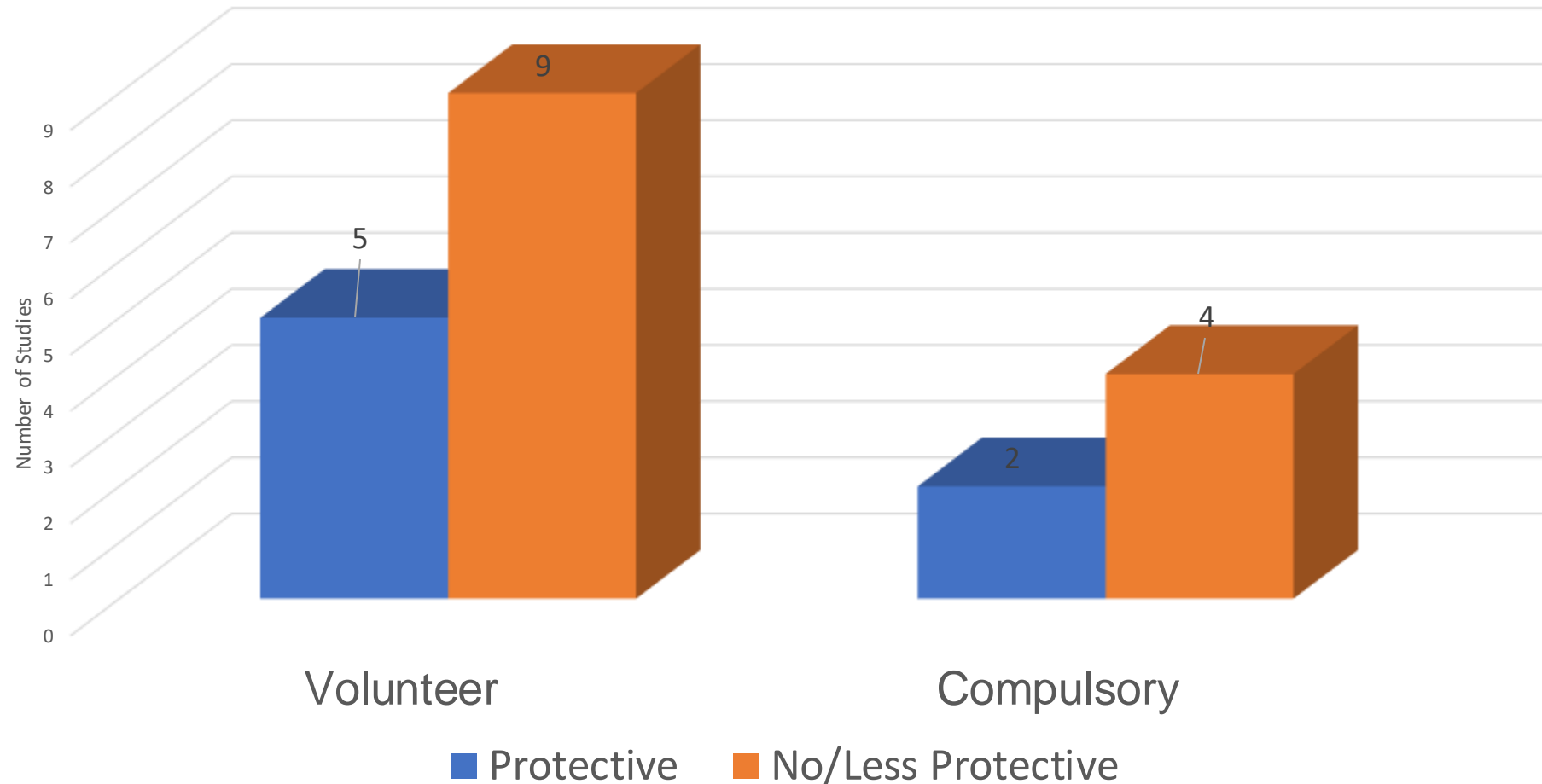
Determinants of Health Service Utilization among People Having Public Health Insurance with NCD



