

Primary care in Central Vietnam:

Measurement, Assessment and Perception of users and providers

Nguyen Thi Hoa

Ghent 2021

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PRIMARY CARE IN CENTRAL VIETNAM: MEASUREMENT, ASSESSMENT AND PERCEPTION OF USERS AND PROVIDERS

Nguyen Thi Hoa

Thesis submitted to fulfill the requirements for the degree of
“Doctor in Health Sciences”

Ghent 2021

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List of Abbreviations

CHC	Commune Health Center
DHC	District Health Center
EHR	Electronic health record
GP	General practitioner
PC	Primary care
PCP	Primary care physician
PHC	Primary health care
PCAT	Primary care assessment tools
VN PCAT AE	Vietnamese Primary care assessment tools – consumer version
VN PCAT PE	Vietnamese Primary care assessment tools – provider version
WHO	World Health Organisation

PART I:
GENERAL INTRODUCTION

Primary care and its roles

Primary care is defined to be the delivery of health care at a grassroots level which provides needs-based services in a wide variety of circumstances. Quality primary care is known as part and parcel of strong health care systems with good health outcomes for the population [1]. Studies carried out in industrialized nations provide evidence that stronger primary care systems are associated with better population health outcomes including lower mortality rates, rates of premature death and hospitalizations for ambulatory care sensitive conditions, along with higher infant birth weight, life expectancy, and satisfaction with the health care system [1-4]. Increasing primary care availability in low- and middle-income countries also correlates with improved health condition [5]. Research has found that primary care is a significant aspect in the improvement of public health and health outcomes as well as the prevention of illnesses and deaths, with lower use of hospital-based medical care, associated with lower costs [6,7]; and more equitable distribution of health within a population [6, 8-10]. Evidence gathered by the World Bank has highlighted that primary care is capable of managing 90% of health care demands, with only the remaining 10% requiring services associated with hospitals (15).

Moreover, multimorbidity and chronic diseases such as non-communicable diseases are on the increase, and this trend has been putting more and more pressure in terms of finance as well as human resources on not only developing countries but also developed ones [11, 12]. Research across twenty-seven countries of the European Union in 2015 showed that people with chronic conditions were more likely to be in good or very good health in countries that had a stronger primary care structure and better coordination of care [13].

Lower health care costs can be achieved by systems with strong primary care [7, 14]. This can be explained by, for instance, the fact that primary care doctors prescribe fewer diagnostic tests and procedures than specialists, leading to lower costs [7]. Furthermore, having a frequent source of care is associated with lower use of health care resources and lower rates of non-urgent emergency department visits,

hence the reduced costs. Comparative analyses have found that countries with health systems oriented toward primary care also have, on average, lower costs and better population health outcomes [15].

In the first international declaration of primary care in 1978 at Alma Ata, the World Health Organization (WHO) described “primary care” as essential care which is universally accessible to individuals and families in communities, available at an affordable cost to communities and countries, and the first level of contact for patients (or the first element of a continuing health care process) [16]. More specifically, in 2005, Barbara Starfield described primary care as “the provision of first contact, person-focused, ongoing care over time that meets the health-related needs of people, referring (to hospital) only those problems too uncommon to maintain competence and coordinates care when people receive services at other levels of care [17].”

Forty years later, the new Astana Declaration entitled “From Alma-Ata towards universal health coverage and the Sustainable Development Goals” reaffirmed the commitment of states and governments to ‘build sustainable primary health care as well as to enhance capacity and infrastructure for primary care – the first contact with health services’ [18].

Primary care attributes

In her classic work, Barbara Starfield identified major attributes of primary care for measurement [19]. These attributes include structural and process features namely first contact care, continuity of care, patient-centred care, comprehensiveness of care, and coordination of care:

First-contact care refers to accessibility to and use of services for each new health problem or new episode of a health problem. Regardless of what a medical facility states or perceives its accessibility to be, it provides first-contact care unless its potential users perceive it to be non-accessible and reflect this in their use. Therefore, the measurement of first-contact care involves evaluating accessibility (the structural element) and utilisation (the process element).

Longitudinally ongoing care presupposes the existence of a regular source of

care and its use over time. Thus, the primary care unit must be able to identify its eligible population and the individuals in that population who should obtain care from the unit except when outside consultation and referral are required. The connection between the population and their source of care should also be reflected in strong interpersonal ties that reflect the mutual affiliation of people and their practitioner.

Comprehensiveness implies that primary care facilities must arrange for the patient to receive all types of health care services, even though some may not be efficiently provided within the primary care facility itself. These services include referrals to secondary services for consultation, tertiary services for definitive management of specific conditions, and essential support services such as home care and other community-based services. Although each primary care facility may define its own range of services differently, each should make its responsibility explicit to both its staff as well as patient population and must recognise the need for preventive services and for services that deal with symptoms, signs and diagnoses of manifest illness. It should also adequately recognise problems of all types, be they functional, organic or social. The latter is particularly important because all health problems occur within a social setting that often predisposes to or causes diseases.

Coordination (integration) of care requires some form of continuity, either in terms of practitioners, medical records or both, as well as problem recognition (a process element). For example, the status of problems noted in previous visits or problems for which referrals to other practitioners were made should be ascertained on subsequent visits. This recognition of problems will be facilitated if the same practitioner sees the patient on a follow-up or if there is a medical record that highlights these problems. In this light, both continuity and problem recognition are necessary for assessing the coordination of care.

Following the achievement of the four major attributes, three derivative attributes were also included in assessments of primary care: Family-centered care, Community-oriented care and Culturally competent care [20].

Family-centered care recognizes that the family is a major participant in the

assessment and treatment of a patient. Families have the right and responsibility to participate individually and collectively in determining and satisfying the health care needs of family members. Family-centered care reflects an understanding of the nature, role, and impact of family members' health, illness, disability, or injury on the entire family and the impact of family structure, function, and dynamics, as well as the family history of illnesses on both the risks of ill health and promotion of health of family members.

Community-oriented care (community centeredness) refers to care that is delivered in the context of the community. The distinguishing feature of community-oriented primary care (COPC) is that it takes into account the health care needs of a defined population. COPC, therefore, is concerned with the health care needs not only of patients and families being seen by the provider, but also of people in the community whose health care needs are not being met, and the characteristics of communities that influence the health care needs of everyone in the community.

Culturally competent care (cultural competency) refers to care that honors and respects the beliefs, interpersonal styles, attitudes, and behaviors of people as they influence health. It implies skills that help to translate beliefs, attitudes, and orientation into action and behavior to preserve and promote health.”

Primary care in the context of Vietnam

The country of Vietnam

Vietnam is located on the eastern side of the Southeast Asian Indochinese Peninsula. The land area of the country is about 331,000 square kilometres with the coastline stretching over 3,000 kilometres along the East Coast of the Indochinese Peninsula. With a population of about 96,209,000 as of 2019, Vietnam is the third most populous country in Southeast Asia and the fifteenth in the world, and 66 per cent of the population live in rural areas. There are 54 ethnic groups, and the majority is Kinh group (85.3%) [21]. In 1986, the Doi Moi, a wide-ranging economic and political reform, was launched, and it has transformed Vietnam from one of the world's poorest nations into a lower middle-income country: the national poverty rates declined dramatically from over 70% to below 6% in 2018; GDP per capita increased

from US \$231.5 in 1985 to over US \$2,566.6 in 2018 [22].

Alongside rapid economic development, the health status of people in Vietnam has significantly improved, with the average life expectancy increasing from 71 years in 1990 to 73.6 years in 2019. Vietnam has made significant progress in improving maternal and child health care and contributing to the reduction in infant mortality rate. The child mortality rate for children under 5 has halved compared to 1999, at 21 deaths per 1,000 live births. The maternal mortality rate in 2019 was 46 maternal deaths per 100,000 live births, indicating a decrease of 23 deaths per 100,000 live births compared to 2009[21].

Primary care in Vietnam

The current health system in Vietnam is a mixed public-private system, in which the public system plays a critical role in preventive and curative care for the population nationwide. The public health care system is a four tier system: central, provincial, district, and commune (Figure 1). The central and provincial levels are classified as the tertiary and secondary care zone with specialised health care professionals, while district and commune levels belong to the primary care zone. In this light, primary care is considered of great significance in the national health program of Vietnam.

Vietnam has developed a widespread network of commune health centers (henceforth CHCs) in each of its 11,000 communes, which, in principle, should be sufficient to cover the primary health care needs of the population. CHCs are to deliver preventive, acute and chronic care, along with treatment services for individuals as well as families in each commune [23]. Most CHCs, with one general doctor and three to five ancillary staff on average, provide health care for a population of 2,000 to 12,000 inhabitants, typically serving the needs of immunisation, epidemic prevention, first aid, maternal and child health care, and treatment of common health problems such as chronic or infectious diseases.

