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Using the INDEPTH HDSS to build capacity for chronic non-communicable disease risk factor surveillance in low and middle-income countries

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Background

Chronic non-communicable diseases (NCDs) are the leading cause of morbidity, mortality, and disability worldwide. More than 80% of chronic disease deaths occur in low-income and middle-income countries. Epidemiological data on the burden of chronic NCD and the risk factors which predict them are lacking in most low-income countries. The INDEPTH Network (http://www.indepth-network.org) which includes the Health and Demographic Surveillance System (HDSS) with many surveillance sites in low-middle income countries provided an opportunity to establish surveillance of the major chronic NCD risk factors in 2005 using a standardised approach.

Objective

This paper presents the conceptual framework and research design of the chronic NCD risk factor surveillance within nine rural INDEPTH HDSS settings in Asia.

Methods

This multi-site study was designed as a baseline cross-sectional survey with sufficient sample size to measure trends over time. In each of nine HDSS sites in five Asian countries, a sample of 2,000 men and women aged 25–64 years, using the WHO STEPwise approach to Surveillance (http://who.int/chp/steps), was selected using stratified random sampling (in each 10-year interval) from the HDSS sampling frame.

Results

A total of 18,494 men and women from the nine sites were interviewed with an overall response rate of 98%. The major NCDs risk factors included self-reported information on tobacco and alcohol consumption, fruit and vegetable intake, physical activity patterns, and measured body weight, height, waist circumference, and blood pressure. A series of training sessions were conducted for research scientists, supervisors, and surveyors in each site. Data quality was ensured through spot check, re-check, and data validation procedures, including accuracy and completeness of data obtained. Standardised data entry programme, created using the EPIDATA software, was used to ensure uniform database structure across sites. The data merging and analysis were done using STATA Version 10.

Conclusion

This multi-site study confirmed the feasibility of conducting chronic NCD risk factor surveillance in the low and middle-income settings by integrating the chronic NCDs risk factor surveillance into an existing HDSS data collection and management setting. This collaborative work has provided reliable epidemiological data as a basis for developing chronic NCD prevention and control activities.

chronic non-communicable diseases | risk factor surveillance | INDEPTH Network | low-middle income countries | WHO STEPS

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