

Capacity for delivery services of non-communicable diseases prevention and management in commune health centers, 2014

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Abstract

This study aimed to describe the current available and readiness of resources of commune health centers (CHCs) in selected areas in Vietnam for the prevention and control of diabetes and hypertension in 2014. A cross-sectional study was conducted on 90 CHCs in Hoa Binh, Ha Tinh and Kien Giang provinces. Service availability and readiness assessment (SARA) instrument was used to assess the capacity of CHCs. The results showed that most of CHCs achieved <70% of standards for diabetes diagnosis and management (83.3%), especially in difficult-to-reach areas (97.8%). Meanwhile, the proportion of CHCs having sufficient capacity for hypertension service delivery was high. Most of CHCs reached from 70% to <100% of standards for hypertension management and treatment (59.8%). The results suggested that enhancements and investigations in equipment and capacity of CHCs should be implemented, particularly in remote areas.

Keywords: *Delivery service, non-communicable diseases, commune health centre, SARA*

1. Introduction

Non-communicable diseases (NCD) are leading causes of mortality worldwide, especially in low and middle income countries [1]. Additionally, NCDs raise serious implications for the development of each country due to the loss of productivity and financial burden for families and societies [2]. To respond, World Health Organization has stated an action plan to promote the role of primary health care to NCD prevention and control [1]. Therefore, ensuring the essential resources in grass-root health care level is necessary to implement successfully this strategy.

Vietnam's disease pattern is undergoing an epidemiological transition, from communicable diseases to NCDs. According to recent estimation in 2010, NCDs contributed to two third of disease burden in Vietnam [3]. The hospital admission due to NCDs significantly increased from 39.0% in 1986 to 66.2% in 2008, while the mortality

increased from 42% to 63.3% during this period [4]. In order to address the NCD epidemic, a national program for NCDs prevention and control has been performed with the support from some central and specialist hospitals in Vietnam (such as Vietnam Heart Institute, National Cancer Hospital etc.). Besides, Ministry of Health also implemented an integrated approach at commune health centers (CHCs), which serve as the access point of healthcare for the majority of patients having NCDs.

With the crucial role of CHCs in preventing and managing NCDs, strengthening the capacity of CHCs should be prioritized to serve the need of population. In order to provide the evidence of available resources in CHCs for NCDs, especially some common diseases such as diabetes and hypertension, this study aimed to describe the current available and readiness of resources of CHCs in selected areas in Vietnam for the prevention and control of diabetes and hypertension in 2014.

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2. Materials and Methods

Subjects

Health facilities and staff of the CHCs were studied.

Study settings

The study was conducted in three provinces of Hoa Binh (represents Northern regions), Ha Tinh (represents Middle regions) and Kien Giang (represents Southern regions) from June to December 2014.

Study design

A cross-sectional study was conducted.

Study sample size and sampling technique

In this study, a Bailey's formula (1982) to calculate the size of organization sample in a quantitative study was applied, with 30 as the minimum sample [5]. To compare the difference among rural, urban and difficult-to-reach areas, we multiplied the minimum sample by three. A total of 90 CHCs were enrolled in the study.

A multi-stage sampling technique was used. A list of districts from 3 targeted provinces was categorized in rural, urban and difficult-to-reach groups. Then, in one group, three districts in one province were randomly selected. A total of 9 districts was recruited (Hoa Binh province: Ki Son, Hoa Binh city and Luong Son; Ha Tinh province: Huong Khe, Ha Tinh city and Thach Ha; and Kien Giang province: Rach Gia city, Hon Dat and An Bien). Finally, in each district, ten communes with their CHCs were randomly recruited to participating in the study.

Measurements

Master students and staffs working at the faculties of Hanoi Medical University were selected and well-trained in data collection team. A structured questionnaire was used to collect reported information of CHCs (socio-economic status of commune, human resources, equipment, facility, guideline, service provided, etc).