In addition to CHCs, there are outpatient polyclinics that are operated by district health centres (DHCs) and staffed with physicians from a variety of specialities which offer diagnostic and treatment services for a wide range of health problems. A

polyclinic provides health care for several communes in a region, supplementing local CHCs' activities. As the next step up in the tiered public health care system, DHCs in every district provide more complex curative services. Typically including an outpatient department for diagnostic and therapeutic services DHCs also receive patients who were referred by CHCs in the local region, as they offer more diagnostic services as well as an inpatient department, with disciplines ranging from internal medicine to paediatrics, surgery, obstetrics, and gynaecology.

Additional hospital levels beyond districts include provincial and central hospitals, again typically offering a variety of more complex inpatient and outpatient services. However, in the joint annual health review JAHR 2015 of the Ministry of Health [24], data showed that 54-65% of the patients coming to central hospitals had diseases and health conditions that were diagnosable and treatable at the lower levels. This is one major challenge faced by policy-makers in Vietnam, leading to the overcrowding of upper-level public hospitals as many patients bypass the grassroots outpatient facilities and even the DHCs, expecting better quality of care in these more advanced hospitals[25].

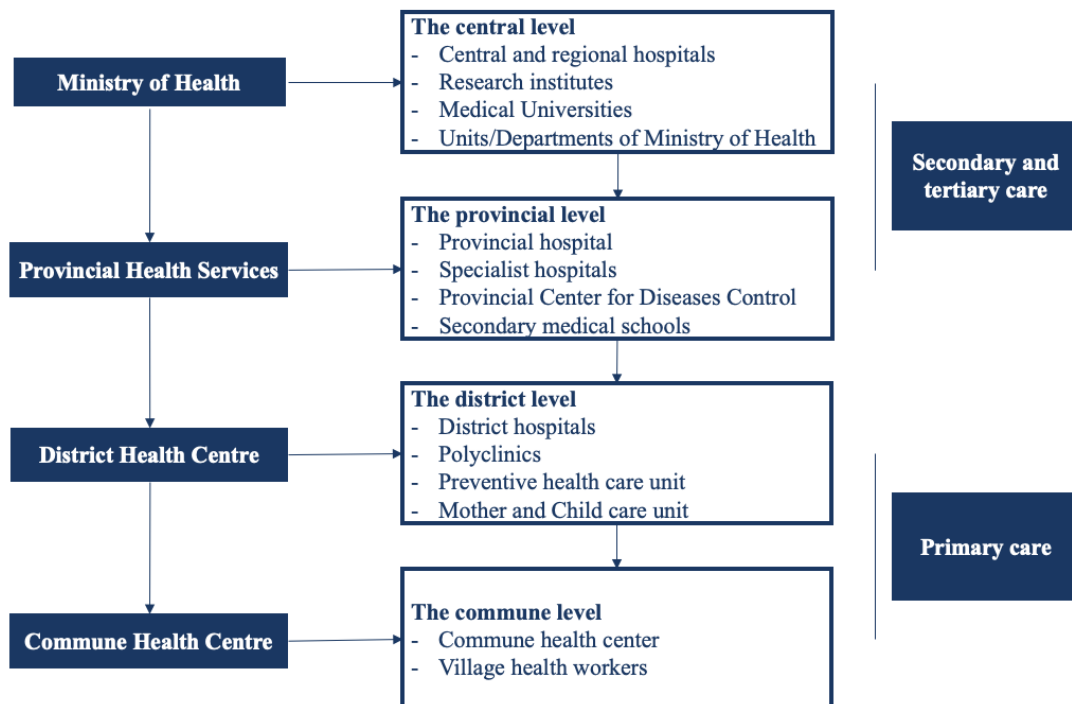


Figure 1. Outline of the Vietnamese Public Health System

In parallel with the public system, the private sector has also grown apace as it was legalised owing to Doi Moi together with the market medications. Around 4% of the registered hospital beds belong to the private sector, and 11% of all hospitals in Vietnam are registered as private hospitals [25]. This has caused changes in the health-seeking behaviours, towards higher utilisation of medical services in private clinics or private hospitals, and patients' self-medication or self-treatment [26]. The patients also ask for non-specialist advice and accompanying therapeutics at the local pharmacies [27].

Health insurance in Vietnam

While Vietnam is working towards universal health coverage, it has yet to be achieved. Coverage rates for health insurance in Vietnam have increased since its introduction in 1992, standing at up to 71% in 2014 and nearly 88% in 2018 [28]. There are two types of government-run health insurance schemes in Vietnam, with all individuals categorised into either compulsory or voluntary health insurance. The compulsory scheme contains three programs: social health insurance, health care for the poor and free health care for children under six years old. Farmers, freelancers, and students are eligible for voluntary insurance.

However, there is a substantial gap between the enrollment rates of the two schemes. People without government subsidy for health insurance enrolment such as self-employed workers, informal sector workers, or household dependent members, show a considerably low enrollment rate of 34% [24]. The health insurance premium still remains a financial barrier to certain groups of people. In order to increase the enrollment rate, the government has offered a family-based premium discount for self-employed workers and household dependents since 2015 [29]. According to this law amendment, the insurance premiums for the eligible population were reduced by 10% per family member.

Insured patients can claim full coverage only if they seek health care services at their grassroots-level registered facility in the first place. If they reach a higher level without any referral letter from the previous level health facility, they will have to pay the

otherwise insurance costs. The revised Health Insurance Law, which includes a new circular on the initial registration, medical examination, treatment and referrals covered by health insurance, has been enforced since 2016 (MOH, 2016). The circular allows the insured to seek medical services at any CHC, polyclinic or district hospital in a province.

The most apparent benefit of this legal change can be seen on the part of the insured, now having the freedom to choose the best and most convenient facility in the district and at a lower level within their province. Data on national medical services provided for the insured presented an increase in the number of medical service contacts at the district level and a reduction in the number of visits at the commune level. Specifically, from the year 2015 to 2016 the former increased by 14.8% whereas the latter fell by 12.9% [24]. The regulation has also encouraged health care facilities, especially the CHCs' network, to reform their services and improve the quality of medical services to attract more patients to come back.

Measurement of primary care

4.1. Framework for measuring the primary care performance

As primary care is the backbone of the health care system, the commitment to improvements in primary care has been increasing worldwide, one example of which being the new UN Sustainable Goal for Health (“to enhance health and promote well-being for all at all ages”) [30]. Released by WHO and UNICEF in October 2018, the new Astana Declaration “From Alma-Ata towards universal health coverage and the Sustainable Development Goals” reaffirmed the commitment of the States and governments to “build a sustainable primary health care as well as to enhance capacity and infrastructure for primary care - the first contact with health services” [31]. Many countries have thereby made multiple efforts over the last few decades to improve the quality of primary care and the patient - doctor relationship. Measuring the performance of primary care service delivery would be one of the very first critical steps to identify areas for improvement as it needs valuable and reliable evidence [32].

Regarding to the terms' definition, performance is what is done and how well it is done to provide health care [33]. However, the concept performance measurement

has no agreed -upon definition in or across the literature reviewed [34]. According to Nadzam and Nelson, performance measurement is the use of both outcomes and process measures to understand organizational performance and effect positive change to improve care [35]. Performance measurement is also defined as the development, application and use of performance measures to assess achievement of performance standards [36]. In his early work on the evaluation of the quality of care and health services, Donabedian proposed a classic conceptual model that linked across three dimensions namely the structure of care setting, the process, and the outcome of care [37]. As had been guided by his framework, most of the models used in primary care assessment were constructed from these three dimensions. Starfield's framework included the structure, the process, and the outcome across categories of capacity, performance, and health status [19]. According to Starfield, each health service system had a structure (or capacity) consisting of the characteristics that enabled it to provide services such as personnel, facilities, mechanism, financing, ... The processes (or performance) were defined as the actions that constituted the delivery and receipt of services by the practitioners, the populations and the patients. The outcome was reflected in various aspects of the health status. These components interacted with, and were determined by, the individual behaviour and the social, political, economic, and physical environment in which the health service system existed [19]. Added to this, organizational contributions were emphasized in the later frameworks. The Framework for Performance Assessment in Primary Health Care (FPA-PHC) in Australia had four indicator levels relating to the stewardship, the organisational structures and processes, the processes of care, and the intermediate outcomes [38]. To guide the measurement of the performance of primary care organizations in Ontario, Canada, Hogg et al. developed the conceptual framework for primary care with two domains: the structure and the performance. The structural domain described the health care system, the practice context and the organization of the practice in which any primary care organization operates. The performance domain included features of health care service delivery and the technical quality of the clinical care [39].

