Policy Forum

Effectiveness of Adherence to Standardized Hypertension Management by Primary Health Care Workers in China: a Cross-sectional Survey 3 Years after the Healthcare Reform

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The standardized hypertension management provided by primary health care workers is an important part of China's recent health care reform efforts. Investigating 5,116 hypertensive patients from a cross-sectional survey conducted by the Chinese Center for Disease Control and Prevention in 2012, this study found that adherence to standardized hypertension management is associated with positive effects on hypertension-related knowledge, healthy lifestyle behavior, antihypertensive medical treatments, and blood pressure control. It will be necessary to provide primary health care workers with sufficient training and reasonable incentives to ensure the implementation and effectiveness of hypertension management.

Key words: Hypertension; Primary health care; Community health workers; China

Hypertension is a major global public health problem contributing to heart disease, stroke, kidney failure, premature mortality, and disability. In China, the prevalence of hypertension in adults rocketed from 18.8% in 2002 to 33.5% in 2010[1], while the diagnosis and treatment rates of hypertension remained low[2]. A recent analysis revealed that the awareness, treatment, and control rates of hypertension in 115 communities in China were 41.6%, 34.4%, and 8.2%, respectively[3].

In 2009, China launched new health care reforms, with most of the strategies closely linked to chronic disease control, including management of hypertension[4]. Hypertensive patients aged 35 years and above were provided free management services by the local primary health care workers, who were responsible for establishing health files, providing annual basic health examinations, and regular follow-ups at least four times per patient per year. According to the National Essential Public Health Services Specifications (2011), the aforementioned process, as a whole, was regarded as the standardized management. The national government designated general practitioners, public health practitioners, nurses, and village doctors working at primary health care institutions (PHIs) as hypertension management service providers, and they were referred to as 'gatekeepers in health care.' PHIs included community health centers/stations in urban areas and township hospitals/clinics in rural areas. Although there was a large influx of funds from the national and local governments and a great deal of efforts from PHIs, there were concerns about the implementation and effectiveness of the hypertension management program. Grassroots health workers, particularly village doctors whose education and training were rather of a low standard, were thought to be inadequately qualified to provide the standardized care[5].

In 2012, after 3 years of the health care reform, the Chinese Center for Disease Control and Prevention (China CDC) conducted a survey to estimate the implementation and effects of adherence to the standardized hypertension management program. The analysis was conducted under the assumption that if the management procedures were implemented, the standardized management rate should be high, leading to improved healthy lifestyle behaviors and blood pressure control.

In this cross-sectional survey, 8 out of the 31 Chinese mainland provincial-level administrative regions were selected to ensure a broad geographical representation: Jiangsu, Zhejiang, Jiangxi, Hubei, Sichuan, Guangxi, Yunnan, and Xinjiang. From these provinces, 15 districts or counties were selected based on the intention and ability of the local CDC to accept the commitment, with one county and one district selected from each province except for only one county being selected

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from the Zhejiang province. Using stratified random sampling, all PHIs of each district or county were divided into three groups (good, medium, and poor) based on their performance assessment within the district or county in 2011. One PHI was randomly selected from each group, resulting in a total of 45 PHIs. Using proportion sampling, a total of 400 (if urban) or 300 (if rural) hypertensive patients were randomly sampled from each of these selected PHIs. The inclusion criteria were as follows: (1) having been diagnosed with hypertension by a physician according to the definition of measured blood pressure ≥ 140/90 mmHg or treatment with antihypertensive drugs; (2) age 35 years and above; and (3) having health records in PHIs for at least 1 year with the intention of covering the whole cycle of the standardized management. The exclusion criteria were non-fulfillment of the survey by patient due to a cognitive impairment, a physical disability, or a lack of contact during the survey. The sampled patients with the exclusion criteria were substituted by randomly-sampled patients to ensure the sample size. The sampling flowcharts are shown in Figure 1.

Questionnaires were used to collect information on the socioeconomic status, health knowledge, modifiable indicators of a hypertension risk, and health service utilization. The interviews were conducted in person by trained workers from the local CDC. The demographic, socioeconomic, and clinical factors that were investigated included gender, age, marital status, education, household income, medical insurance, and the duration of hypertension diagnosis. The standardized management was the main analytical factor measured. If the local primary health care workers followed up with a hypertensive patient at least four times during the last year and if they measured the patient's blood pressure, enquired about relevant symptoms, and provided healthy lifestyle advice during each follow-up, the patient was considered to have received the standardized management.

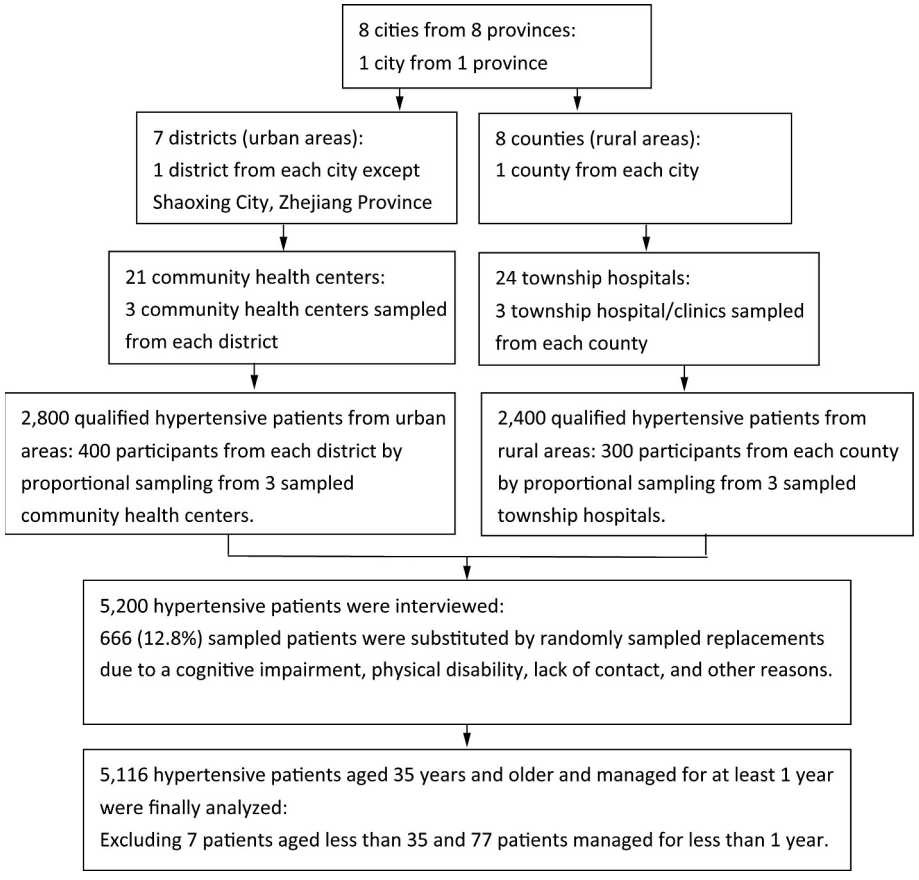

Figure 1. Flowchart for the selection of the samples.