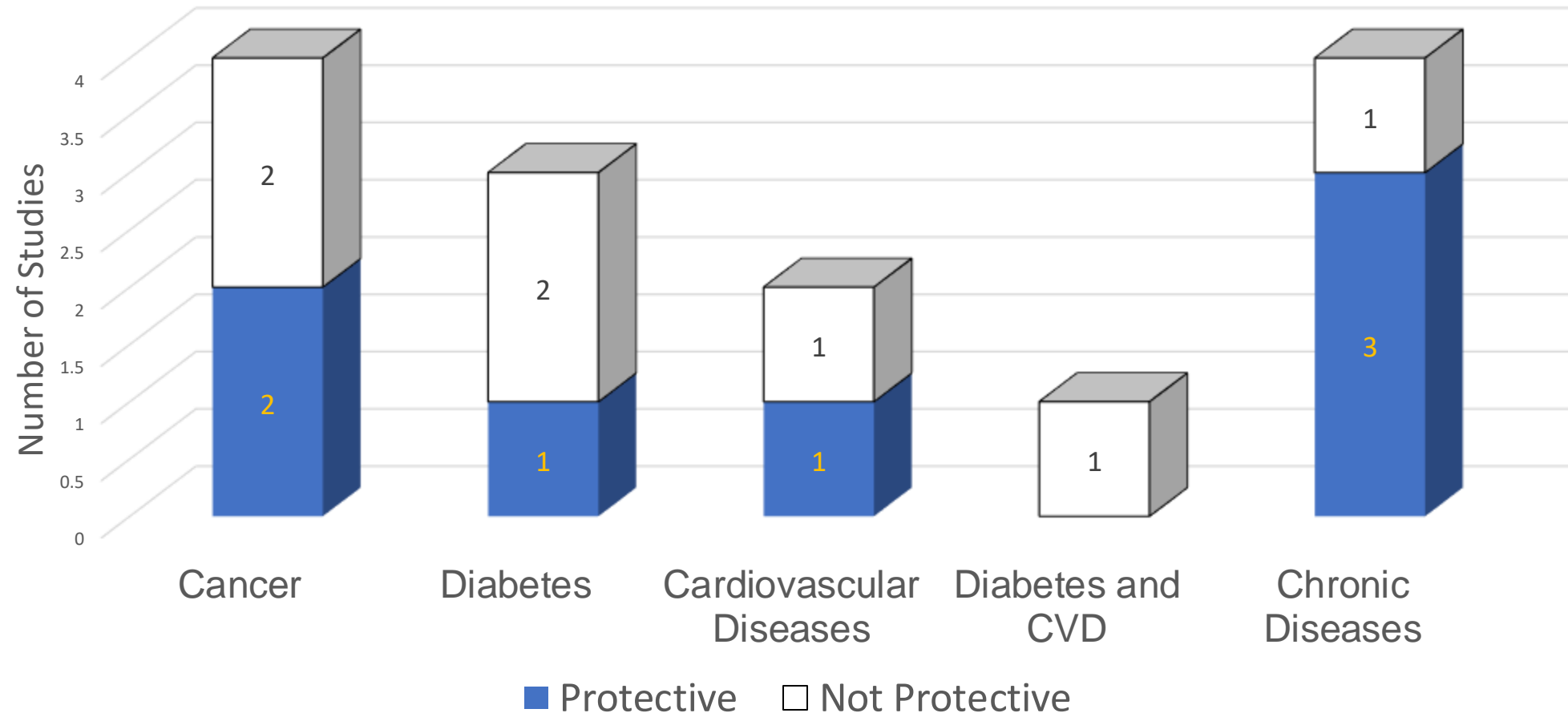
Effect of Public Health Insurance on Economic Burden



Effectiveness of Public Health Insurance in Protecting Economic Burden Based on Types of Health Insurance