Consensus is now building a comprehensive framework for primary care. In 2002, Campbell proposed an ideal performance measure that included good acceptability, feasibility, reliability, sensitivity to change and predictive value [40]. Outcome measures and process measures had often been used for performance measurement in primary care; however, the advantages and disadvantages of these measures were also pointed out [41]. As was raised by Macinko (2011), a comprehensive assessment of primary health care required several types of indicators including the structure, the processes, the results, and the health outcomes [42]. The Primary Health Care Performance Initiative (PHCPI) was launched in 2015 with the aim of catalysing improvements in primary health care (PHC) systems in 135 low- and middle-income countries (LMICs) [43]. The centerpiece of the PHCPI conceptual framework was the service delivery domain, which captured the interaction of systems and supplies with providers and patients at the time of care delivery. This domain consisted of a sub-domain—high-quality PHC—included the classic primary health care functions such as first-contact accessibility, comprehensiveness, coordination, and continuity that were first laid out by Barbara Starfield and others.

4.2. Different perspectives on primary care quality

Quality of care is defined by the Institute of Medicine as the “degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” [44]. On the other hand, disaggregated approaches define quality according to individual dimensions or components [45-47]; in which quality is more complex and multidimensional. In 2000, Campbell proposed a combined approach to defining quality of care for individuals and population as following: Quality of care for individuals is: “whether individuals can access the health structures and processes of care which they need and whether the care received is effective.” Quality of care for populations is “the ability to access effective care on an efficient and equitable basis for the optimization of health benefit/well-being for the whole population. [48]”

The quality of care is likely to be evaluated differently from diverse perspectives such as the patients, the providers, the administrative staff and the

others in health care provision [49]. Patients might value good communication skills more highly while the efficiency proven by data and statistics might be more important to managers [50]. Different points of view on health care quality led to different expectations and different methods of quality measurement [51].

Various studies around the world had explored patients' experiences of primary care and had often revealed systematic problems that affected the quality and efficiency [52, 53]. According to Piligrimiene et al., patients were likely to define quality in terms of their preferences and values, and that led to quality definition emphasizing satisfaction with health care and the outcome (the responsiveness to their specific needs) such as recovery, mortality and functional status. However, medical literacy may also impact users' perception if they are uncertain about the severity of their condition or complexity of their care needs. And technical competence refers to the skills, knowledge, capability and actual performance of health care providers. It relates to how well providers execute practice guidelines and standards in terms of dependability, accuracy, reliability and consistency. High technical quality consists of "doing the right thing right [54, 55]". Therefore, users might not always fully understand their health service needs and could not adequately assess many specific technical competence [51]. Researchers have developed better measures of patients' evaluations which users should have information and other resources necessary to make judgments about the value of services they received. There is global movement towards a more patient and person-centered approach to measurement of service delivery [56].

In contrast, relatively little effort had been invested in learning how primary care staff—the physicians—perceived the status of the services they were providing and the setting they were working in. With reference to Piligrimiene's (2008) remark, health care professionals measured the attributes and results of care to define quality. This highlighted the technical skills of the care providers and the aspects of interaction between the doctor and the patient [51]. For example, in recent studies, Chilean primary care doctors self-evaluated their performance as excellent, with the general and domain-specific scores all standing at approximately 3 out of 4. Family-centeredness obtained the

highest score, whereas Cultural Competence had the lowest [57]. Polish primary care physicians perceived three out of four processes, describing dimensions (Accessibility, Comprehensiveness, and Continuity) as positive [58].

Taking into consideration those differences in perspectives on quality of health care, primary care assessment should encompass expectations and needs from both demand (users) and supply side (health care professional) of the system. With regards to expectations, a study in the Netherlands showed that there was a striking resemblance between the patients' expectations and the way general physicians perceived those expectations [59]. A scoping review by Bresick in 2019 also reflected the need for a comprehensive evaluation of the performance of primary care, as there were considerable disparities between the staff's and the user's evaluations of the service performance [60]. Patients in South Africa rated First Contact Accessibility, Ongoing Care and Community Orientation as the weakest performing elements and Comprehensiveness, Coordination, and Cultural Competency as strong aspects of primary care; while the managers and providers agreed with the users in most issues, they were much more positive regarding the performance in terms of the Accessibility, Comprehensiveness and Community Orientation [61]. Moreover, in Ghana, a negative association between the technical quality and the user-perceived quality of care, and significant user-provider differences in all indicators measured were found in a study using the Safe Care Essential tool. A Chinese study indicated that both primary care physicians and users regarded Coordination as the weakest dimension of primary care service capacity [62].

In order to obtain an objective and comprehensive view of this service delivery, evaluation should therefore come from both sides of the system: the users (patients) on the demand-side, and the providers (health care professionals) on the supply-side.

4.3. Primary care assessment instruments and their utilisation

Various tools had been used for measuring the characteristics of primary care. Most of these tools were designed in form of the users (patients) – reported measure such as the Primary Care Assessment Survey (PCAS), the European Task Force on

Patient Evaluations of General Practice Care (EUROPEP) Questionnaire, the General Practice Assessment Questionnaire (GPAQ), the Components of Primary Care Instrument (CPCI), the Consumer Assessment of Healthcare Providers and Systems (CAHPS), the Parents' Perception of Primary Care (P3C), the Medical Interview Satisfaction Scale (MISS-21), the Consumer Opinions on Ambulatory Health Services (COAHS), the Patient Assessment of Chronic Illness Care (PACIC), the Patient Experience Questionnaire (PEQ), the Patient Satisfaction Questionnaire Short Form (PSQ-18) and the Veterans Affairs National Outpatient Satisfaction Survey (VANOCS). Some of the most commonly used tools around the world are introduced briefly below.

PCAS was identified as a patient-completed questionnaire which measured formal definitions of primary care, including the definition of primary care proposed by the Institute of Medicine Committee on the Future of Primary Care. This questionnaire applied only to respondents with a "regular personal doctor" and required the respondents to judge or rate the acceptability of different aspects of care [63]. The EUROPEP Questionnaire was designed to compare the performance of general practice in different European countries and to incorporate the patients' perspectives into care improvement initiatives. This 23-item instrument included three components: the key indicators, the indicators of specific areas of satisfaction and the user's information [64]. GPAQ was formulated by the National Primary Care Research and Development Centre at the University of Manchester. It collected what patients thought about the care provided by doctors and focused on specific features of general practice such as the access, the interpersonal aspects of care, and the continuity of care [65]. CPCI was created to measure the domains of primary care from the perspective of patients visiting their family physician. These 20-item survey used a disagree/agree semantic differential response scale with "strongly agree/disagree" labels attached only to the opposite extremes of a set of six categories [66]. CAHPS surveys is used by the Agency for Health care Research and Quality (U.S). These surveys ask users to report on their experiences with a range of health care services at multiple levels of the delivery system. Some CAHPS surveys ask about patients' experiences with providers or with

care delivered in facilities, including hospitals, dialysis centers, and nursing homes [67]. Based on the IOM definition of primary care, the P3C elicits a parent's reports of certain characteristics of their child's primary care. The 23-item P3C includes subscale such as continuity, access, contextual knowledge, communication, comprehensiveness, and coordination [68]. The Interpersonal Processes of Care (IPC) focuses on interpersonal processes of care for diverse groups. This 29 - item instrument assesses the subdomains such as communication, patient-centered decision making and interpersonal care [69].

There are few tools which include an assessment from different views (users and providers) such as the Primary Care Assessment Tool (PCAT) [70] and the WHO Primary Care Evaluation Tool (PCET) [71]. PCAT, which was developed by Barbara Starfield at the Johns Hopkins Primary Care Policy Centre, included four surveys namely the adult consumer-client (PCAT-AE), the child consumer-client (PCAT-CE), the provider (PCAT-PE), and the facility survey (PCAT-FE). Each survey had an expanded version and a short version [70]. PCET, created by the WHO Regional Office for Europe, was comprised of three separate questionnaires: one on the situation of primary care policies and structures at the national level, another for primary care physicians and the last one for users [71].

In 2014, Fracolli and colleagues conducted a systematic review on primary health care assessment tool used in 3,048 studies [72, 73]. Their findings showed that PCAT was one of the most rigorously studied and applied tools for measuring the quality of primary care across the globe. In an African scoping review, out of 19 studies assessing primary care performance, 7 studies employed PCAT as an instrument that comprehensively measured the service delivery while involving the primary care user, provider, and manager stakeholders [60]. The original PCAT was the most widely used instrument in China (18 studies) and Brazil [72, 73]. PCAT was also found to assess most of the attributes of primary health care from the users' perspective by Canadian primary health care experts in 2012 [74].

