

Catastrophic Health Expenditures: Evaluating the Effectiveness of Nepal's National Health Insurance Program Using Propensity Score Matching and Doubly Robust Methodology

Authors : Simrin Kafle, Ulrika Enemark

Abstract : Catastrophic health expenditure (CHE) is a critical issue in low- and middle-income countries like Nepal, exacerbating financial hardship among vulnerable households. This study assesses the effectiveness of Nepal's National Health Insurance Program (NHIP), launched in 2015 to reduce out-of-pocket (OOP) healthcare costs and mitigate CHE. Conducted in Pokhara Metropolitan City, the study used an analytical cross-sectional design, sampling 1276 households through a two-stage random sampling method. Data was collected via face-to-face interviews between May and October 2023, and analysis was performed using SPSS version 29, employing propensity score matching and doubly robust methodology. Among the 1276 samples, 534 households (41.8%) were enrolled in NHIP. Of them, 84.3% of households renewed their insurance card, though some cited long waiting times, lack of medications, and complex procedures as barriers to renewal. Approximately 57.3% of households reported known diseases before enrollment, with 49.8% attending routine health check-ups in the past year. The primary motivation for enrollment was encouragement from insurance employees (50.2%). The data indicates that 12.5% of enrolled households experienced CHE versus 7.5% among unenrolled. Enrollment into NHIP does not contribute to lower CHE (AOR: 1.98, 95% CI: 1.21-3.24). Key factors associated with increased CHE risk were presence of NCDs (AOR: 3.94, 95% CI: 2.10-7.39), acute illnesses/injuries (AOR: 6.70, 95% CI: 3.97-11.30), larger household size (AOR: 3.09, 95% CI: 1.81-5.28), and households below the poverty line (AOR: 5.82, 95% CI: 3.05-11.09). Other factors such as gender, education level, caste/ethnicity, presence of elderly members, and under-five children also showed varying associations with CHE, though not all were statistically significant. The study concludes that enrollment in the NHIP does not significantly reduce the risk of CHE, with enrolled households experiencing a higher incidence of CHE compared to unenrolled households. Key factors contributing to increased CHE include non-communicable diseases (NCDs), acute illnesses, larger household sizes, and poverty. To improve the program's effectiveness, it is recommended that NHIP benefits and coverage be expanded to better protect against high healthcare costs. Additionally, simplifying the renewal process and enhancing the availability of services could improve member satisfaction and retention. Targeted financial protection measures should be implemented for high-risk groups, and efforts should be made to increase awareness and encourage routine health check-ups to prevent severe health issues that contribute to CHE.

Keywords : catastrophic health expenditure, effectiveness, national health insurance program, nepal

Conference Title : ICHE 2025 : International Conference on Health Economics

Conference Location : London, United Kingdom

Conference Dates : June 28-29, 2025