Service availability and readiness assessment - SARA instrument was applied to measure the availability and readiness of NCD prevention

and management services in CHCs [6]. The assessment of service availability comprises both general and specific components. In this study, we focused only on the service-specific availability and readiness of essential resources for diabetes and hypertension management, treatment and prevention. Service-specific availability focuses on whether a specific type of health intervention is offered, while service-specific readiness reflects the capacity of health facilities to provide interventions in key program areas. The essential inputs needed to deliver service-specific interventions are described in four domains: (i) trained staff and relevant and up-to-date guidelines; (ii) functioning equipment; (iii) diagnostic capacities; and (iv) essential medicines and commodities. A total of 11 tracer items were investigated for each disease. All tracer items are given equal weight with one score, summing to a total of 11 score. Those components were assessed in three levels: <70% of standard (if score is < 8), from 70% to 100% (if score is from 8 to 10) and 100% of standard (if score is 11) [6].

Data analysis

The data was entered using Epidata software version 3.1 and analyzed by STATA software version 12.0. Descriptive statistic including frequency and percentage were utilized for describe the existed components for availability and readiness of CHCs. Chi-squared test was used to determine the difference among those components in three different areas (rural, urban and difficult-to-reach areas). Statistical significance set at $p < 0.05$.

Ethical approval

The research was approved by the Medical Ethic Committee of Hanoi Medical University, Hanoi, Vietnam.

3. Results

Table 1 shows that, the proportion of CHCs providing diabetic diagnose and management services in difficult areas was the lowest (50.0%) compared to in other areas. The percentage of urban CHCs having trained health staffs for diabetes was 80.0%, which was the highest compared to other groups ($p < 0.05$).

Table 1. Capacities to provide hypertension/diabetes diagnosis and management in CHCs

Characteristics	Rural	Urban	Difficult areas	Total	P
	n (%)	n (%)	n (%)	n (%)	
Diabetes					
Providing initial diagnosis and management services	24 (80.0)	26 (86.7)	15 (50.0)	65 (72.2)	0.003
Guidelines for diagnosis and management were existed	14 (46.7)	20 (66.7)	9 (70.0)	43 (47.8)	0.017
Staffs were trained over 2 years	12 (40.0)	24 (80.0)	7 (23.3)	43 (47.8)	<0.01
Hypertension					
Providing initial diagnosis and management services	27 (90.0)	30 (100.0)	28 (93.3)	86 (94.4)	0.363
Guidelines for diagnosis and management were existed	24 (80.0)	28 (93.3)	19 (63.3)	71 (78.9)	0.017
Staffs were trained over 2 years	24 (80.0)	27 (90.0)	23 (76.7)	74 (82.2)	0.372

Most of CHCs provided initial diagnosis and management services for hypertension (94.4%). The majority of CHCs had trained staffs for hypertension diagnosis and treatment over 2

years (82.2%). The proportion of CHCs having guidelines for hypertension in difficult areas was the lowest compared to other areas (63.3%). The difference was statistically significant ($p > 0.05$).

Table 2. Equipment for hypertension/diabetes diagnosis and management in CHCs

Characteristics		Rural	Urban	Difficult areas	Total	P
		n (%)	n (%)	n (%)	n (%)	
Height scale	Available	26 (86.7)	28 (93.3)	27 (90.0)	81 (90.0)	0.905
	Active	26 (100.0)	26 (92.9)	27 (100.0)	79 (97.5)	0.325
Adult weight scale	Available	30 (100.0)	29 (96.7)	30 (100.0)	89 (98.9)	1.000
	Active	30 (100.0)	29 (100.0)	28 (93.3)	87 (97.8)	0.326
Stethoscopes	Available	30 (100.0)	29 (96.7)	29 (96.7)	87 (96.7)	1.000
	Active	30 (100.0)	29 (100.0)	29 (100.0)	85 (100.0)	-
Blood pressure measure	Available	30 (100.0)	29 (96.7)	30 (100.0)	88 (97.8)	1.000
	Active	30 (100.0)	29 (100.0)	30 (100.0)	86 (100.0)	-

Table 2 shows that, most of CHCs has full equipment for diagnosing and managing

hypertension and diabetes at active mode. There was no statistically significant difference ($p > 0.05$).