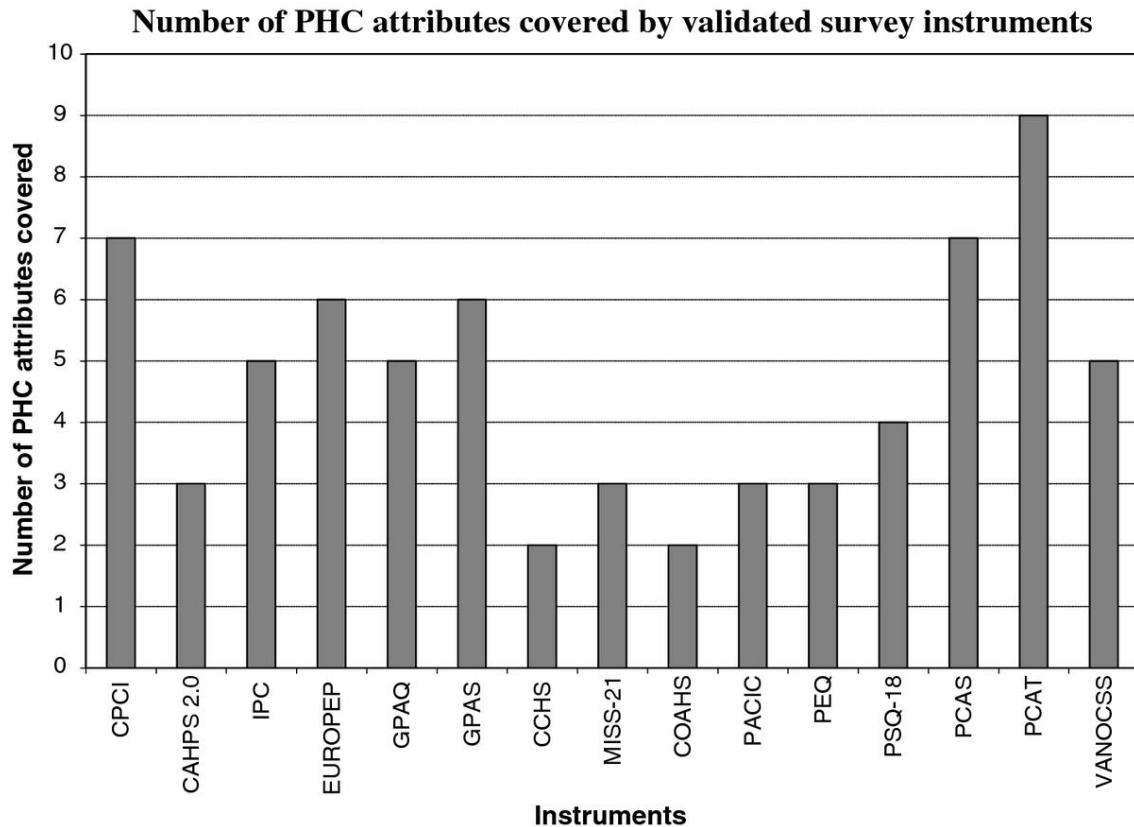


Figure 2: Number of PHC attributes covered by validated survey instruments

Source: Lévesque, J., Haggerty, J., Beninguissé, G. et al. Mapping the coverage of attributes in validated instruments that evaluate primary health care from the patient perspective. *BMC Fam Pract* 13, 20 (2012) [74].

In this light, Fraccoli et al. recommended PCAT as the most adequate tool for assessing the essential aspects of primary health care service provision. However, the choice as to an adequate assessment tool, evaluations, and performance assessments were to be made based upon the country's context [73].

PCAT utilisation in the world and in Vietnam

As mentioned above, PCAT has been one of the most utilized instruments in the world for measurement of primary care performance. The advantage of PCAT is it were specifically designed to assess both structural and procedural features of primary care. Through PCAT, the primary care quality would be evaluated according to its core principles (first contact care, continuous longitudinal care, coordination, and comprehensiveness) and three other derivative domains (family-centered care,

community-oriented care and culturally competent care). Each domain was covered by one or two small scales. Six scales represented the four core domains of primary care, and three additional scales represented the three ancillary domains of family-centeredness, community orientation, and cultural competence [70]. In the client surveys, PCAT also explored the user - provider affiliation: participants were guided to identify a particular person or place as the usual source of care and/or provider who knew the users best and/or took responsibility for most care and the strength of that affiliation [75]. Therefore, although PCAT were originally designed in the US, the set of this instrument has been adopted, validated and used to measure the primary care quality in many different countries with different health care systems, including Brazil, Korea, Spain, Japan, China, Tibet, Malawi, Argentina, Canada, South Africa, Taiwan... The global validation and utilization of PCAT not only provide more trustworthy measurements of primary care performance but also assist to compare the primary care quality worldwide. The following part briefly describes the PCAT utilization around the world.

In the US, the child and adolescent versions of the Consumer – Client and Provider surveys were first administered via telephone to parents of 1,017 children and health plans enrolled in Florida’s Healthy Kids subsidized insurance program [76]. Further testing of the instruments was conducted and described in published studies. The study in 1998 assessed the quality of primary care delivered by various health care settings to children in Washington, DC [77]. The study in 2001 surveyed users in South Carolina from an HMO (Health Maintenance Organization) group and a low - income group [70]. The data collected in these studies were used to conduct testing for validity, reliability, and instrument refinement of adult and child populations [78].

In Canada, the PCAT was used to survey both demand and supply sides perspectives. The client survey was used in the Comparison of Models of Primary Health Care in the Ontario Study under the funding of the Ministry of Health and Long-Term Care in 2005 -2006. The study compared the performance of primary care practices and evaluated the access to primary health care for immigrants in Ontario, Canada[79]. In this project, the practice and provider surveys was also investigated to

assess the Community orientation in different models of primary care practices [80]. PCAT were also used in a multilevel cross-sectional survey in 2007 to explore users' experiences of primary care in Quebec before major reforms. This study findings implicated room for improvement in the Quebec health care settings, particularly in the areas of accessibility to health care and provision of health promotion and preventive services. Users who had regular family physicians fared better than those who did not [81].

In Africa, the PCAT work in South Africa was started in 2011 by the translation and a pilot study of the adult expanded version of the original US PCAT. The ZA PCAT (AE) covers three major languages spoken in Cape Town: English, isiXhosa and Afrikaans. The latter efforts in 2013 by the group of the family medicine department of the University of Cape Town aims to strengthen the PCAT's validity for South African use and to extend the 2011 pilot study[82]. By surveying 1432 users, 100 clinicians and 64 managers using the ZA PCAT, the research group found significant gaps between users' experience and providers' assessment of PHC performance in Western Cape Province, South Africa [83]. In 2018, Dullie and his colleagues developed the Malawian version of PCAT (PCAT – Mw) based on the ZA PCAT [84]. The validated tools were used to evaluate the primary care performance in the Neno district based on users' experience of services [85].

In Spain and Latin America, PCAT is used widely in the primary health care measurement research field. There is a network of researchers who interact and collaborate for the cross-cultural adaptation and implementation of PCAT called the Iberoamerican Primary Care Assessment Tool (IA-PCAT) Collaboration. The collaboration began at the "International Seminar on Assessment at the First Level of Care" held in Uruguay in 2010. This event consolidated the cooperation between the teams dedicated to the development of the tool and created the network basis for supporting other countries interested in working with PCAT. IA-PCAT carries out collaborative projects focused on the cross-cultural adaptation, viability and reliability studies, implementation and interpretation of results through the use of PCAT model for assessment of health care at the first level. Currently, researchers from eleven

countries conform the IA-PCAT network: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Spain, Mexico, Peru, Uruguay [86].

The original PCAT is the most widely used instrument in China. A review of Wang in 2019 showed 18 PCAT studies were conducted in China, including Guangdong, Shanghai, Hunan and Tibet. Most of them were published after 2009 when China launched its national health reform [72]. Although there are various Chinese versions of PCAT, all PCAT studies included four of the seven domains (First Contact, Continuity, Coordination and Comprehensiveness), which correspond to Starfield's "core domains". Researchers in some other Asian countries such as Korea, Japan, Taiwan and Hongkong also used the PCAT in their primary health care studies, with focus on the adult consumer-client (PCAT-AE) survey. There are two validated questionnaires of the short form of PCAT – AE in Japanese and Korean [87, 88]. However, in the South East Asia region, Vietnam is the only country that has multiple efforts on PCAT validation and utilisation so far.

One of the main parts of this dissertation is describing the development and validation process of the PCAT for use in Vietnam and determine its internal consistency and validity. Afterward, these validated tools were used to measure primary care performance from users and providers' perception. These findings provide emerging evidence on rooms for improvement for primary care policy makers in Vietnam to determine where to best investigate. Furthermore, the result of this work could render important experience lessons for low – middle income countries which have the same context and culture such as the Asian region or South East Asian region in measuring and improving their primary care systems.