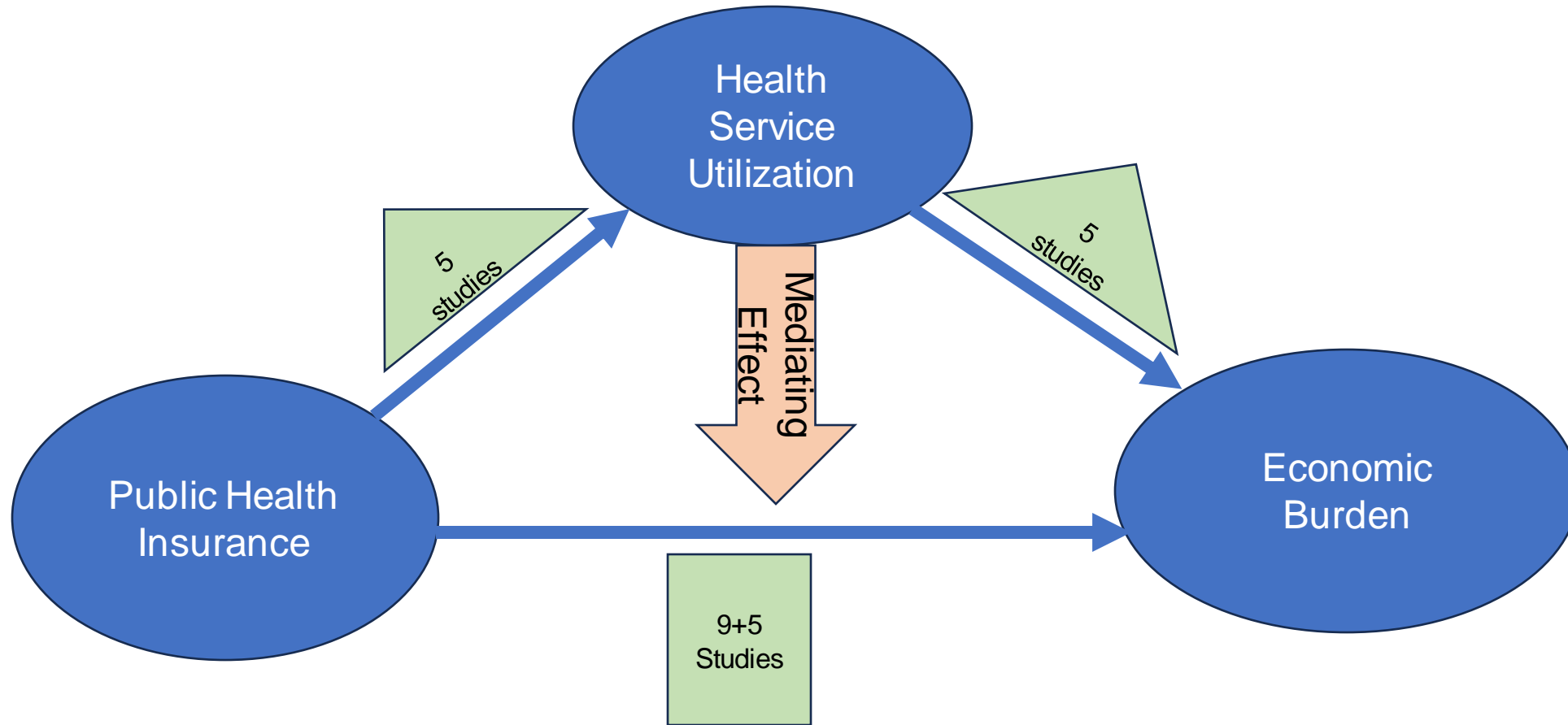
Effectiveness of Public Health Insurance in Protecting Economic Burden of Members with Different NCDs



Effect of Public Health Insurance on Health Service Utilization

All studies showed that Public Health Insurance had a significant positive effect on utilization

Mediating Effect of Health Service Utilization on Health Insurance and Economic Burden



