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THE IMPACT OF COMMUNITY HEALTH NURSES ON THE PROMPT DETECTION OF KEY NON-COMMUNICABLE DISEASES WITHIN HEALTH INSURANCE FRAMEWORKS

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Abstract. Non-communicable diseases (NCDs), particularly cardiovascular diseases (CVD), hypertension, diabetes mellitus (DM), and dyslipidemia (DL), are the leading causes of global mortality, accounting for 71% of deaths annually. Early detection is critical to reducing their burden, especially in low- and middle-income countries (LMICs). This paper explores the pivotal role of community health nurses (CHNs) in identifying these conditions within populations covered by health insurance packages. Globally, CVD claims 17.9 million lives yearly, with hypertension affecting 22% of adults. Leveraging insurance-covered services, CHNs facilitate screening, risk factor identification, and timely intervention. This review highlights their contributions and the need for integrated health system support to enhance NCD management.

Keywords: community health nurses, non-communicable diseases, early detection, health insurance, cardiovascular diseases, hypertension, diabetes mellitus, dyslipidemia, primary healthcare.

Introduction. Non-communicable diseases (NCDs), including cardiovascular diseases (CVD), hypertension (HTN), type 2 diabetes mellitus (DM), and dyslipidemia (DL), account for 41 million deaths annually, or 71% of global mortality, with 77% occurring in LMICs [10]. CVD alone causes 17.9 million deaths each year, driven by risk factors such as hypertension, which affects 22% of adults worldwide [4, 11]. In Brazil, 24.7% of adults reported a hypertension diagnosis in 2018, with prevalence rising among older and less-educated populations [5]. These conditions, often asymptomatic until advanced stages, are termed "silent threats," underscoring the importance of early detection [3].

Community health nurses (CHNs) play a vital role in primary healthcare, serving as the first point of contact for many patients. With the expansion of health

insurance packages covering NCD screening and management, CHNs are uniquely positioned to identify at-risk individuals, promote preventive behaviors, and link patients to care. This paper examines their contributions to early detection of leading NCDs within insured populations, emphasizing their impact on reducing morbidity and healthcare costs.

Relevance of Work. The rising prevalence of NCDs, particularly CVD, HTN, DM, and DL, poses a significant public health challenge, with economic costs projected at US$47 trillion by 2030 [12]. In LMICs, where resources are limited, late diagnosis exacerbates mortality and disability, pushing families into poverty due to catastrophic healthcare expenses [10]. Health insurance packages increasingly cover NCD services, yet their effectiveness depends on early intervention. CHNs, through community-based screening and education, bridge this gap, making their role critical. This study is relevant as it aligns with global goals, such as the Sustainable Development Goals' target to reduce premature NCD deaths by one-third by 2030, and highlights the potential of CHNs to optimize insurance-driven NCD strategies.

Purpose. This review aims to evaluate the role of community health nurses in the early detection of leading NCDs—specifically CVD, hypertension, DM, and DL—within populations covered by health insurance packages. It seeks to identify their contributions to screening, risk factor management, and referral systems, while proposing strategies to strengthen their integration into primary healthcare frameworks.

Materials and Methods of Research. This systematic review synthesizes evidence from peer-reviewed literature, WHO reports, and national surveys, including Brazil's 2018 Vigitel data [5]. Searches were conducted in PubMed, Scopus, and Google Scholar using terms like "community health nurses," "non-communicable diseases," "early detection," and "health insurance." Studies published in English from 2010 to 2025, focusing on CHN roles in NCD screening and insurance-covered interventions, were included. Qualitative and quantitative data were analyzed to assess CHN effectiveness, with findings framed within the WHO's health system building blocks (e.g., service delivery, workforce) to evaluate system support for their role.

Results and Discussion

Epidemiology of NCDs and Insurance Coverage

CVD remains the leading cause of death globally, with 17.9 million fatalities annually, followed by complications from HTN, DM, and DL [4]. Hypertension affects 22% of adults, with a 40% higher risk of cardiovascular events among those over 30 [4, 14]. DM increases risks of myocardial infarction (MI) by 53% and stroke by 58%, while DL contributes to 49% of first MIs [14, 15]. Health insurance packages in many countries now cover screening and treatment for these conditions, yet access barriers persist, particularly in LMICs.

Role of Community Health Nurses

CHNs excel in early detection by conducting community-based blood pressure checks, glucose monitoring, and lipid profile assessments—services often reimbursed by insurance. In Brazil, CHNs leverage Vigitel survey insights to target high-risk groups, such as the elderly and less-educated [5]. They educate patients on modifiable risk factors (e.g., smoking, physical inactivity) and refer complex cases to specialists, reducing delays in care. Studies show CHN-led screening programs lower CVD incidence by identifying asymptomatic cases early [15].

Challenges and Opportunities

Despite their impact, CHNs face challenges, including limited training, workforce shortages, and inconsistent insurance coverage for preventive services. In LMICs, only 77% of NCD deaths are addressed due to resource constraints [4]. However, integrating CHNs into insurance frameworks enhances cost-effectiveness, as early detection reduces hospitalizations—a key driver of socio-economic costs [3]. Strengthening their role requires investment in training and technology, aligned with insurance policies.

Conclusion. Community health nurses are indispensable in the early detection of leading NCDs, including CVD, hypertension, DM, and DL, particularly within populations covered by health insurance packages. Their community-level interventions improve screening, risk factor management, and referral processes, mitigating the NCD burden. However, maximizing their impact demands enhanced training, workforce support, and broader insurance coverage for preventive care. By empowering CHNs, health systems can achieve sustainable NCD control, aligning with global health priorities and reducing long-term morbidity and costs.

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