Starting from 2007 and 2008, under the collaboration between Boston University and Hue University of Pharmacy and Medicine, the PCAT – AE and PCAT – CE were first translated into Vietnamese. The working group had reviewed the translated versions and obtained feedback from Vietnamese experts in primary health care and family medicine in some national workshops. Based on these early efforts, the questionnaire set were investigated thoroughly in the next years from 2011 to 2014 including repeated steps such as backward translation, review and comparison of each

item between translated version of PCAT – AE and PCAT – CE, expert review and lay panel review, pilot testing... To ensure the quality and unity, the translation and validation of these two questionnaires were carried out in parallel. Each item of the translated PCAT – AE and PCAT – CE were compared and reviewed. From 2015 to 2018, the validation studies were conducted to determine the internal consistency and validity of these two questionnaires. The validated tools were used to evaluate the primary care performance in the Central of Vietnam from both user and providers' view. Some parts of this project were first published in a national journal (2015) (Supplementary 3) and presented in international conferences such as WONCA world conference (2016) in Brazil and WONCA world conference (2018) in Korea.

PART II:
RESEARCH AIMS

Outline and aims of the thesis

The overall objective of this dissertation is to contribute a comprehensive assessment of the primary care quality of Central Vietnam. It aimed to provide an evaluation from different views of the primary care system: users and providers; through validated and reliable instruments for use in Vietnam. The different papers that build this dissertation addressed this goal through different approaches in two phases:

Phase 1: Development and validation of the primary care assessment tools for use in Vietnam

Phase 2: Assessment of primary care quality in Central Vietnam from users and providers' view.

The following part presents papers and specific aims for each paper in Phases.

Phase 1: Development and validation of the Vietnamese primary care assessment tools

It is crucial to utilise valid and reliable tools in the assessment of primary care quality to achieve precise measurement. There are a variety of tools for measuring elements of primary care. However, the Primary Care Assessment Tool (PCAT) developed by Barbara Starfield at the Johns Hopkins Primary Care Policy Center focuses on the core principles of primary care and is one of the few tools designed to assess both structural and process features of primary care. Given the proven utility of the tool worldwide, we presumed it to be a useful tool to gauge the quality of primary care as an emerging component of the health care system in Vietnam. The aim of **Paper 1** was to adapt the consumer version of the Primary Care Assessment Tool (PCAT) for Vietnam and determine its internal consistency and validity.

However, to obtain an adequate reflection on organisational resources and health care processes, it should include the providers' perspectives on the same criteria. The purpose of **Paper 2** was to adapt the PCAT provider tool for Vietnam and determine its internal consistency and validity.

Phase 2: Assessment of primary care quality in Central Vietnam from users and providers' view

Primary care quality in Central Vietnam from the users' views

Like many other countries in the world searching for an ideal model of primary care delivery, Vietnam has been conducting a national program for reinforcement and quality improvement of primary care focusing on the grassroots level using a variety of public and private services.. Little is known, however, about the difference in primary care quality in different health care settings in Vietnam. The objective of Paper **3** was to compare the quality of primary care in different types of health facilities as experienced by Vietnamese users, using the validated Vietnamese PCAT questionnaire PCAT - consumer expanded version (VN PCAT AE).

Primary care quality in Central Vietnam from the providers views

Comparatively more researchers have studied assessments of primary care quality from the users' perspective than from the workforce perspective. It is essentials to survey the primary care physicians' viewpoints as they are the major providers for primary care. [58] The aim of **Paper 4** was to explore how primary care physicians working at commune health centers in Vietnam evaluate their performance and their perception of how to improve the situation. For this purpose, a mixed-methods study was conducted: a quantitative study using the validated Vietnamese PCAT questionnaire - provider expanded version (VN PCAT PE) and a qualitative study consisting of in-depth interviews with PCPs, to better understand the results of the quantitative survey and gain insight on barriers of primary care services and how to overcome them.

In conclusion, the main research questions of this thesis are:

How can we measure the primary care performance in Vietnam and what are the perceptions of users and providers towards the primary care in Central Vietnam?

Following are the specific research questions for each chapter:

Phase	Research question	Results
1	<i>Can we apply the Primary Care Assessment Tool (PCAT) for measurement of primary care performance in Vietnam? What is the internal consistency and validity of the adapted tools for Vietnam?</i>	<i>Paper 1 Paper 2</i>
2	<i>How do users in Central Vietnam perceive the quality of primary care performance in different types of health facilities?</i>	<i>Paper 3</i>
2	<i>How do primary care physicians working at commune health centers evaluate the performance of their services?</i>	<i>Paper 4</i>
2	<i>What are the barriers to providing high quality primary care services according to the primary care physicians working at commune health centers, and what do they recommend to overcome those barriers?</i>	<i>Paper 4</i>

To answer these research questions, we used multiple methods as described in the Figure 3.

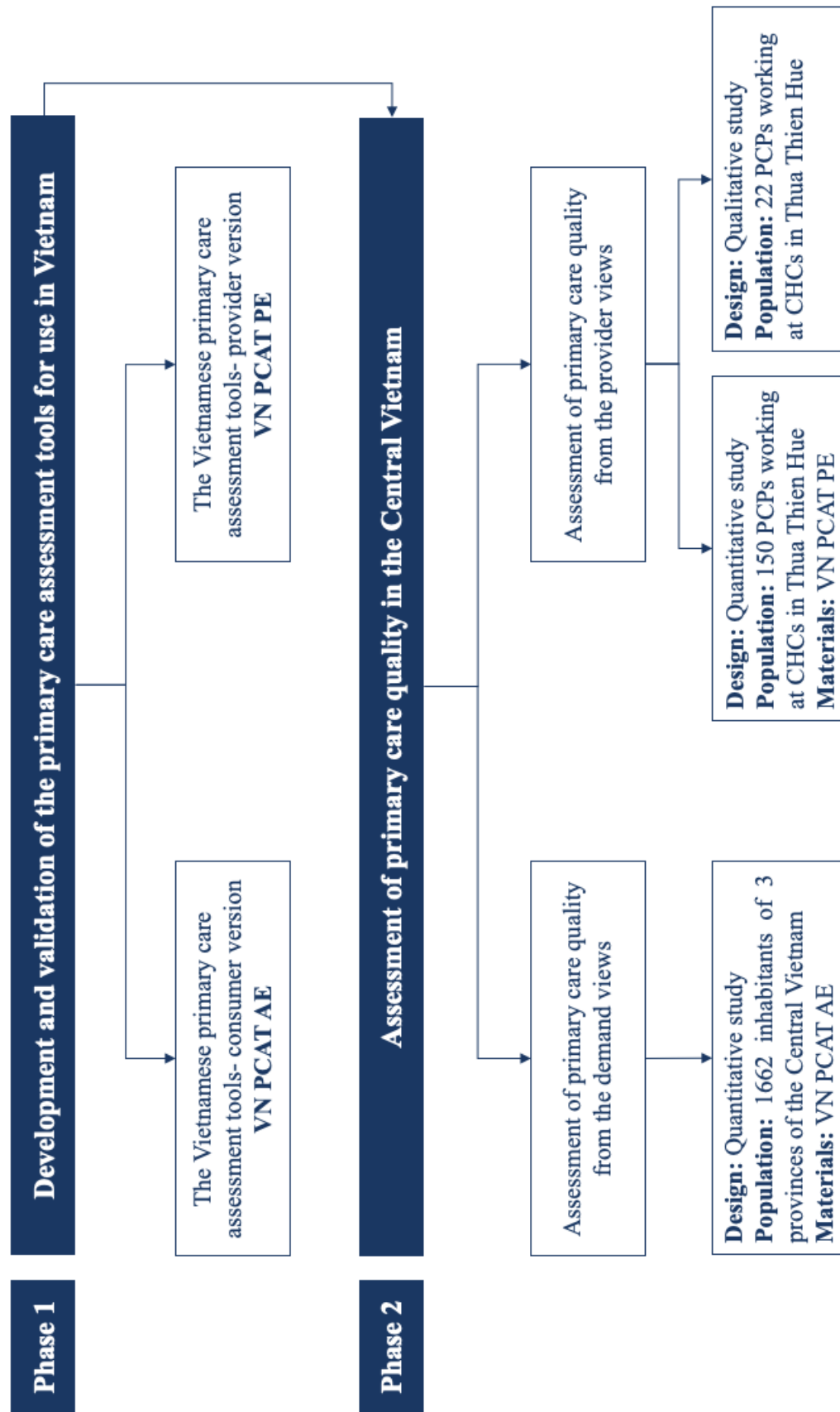


Figure 3. Study design

PART III:
RESEARCH RESULTS

PHASE 1

Development and validation of the Vietnamese primary care assessment tools

Paper 1: Development and validation of the Vietnamese primary care assessment tool - Consumer version

Hoa NT, Tam NM, Peersman W, Derese A, Markuns JF (2018) Development and validation of the Vietnamese primary care assessment tool. PLoS ONE 13(1): e0191181. <https://doi.org/10.1371/journal.pone.0191181>

Paper 2: Development and validation of the Vietnamese primary care assessment tool - Provider version

Hoa, N. T., Derese, A., Markuns, J. F., Tam, N. M., & Peersman, W. (2019). Development and validation of the Vietnamese Primary Care Assessment Tool–provider version. *Primary health care research & development*, 20, e86. doi:10.1017/S1463423619000458

These two papers describe the development and validation process of the primary care assessment tool (PCAT) for use in Vietnam and aim to answer the first research question of this thesis.