DISCUSSION

Determinants of Economic Burden

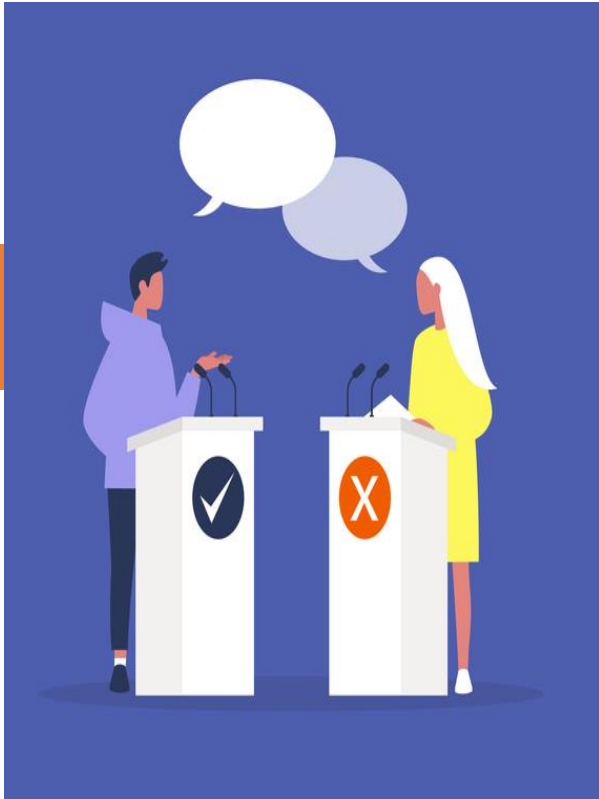
- Socioeconomic factor was the strong determinant but exhibited both protective and negative effects against the economic burden
 - Protective in Previous studies (48, 49, 50)
 - High Socioeconomic status families expensed more in healthcare (51)
 - High Awareness and higher accessibility to healthcare services
- Multiple morbidity, employment status, family size, education, having elderly and disabled as family members, and risk behavior of smoking and alcohol consumption are determinants
- Consistent in that the risk factors increase the economic burden on families (53, 54, 55, 56, 57)

Determinants of Health Service Utilization



- Socioeconomic status was a determining factor for health service utilization and coherent with previous studies ([58](#), [59](#)).
 - Economic factors increased the accessibility of health services and increased utilization ([59](#)).
- Co-morbidity, having family physicians, education, place of residence, types of health facility, employment status, smoking, and alcoholic behavior were the significant factors that were coherent with previous studies ([59-63](#))

Effects of Public Health Insurance on Economic Burden



Protective

Health insurance was a strong protective factor against the economic burden of health problems (49, 66-70)

Non-protective

Health insurance cannot be protective against economic burdens, especially for NCDs (54, 64)

Effects of Health Insurance.....

- Insurance having low coverage, reimbursement, and benefits packages are not protective against the economic burden (71,72)
- Health facilities that have not adequate readiness to provide services in terms of availability, capacity of health workforce, and adequate logistics, contribute to the poor services and bring the economic burden.

Mediating Effects of Health Service Utilization

- Health insurance increases people's behaviors as moral hazards in utilizing health services(49, 58, 59, 68, 76-78)
- The review also identified that health service utilization was strongly significant with increased economic burden.
- In contrast, the effect of health insurance on the prevention of economic burden could not be observed in the review.
- These contrasting findings might be due to the mediating effect of health service utilization on the association between health insurance and economic burden.

CONCLUSION

- Health insurance is the major determinant for both economic burden and health service utilization for NCDs
- Protective effects of public health insurance on the economic burden could not be conclusive
- The protective nature of health insurance could be related to the benefit package and coverage of the insurance systems.
- Further studies are required to develop an insurance system that is more protective against the economic burden of NCDs

Limitations

- Excluding qualitative studies might miss some important explorative factors
- The study excluded articles other than in the English language
- Different definitions for economic burden and health service utilization in the study
- Quality assessment of the articles was done by single author



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Thank you



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