Table 3. Availability of medicines for hypertension/diabetes in CHCs

Characteristics	Rural	Urban	Difficult areas	Total	P
	n (%)	n (%)	n (%)	n (%)	
Diabetes					
Metformin cap/tab	2 (6.7)	2 (6.7)	0 (0.0)	4 (4.4)	0.540
Glibenclamide cap/tab	2 (6.7)	2 (6.7)	1 (3.3)	5 (5.6)	1.000
Insulin injectable	0 (0.0)	0 (0.0)	1 (3.3)	1 (1.1)	1.000
Glucose injectable solution	15 (50.0)	12 (40.0)	12 (40.0)	39 (43.3)	0.655
Hypertension					
ACE inhibitors	14 (46.7)	15 (50.0)	13 (43.3)	42 (46.7)	0.875
Thiazides/Furosemid	18 (60.0)	13 (43.3)	19 (63.3)	50 (55.6)	0.248
Calcium channel blockers	24 (80.0)	26 (86.7)	23 (76.7)	73 (81.1)	0.602
Aspirin cap/tab	14 (46.7)	16 (53.3)	8 (26.7)	38 (42.2)	0.094

For diabetes treatment, the proportion of CHCs having Glucose injectable was the highest (43.3%). Meanwhile, drugs for hypertension treatment were popular in most

of CHCs: Calcium channel blockers (81.1%) and Thiazides/Furosemid (55.6%). There was no statistically significant difference ($p > 0.05$).

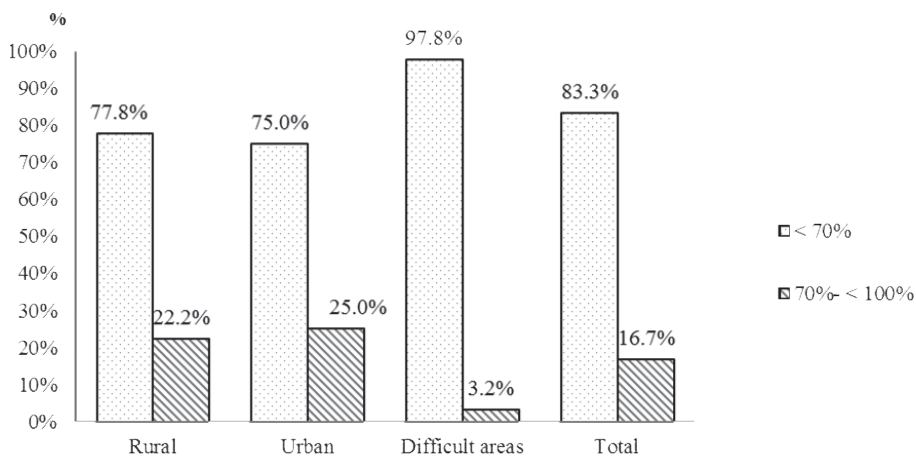


Fig.1. Availability and readiness of diabetes diagnosis and management in CHCs

Figure 1 shows that most of CHCs achieved <70% of standards for diabetes diagnosis and management. The proportion of CHCs

reaching <70% standards in difficult areas was the highest with 97.8%. The difference was statistically significant ($p < 0.05$).