Paper 1: Development and validation of the Vietnamese primary care assessment tool - Consumer version

Hoa NT, Tam NM, Peersman W, Derese A, Markuns JF (2018) Development and validation of the Vietnamese primary care assessment tool. PLoS ONE 13(1): e0191181. <https://doi.org/10.1371/journal.pone.0191181>

RESEARCH ARTICLE

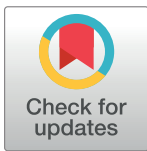
Development and validation of the Vietnamese primary care assessment tool

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Abstract

Objective

To adapt the consumer version of the Primary Care Assessment Tool (PCAT) for Vietnam and determine its internal consistency and validity.

Design

A quantitative cross sectional study.

Setting

56 communes in 3 representative provinces of central Vietnam.

Participants

Total of 3289 people who used health care services at health facility at least once over the past two years.

Results

The Vietnamese adult expanded consumer version of the PCAT (VN PCAT-AE) is an instrument for evaluation of primary care in Vietnam with 70 items comprising six scales representing four core primary care domains, and three additional scales representing three derivative domains. Sixteen other items from the original tool were not included in the final instrument, due to problems with missing values, floor or ceiling effects, and item-total correlations. All the retained scales have a Cronbach's alpha above 0.70 except for the subscale of Family Centeredness.

Conclusions

The VN PCAT-AE demonstrates adequate internal consistency and validity to be used as an effective tool for measuring the quality of primary care in Vietnam from the consumer perspective. Additional work in the future to optimize valid measurement in all domains

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consistent with the original version of the tool may be helpful as the primary care system in Vietnam further develops.

Introduction

Quality primary care is an essential component of strong health care systems with good health outcomes [1]. In 1978 at Alma Ata, the World Health Organization (WHO) promoted “primary care” as essential for all health systems. Research from industrialized countries has shown that stronger primary care systems are associated with lower costs and better population health outcomes [1–5]. Studies in the United States and in low- and middle-income countries have also suggested that greater primary care availability is correlated with improved health and a decrease in utilization of high cost health services [6–8]. In 2008, the World Health Organization reiterated their call for all countries to strengthen primary care systems and use primary care as a model to provide care that is equitable and efficient [9, 10].

Primary care in Vietnam is mainly provided by a network of more than 11,000 commune health care centers that provide basic and essential health services to people in every commune. A commune health center (CHC) is usually staffed with a general doctor and some ancillary staff such as a midwife, nurse, assistant doctor of traditional medicine or pharmacist. This network is supplemented by additional outpatient “polyclinics” (staffed by multiple primary care and subspecialist physicians) and district hospitals. People with public health insurance may seek health care services at their registered primary health facility, normally their local commune health center, and can then be referred to a higher level if needed such as district, provincial or central hospitals. Although those with public health insurance generally have free or low-cost access to primary care services through the CHCs, many people believe the quality to be poor and so bypass their CHC at the grassroots level and instead choose to self-pay for services directly at private clinics or hospitals. This pattern of care-seeking behavior has led to serious overcrowding in most upper level referral hospitals, despite potential compromises in quality due to extensive waiting times and short consultations under extreme time pressure. As a result, Vietnam has begun a variety of interventions since 2013 to improve the primary care system [11, 12]. Correspondingly, there is now a great need for valid tools to measure the quality of primary care and assist in evaluating these interventions and their effectiveness.

There are a variety of tools for measuring elements of primary care, however, the Primary Care Assessment Tool (PCAT) developed by Barbara Starfield at the Johns Hopkins Primary Care Policy Center focuses on the core principles of primary care and is one of the few tools designed to assess both structural and process features of primary care [13, 14]. The PCAT family of instruments includes four surveys: the adult consumer-client survey (PCAT-AE), the child consumer-client survey (PCAT-CE), a provider survey and a facility survey. The PCAT-AE is designed to collect information from consumers regarding their experience using health care resources, and it may be used to survey target populations [14].

The PCAT gauges the organizational resources and processes of grassroots health care by evaluating four essential features or core domains of primary care: first contact care (access), longitudinality (continuity), comprehensiveness and coordination. Three other derivative domains are also included in the PCAT: family-centered care, community-oriented care and culturally competent care [15]. Each domain is represented by one or two small scales. Six scales represent the four core domains of primary care: first contact, longitudinal care,

coordination of services (coordination domain), comprehensive services available and comprehensive services provided (comprehensiveness domain). Three additional scales represent the three ancillary domains of family centeredness, community orientation and cultural competence. Thus, the original PCAT-AE consists of nine scales representing seven domains [14].

The PCAT-AE has been used and validated in multiple countries and is perhaps one of the most widely studied and applied tools for measuring quality of primary care across the globe [16–19]. Given the proven utility of the tool worldwide, we presumed it to be a useful tool to gauge the quality of primary care as an emerging component of the healthcare system in Vietnam. Although the PCAT-AE has been validated in a variety of countries, specificities of local health systems and patients' cultural understanding of key concepts may make some elements of the tool less useful or valid. In this study, we developed the Vietnamese Primary Care Assessment Tool based on the consumer-client version of the adult expanded PCAT (VN PCAT-AE) and examined its internal consistency and validity.

Method

Translation and adaptation of the PCAT for Vietnam

A toolkit developed by the Johns Hopkins Primary Care Policy Center for use of the PCAT in international settings contains a set of recommended steps for valid linguistic and cultural translation of the tool (available upon request from the Center). In our initial adaptation of the tool for Vietnam, all of the recommended translation steps were successfully performed at least once as part of the translation process as shown in the Fig 1. Details of the process used are as follows:

- **Step 1: Forward translation** performed by a bilingual physician and a PhD student whose native tongue was Vietnamese, with experience translating documents from Vietnamese to English, and who was also familiar with use of the PCAT. Translation prioritized preserving the intent over the literal meaning of the items.
- **Step 2: Qualitative review** of the translated survey completed by a group of doctors and researchers from Hanoi Medical School in a focus group discussion; every translated item was reviewed to ensure its clarity, use of common language and conceptual adequacy.
- **Step 3: Backward translation** completed by a woman whose native language is American English and has lived in the US long enough to know the language and routines of daily life but was not already familiar with the specific wording of the original PCAT terms.
- **Step 4: Doctors and health experts in Vietnam and translators jointly reviewed** the forward and backward translations to assess items that were not effectively translated and those which were confusing or generated concerns. A few modifications were made and a consensus translation was produced that was determined appropriate for use in Vietnam.
- **Step 5: Lay panel review** occurred by two different panels of non-subjects (consumers and physicians) to review the translation, identify troublesome items, and propose alternatives.
- **Step 6: Pilot testing** was implemented using a final translated version. The translated version was administered to 104 representative patients who were native Vietnamese speakers and representative in terms of age, gender, and socioeconomic status. Basic descriptive analyses were conducted to ensure adequate distribution of responses. Respondents were debriefed to identify any wording or comprehension problems.

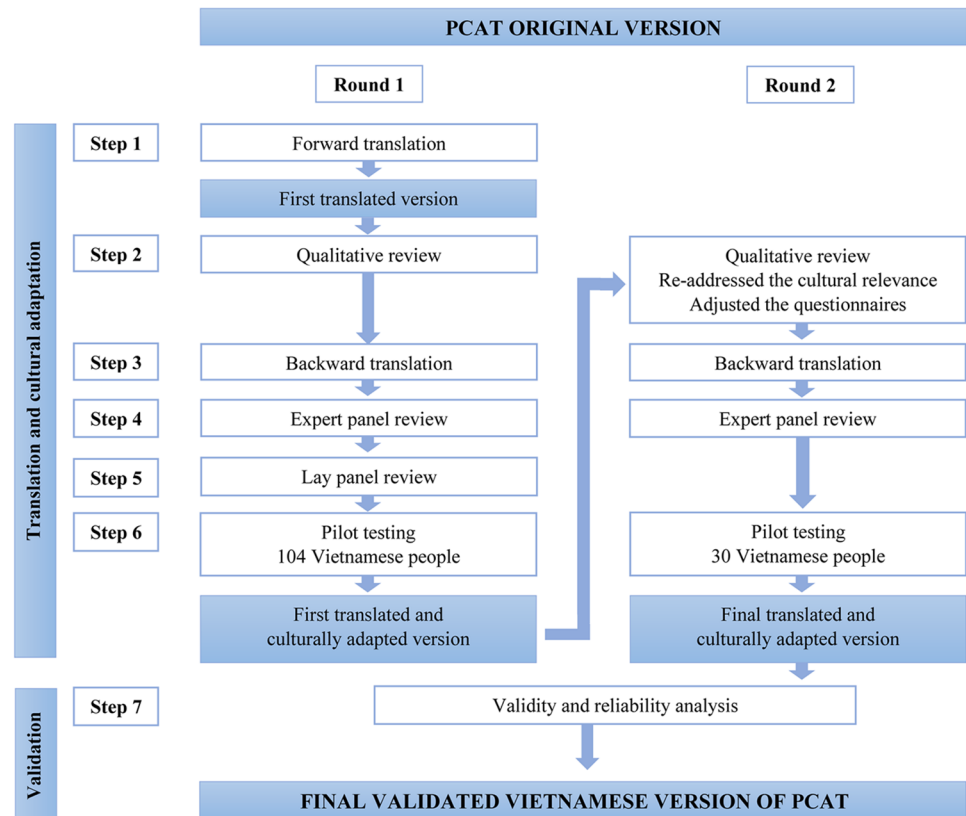


Fig 1. PCAT translation and validation process.

