Are WHO "best buys" for non-communicable diseases effective in low-income and lower-middle-income countries? A systematic review

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Abstract

Background The central plank of the global strategy to combat non-communicable diseases (NCDs) is a cluster of highly cost-effective interventions that WHO has dubbed "best buys". These 24 interventions promoted by WHO include tobacco taxation, salt reduction, cervical screening, and aspirin. Although the greatest burden of NCDs is in low-income and lower-middle income countries, evidence for most of the best buys comes from high-income countries. We did a systematic review to assess evidence for the effectiveness of best buys in low-income and lower-middle-income countries (LLMICs), where the need for effective NCD interventions is greatest.

Methods Using a registered protocol (PROSPERO: 42016039051) and following PRISMA guidelines, we searched 13 major databases for studies that quantified the effectiveness of the 24 interventions as defined in the 2013–20 Global Action Plan on NCDs. We included studies that were undertaken in 83 countries defined by the World Bank as LLMICs, published between Jan 1, 1990, and Feb 5, 2015. We accepted interrupted time-series designs as well as trials that compared interventions with usual health care. Two reviewers independently screened papers using a piloted form. We used study-specific Newcastle-Ottawa and Cochrane tools to assess risk of bias and adopted a narrative approach to data synthesis. Primary outcomes were NCD-related mortality, morbidity, and risk-factor prevalence.

Findings Our search returned 2672 records after duplicate removal and we included 36 studies in the final review, of which 26 had been done in India. 19 of the 36 studies reported on tobacco-related best buys, two pertained to diet and physical activity, four were on cardiovascular medication, and 11 on cancer interventions. Only four "best buys" had two or more studies that showed that the intervention was effective: group smoking reduction programmes, smoking bans in public places, cervical cancer screening, and hepatitis B immunisation. There was no evidence for the effectiveness of any best-buy interventions in 74 of the 83 LLMICs (89%).

Interpretation There is an urgent need to evaluate whether established NCD-prevention policies from high-income countries are effective in low-income settings. Our exact following of the wording of the WHO best buy definitions might have excluded some relevant studies; however, our review was comprehensive in scope and had a very robust search strategy.

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Declaration of interests
We declare no competing interests.

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