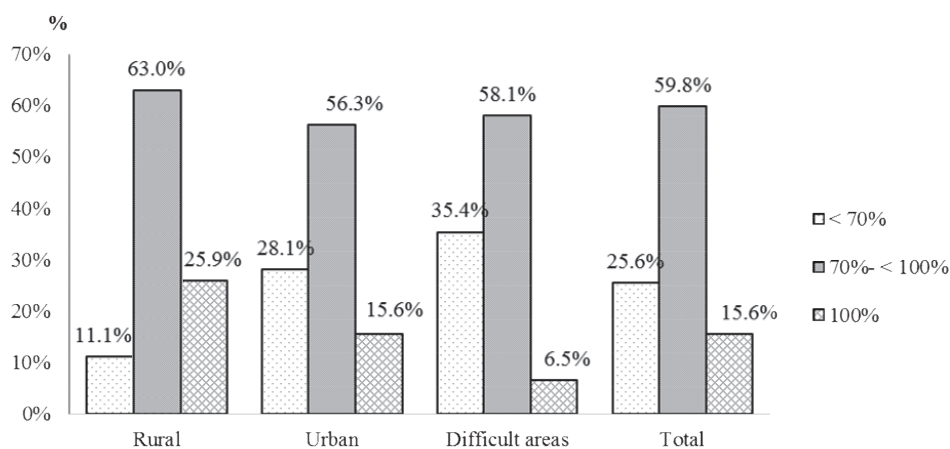


Fig.2. Availability and readiness of hypertension diagnosis and management in CHCs

The result of Figure 2 shows that, most of CHCs reached from 70% to <100% of standards (56.3% to 63.1%). The percentage of CHCs achieving <70% of standards was highest in difficult areas with 35.4%. However, There was no statistically significant difference ($p>0.05$).

4. Discussion

This study was conducted to assess the availability and readiness of diagnosis and management services for hypertension/diabetes in CHCs in 3 provinces. The results indicated that the capacity of CHCs for hypertension were at high level. However, capacities to provide the diabetes management and treatment services were at lower level compared to hypertension services.

Currently, Vietnam Ministry of Health has been paying attention to implement hypertension diagnosis, treatment and management at grass-root healthcare levels. Decision number 3192/QD-BYT issued about guidelines for diagnosing and treating hypertension supported health staffs having fundamental background to provide hypertension treatment at their facilities [7]. Therefore, in this study, high proportion of CHCs has sufficient capacity for providing hypertension management and treatment services. It is because most of CHC staffs were trained for hypertension diagnosis and treatment; and essential medicines and equipment were available and active. Minh HV *et al* (2013) conducted a study in Dong Hy

district, Thai Nguyen showed that 18 CHCs in this district already had capacities to provide early hypertension treatment [1]. However, the barriers to deliver hypertension service were also lack of trained staffs and medicines, especially in difficult-to-reach areas. Therefore, provide additional drugs and support health staffs to undergo training are essential to ensure the sufficient preparation for those CHCs.

In term of diabetes, the results showed that almost of CHCs reached under 70% of standard for diabetes services. This is mainly because of limited medicines, guidelines and trained staffs for diabetes. A study of Minh HV *et al* (2013) also showed the unavailability of diabetes-related services in 18 CHCs of Dong Hy district [1]. It may be explained by that diabetes is a complicated disease with a number of complications. Guidelines of Ministry of Health for diagnosing and treating diabetes also recommended that CHCs only provide management services for diabetes. If adverse events are occurred, diabetes patients have to go to higher health care levels [8], particularly in limited-resources settings as mountainous and remote areas. Therefore, CHCs had not been paid attention to this service and the needed resources had still been insufficient. World Health Organization recommended that CHCs should be the place that provides primary management and treatment for diabetes [1], therefore supplementing essential drugs, guidelines and helping health workers to get training are very necessary to implement

successfully NCD prevention and control strategy [9].

Our study has strength in using a standardized assessment tool for evaluate the availability and readiness of resources of CHCs. This allowed us to be comparable. However, some limitations should be considered. First, this study used the cross-sectional design, therefore we cannot establish causal relationships. Additionally, only three districts were chosen, which may limit the generalization of the result to whole provinces.

5. Conclusions

The proportion of CHCs having sufficient capacities to diagnose and manage hypertension was high when this proportion for diagnose and manage diabetes was low, especially in difficult-to-reach areas. The results suggested that enhancements and investigations in equipment and capacity of CHCs should be implemented, particularly in remote areas.

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