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Based on challenges experienced in early efforts to utilize the tool, some important steps were repeated to improve and ensure the high quality of the questionnaire including another qualitative review to re-address the cultural relevance of each item. The research team produced a list of problematic items and proposed solutions, with subsequent backward translation. An expert panel, including family medicine leaders from all medical universities in Vietnam with the specialty of family medicine, reviewed the suitability of each item as well as the words used in the questionnaire, resulting in an updated translation of the questionnaire.

An additional pilot study was then conducted with 30 people living in two communes, and some words and cultural references in specific items were identified for further revision. A final revision was done by the research team after review of all the items and obtaining additional advice from international experts with experience in PCAT validation. The final translated version of the questionnaire for this study was then produced.

The most contentious issue throughout the process was what term to use in place of “primary care provider (PCP)” as this is a completely unknown term in the Vietnamese context. Efforts to address this also impacted the decision to repeat some translation and validation steps. Ultimately through the lay and expert review processes, the term “general doctor” was chosen to most closely represent this concept. Additional substantive changes were to replace or reword items that are not typically present in Vietnam with those that were more contextually relevant. For instance, descriptions of the types of facilities in the affiliation section were changed to use more appropriate terminology relevant to Vietnam. Similarly, some clinical services in the comprehensiveness domain were replaced to ensure items were sufficiently

Table 1. Changes in the final translated questionnaires from the original PCAT.

Item code	Original question	Final translated question
A. EXTENT OF AFFILIATION WITH A PLACE/DOCTOR		
A5	What kind of office is your PCP? 1. A hospital emergency room 2. A clinic at a hospital 3. A particular doctor’s office outside a hospital 4. A particular doctor’s office inside a hospital 5. A group office 6. A neighborhood health clinic 7. A work or school clinic	What kind of office is your GENERAL DOCTOR? 1. A commune health center 2. A ward health center 3. An outpatient department of a district hospital 4. An outpatient department of a provincial hospital 5. An outpatient department of center hospital 6. A private clinic of a doctor outside of a hospital 7. A private clinic of a group doctors outside of a hospital 8. Another type of place (Please specify) 9. Not sure/don’t remember
G. COMPREHENSIVENESS (SERVICES AVAILABLE)		
G3	Checking to see if your family is eligible for any social service programs or benefits	Checking to see if your family is eligible for any social service programs or benefits such as: economic, medical, food supports
G9	Tests for lead poisoning	Counseling and treatment for alcoholism
G14	Allergy shots	Allergy treatment
G15	Splinting for a sprained ankle	Temporary fix for broken bone
G16	Removal of wart	Gastric catheter insertion/ nasogastric tube
G24	Suggestions for nursing homecare for someone in your family	Postpartum care of umbilical cord
G25	WIC services (supplemental milk and food program)	Monitoring of a normal pregnancy
H. COMPREHENSIVENESS (SERVICES PROVIDED)		
H2	Home safety, like getting and checking smoke detectors and storing medicines safely	Home safety, like preventing accidents, burning, electric shock and storing medicines safely. . .
H3	Advice on seat-belt use or child safety seats	Advice on helmet use or safety seats
H9	Ask if you have a gun, its storage or its security	Advice on storing labour equipment safely
H11	How to prevent falls	How to prevent falls for the elderly
J. COMMUNITY ORIENTATION		
J18	Ask family members to be on the Board of Directors or advisory committee?	Collect feedback from patients on health staff performance?

<https://doi.org/10.1371/journal.pone.0191181.t001>

relevant to the Vietnamese context, similar to changes in PCAT versions from other countries [20]. Different country versions of the PCAT often have varying numbers of items to assess this domain, and so two items in the Comprehensiveness (services available) domain (G21 and G22) were completely eliminated and not replaced in the final expert review round due to consensus on the extreme scarcity of the services. Table 1 shows the original and translated items for the items that were most substantially modified.

Remaining as consistent as possible with the original tool, the translated questionnaire contained 9 scales with 84 questions representing the primary care domains using a 4-point Likert scale response format (1 = definitely not; 2 = probably not; 3 = probably; and 4 = definitely). An additional “don’t know/don’t remember” option was provided for each item. The questionnaire also included demographic questions such as age, gender, and occupation as well as health condition and degree of affiliation with a usual source of care.

Three questions were refined to identify an individual’s usual source of care as a particular person or place and the strength of that affiliation: (1) “Is there a doctor or place that you

usually go if you are sick or need advice about your health?” (2) “Is there a doctor or place that knows you best as a person?” and (3) “Is there a doctor or place that is most responsible for your health care?” A person was considered to have a usual source of care if he or she answered affirmatively to any one of these three questions, and no usual source of care if they provided a negative answer to all three questions. An algorithm based on the responses to these three questions was then used to categorize the strength of affiliation with a primary care source. If all three physicians/places were the same, this was considered evidence of a very strong affiliation. If the response to the first question was the same as for either of the other two questions, then that site was used although the affiliation was categorized as less strong. If the response to the first question was different from the other two responses but the other two responses were the same, then the site where both were the same was used as their primary care source and categorized as a weak affiliation. If all three responses were different, then the site identified in the first question was used and categorized as a very weak affiliation. All subsequent questions asked were intended to refer to this specific person or place. For those with no identifiable source of primary care, subsequent questions were asked about the last place that was visited.

Data collection

To evaluate the feasibility, internal consistency and validity of the Vietnamese Primary Care Assessment Tool (VN PCAT-AE), a quantitative cross-sectional study was conducted. A multistage and purposive sampling approach was used to select the study sites. Three provinces were chosen purposively to capture the diverse characteristics of central Vietnam: Khanh Hoa, Thua Thien Hue and Quang Tri. To obtain a sample representing the diversity of the country, we purposively selected two to four districts from each province, depending on the number of commune health centers with working physicians. In addition, within these constraints, we chose at least one lowland district, one mountainous district and one urban district when possible. Specifically, in Thua Thien Hue, the survey was done with 24 communes in four districts (six communes per district); in Quang Tri, 14 communes in three districts (one district with six communes and two other districts with four communes); and in Khanh Hoa, two districts with a total of 18 communes were selected, for an overall total of 56 communes.

From each commune, 30 households were selected. Half (15) of the households were selected from a list of patients recently treated at the local CHC. The other households were selected from a commune household list. Another 15 from each list were placed on reserve lists for later use in the case of refusals or non-respondents. On the patient list from the CHC, we started with the household of the first person on the examination list of the CHC (i.e. the most recent patient), and then selected every 10th patient who followed (patients 11, 21, 31. . .) until the intended sample size was reached. Using a similar technique, we selected every tenth household from a separate list of households in the commune.

Each selected household was visited and the head of household surveyed, as well as one other willing adult (≥ 18 years old) if available during this home visit. Data collection was conducted from January through August of 2014 and questionnaires were administered through in-person interviews. Only participants who had utilized health care services at a health facility at least once over the past two years were surveyed.

Before the interview, participants received a full explanation of the study's content and purpose and signed a consent form if they agreed to participate. Refusals were rare and so a response rate was not specifically tracked, but surveyors estimated the refusal and non-response rates at less than 5%. If a household refused or could not be reached after three attempts, then another household was chosen at random from the reserve list. Participants

were compensated for their time with small gifts of appreciation (worth \$2.50 USD) upon completion of the interview.

This study obtained ethical approval from the Scientific Committee of Hue University of Medicine and Pharmacy on 18th March 2014 and IRB review from Boston University (H-31432).

Data analysis

All collected questionnaires were cleaned and scanned into a computer for storage and convenient review in the future, followed by entry into EpiData by a group of six students working in pairs. Double data entry was used to check for errors in data entry. Data analysis was performed using SPSS software version 23.0.

Subsequent full validation involved several steps. First, individual items were evaluated on several criteria. Items with a high percentage ($\geq 20\%$) of item non-response or “don’t know/don’t remember” responses, or items with a large floor or ceiling effect ($> 80\%$ of respondents chose the lowest or highest answering category) were removed. Next, the item-total correlation for the remaining items in each scale was calculated (item-total correlation before review). Items were removed if the item-total correlation was below 0.30 or if Cronbach’s coefficient alpha for that scale improved substantially when the item was removed. Finally, item-discriminant validity was tested: for each item, the item-total correlation (item-total correlation after review) with the hypothesized scale should be substantially higher than the correlation with the other scales. In the second phase, Cronbach’s coefficient alpha was used to examine how well all items measured the same construct (internal consistency). A value of 0.70 is very often seen as a minimum[21].

The recoding progress and calculation for the sum mean score of domains and subdomains of primary care strictly complied with the guideline PCAT manual issued by John Hopkins University in 1998. For calculating the sum mean scores of domains and subdomains, a mean value was assigned to “not sure/don’t remember” answers as well as to missing values.

Results

Characteristics of study population

Table 2 describes the characteristics of the 3289 participants with valid questionnaires. For the extent of affiliation with a place or doctor, results suggested that most participants have a strong (35%) or very strong (29%) affiliation with their doctor, while approximately a third report a weak (29%) or very weak (6.1%) affiliation.

Evaluation of the individual items

Evaluation of the individual items shows that fourteen items were problematic (Table 3). Because of a high percentage of “don’t know/don’t remember” or missing answers ($\geq 20\%$), two items were removed from the domain of First contact—accessibility (C8 and C10), in addition to three items from the domain Comprehensiveness (services available) (G16, G17, G18) and one item (J12) from the domain of Community orientation.

Next, items with a large floor or ceiling effect ($> 80\%$) were identified, including one item from the domain of First contact—accessibility (C3) and two items from the domain of Ongoing care (D2 and D3). Item-total correlations for the remaining items in each scale were then used to identify those whose item-total correlation was below 0.30 including two items from the domain of First contact—accessibility (C11, C12) and two items from the domain of Ongoing care (D14 and D15). Finally, Cronbach’s alpha was assessed (see Table 4) and improved

Table 2. Characteristics of the participants (n = 3289).

Characteristics	n	%
Gender (n = 3289)		
Male	1421	43.2
Female	1868	56.8
Age (years) (n = 3286), Mean: 50.1 (SD:16.6)		
18 to 39	1387	42.2
40 to 59	951	28.9
60 and over	948	28.8
Education (n = 3267)		
Completed primary school	986	30.2
Completed secondary school	843	25.8
Completed high school	491	15.0
Completed some university/college	290	8.9
Did not complete primary school	572	17.5
Illiterate	85	2.6
Occupation (n = 3268)		
Employed full-time	1725	52.9
Employed part-time	509	15.6
Not employed	585	17.9
Retired/in school	441	13.5
Living area (n = 3289)		
Urban	1194	36.3
Rural	2095	63.7
Self-rated health (n = 3286)		
Excellent	12	0.4
Very good	185	5.6
Good	1454	44.2
Fair	1330	40.5
Poor	305	9.3
Chronic problem in last year (n = 3284)		
Yes	422	13.2
No	2769	86.8
Trouble with healthcare payment (n = 3006)		
Yes	532	17.7
No	2474	82.3
Source of healthcare payment		
Government health insurance	2469	75.3
Private health insurance	90	2.8
Free or discounted by the health facility	941	28.8
Out of pocket	1591	48.6
Time affiliated with health facility (n = 3285)		
Less than 6 months	427	13.3
6 months—1 year	335	10.4
1–2 years	642	20.0
3–4 years	500	15.6
5 years or more	1311	40.8
Reason to choose this health facility (n = 3283)		
Patient or someone in family chose it	1837	56.3

(Continued)

Table 2. (Continued)

Characteristics	n	%
Patient was assigned to it	1428	43.7
Extent of Affiliation with a Place/Doctor (n = 3289)		
Very weak affiliation	202	6.1
Weak affiliation	972	29.6
Strong affiliation	1146	34.8
Very strong affiliation	969	29.5
Types of health facility (n = 3289)		
Commune health center	1506	45.8
Polyclinic	215	6.5
District hospital	389	11.8
Provincial hospital	147	4.5
Central hospital	83	2.5
Private clinic	198	6.0
Pharmacy	127	3.9
Other type of health facility	624	19.0

SD: Standard deviation

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substantially (from 0.65 to 0.71) for the first contact-access domain when item C9 was removed. For all items, the item-total correlation with the hypothesized scale was higher than the correlation with the other scales (see S1 Table).

Internal consistency of the different scales

Based on these parameters, 70 items of the VN PCAT-AE were determined to be appropriate for use in this population, to represent four core domains with six scales and three derivative domains with three scales (Table 4). Except for the scale of Family Centeredness, all of the retained scales have a Cronbach's alpha above 0.70.

Evaluation within subpopulations

The robustness of the results was explored in different subpopulations such as rural and urban populations, provinces, populations from the CHC consumer's list and from the community household list. The obtained results are highly stable, however there were a few items that showed a poorer fit in some subpopulations: item C2 and item G2 in Quang Tri province, item G1 in Khanh Hoa province and item G23 in the urban population.

Discussion

Strictly applying standardized guidelines for translation and adaptation followed by a routine psychometric validation method, we confirmed the Vietnamese PCAT (VN PCAT-AE) to be a valid and reliable instrument for the Vietnamese context, making this the first proven tool developed in Vietnam for comprehensive evaluation of primary care.

The VN PCAT-AE successfully measures all of the important domains of primary care with six scales representing four core primary care domains: first contact accessibility and utilization (first contact domain), ongoing care, coordination care, comprehensiveness-services available and comprehensiveness-services provided (comprehensiveness domain). It also

Table 3. Item mean (SD), percentage ‘don’t know, don’t remember/missing’, floor/ceiling effect, item total correlation before review, item-total correlation after review and range of item correlation with other domains.

	Item	Item mean (SD)	% missing/ % don’t know, don’t remember	Floor/ ceiling effect	Item total correlation before review	Item total correlation after review	Range of item correlation with other domains (min/ max)
B. First contact—utilization							
B1	When you need a regular general checkup, do you go to your GENERAL DOCTOR before going somewhere else?	2.72 (1.42)	0.0/1.8	38.3/51.8	0.84	0.84	0.03/0.22
B2	When you have a new health problem, do you go to your GENERAL DOCTOR before going somewhere else?	3.17 (1.25)	0.0/0.7	22.6/65.3	0.81	0.81	0.02/0.17
B3	When you have to see a specialist, does your GENERAL DOCTOR have to approve or give you a referral?	2.43 (1.39)	0.2/2.4	45.3/38.8	0.79	0.79	0.02/0.27
C. First contact—accessibility							
C1	Is your GENERAL DOCTOR open on Saturday or Sunday?	2.98 (1.31)	0.1/3.6	27.8/57.5	0.60	0.66	-0.02/-0.15
C2	Is your GENERAL DOCTOR open on at least some weekday evenings until 8 PM?	2.83 (1.32)	0.2/6.1	30.0/49.4	0.52	0.59	-0.002/0.09
C3	When your GENERAL DOCTOR is open and you get sick, would someone from there see you the same day? *	3.79 (0.63)	0.2/1.2	3.7/87.2	Not assessed	Not assessed	Not assessed
C4	When your GENERAL DOCTOR is open, can you get advice quickly over the phone if you need it?	1.67 (1.10)	0.2/9.9	69.3/13.4	0.51	0.54	0.09/0.38
C5	When your GENERAL DOCTOR is closed, is there a phone number you can call when you get sick?	2.13 (1.36)	0.2/6.2	56.4/30.1	0.60	0.65	0.09/0.38
C6	When your GENERAL DOCTOR is closed on Saturday and Sunday and you get sick, would someone from there see you the same day?	3.07 (1.20)	0.1/7.6	21.3/54.1	0.60	0.73	0.10/0.32
C7	When your GENERAL DOCTOR is closed and you get sick during the night, would someone from there see you that night?	3.04 (1.18)	0.0/9.2	21/50.7	0.55	0.70	0.11/0.38
C8	Is it easy to get an appointment for a general check-up there? *	2.42 (1.37)	0.1/93.2	45/36.5	Not assessed	Not assessed	Not assessed
C9	Once you get to your GENERAL DOCTOR, do you have to wait more than 30 minutes before you are checked by the doctor or nurse? *	2.71 (1.30)	0.4/4.7	28.5/45.9	0.39	Not assessed	Not assessed
C10	Do you have to wait a long time or talk to too many people to make an appointment with your GENERAL DOCTOR? *	1.76 (1.14)	0.1/92.4	64.3/14.9	Not assessed	Not assessed	Not assessed
C11	Is it difficult for you to get medical care from your GENERAL DOCTOR when you think it is needed? *	3.42 (1.00)	0.3/1.4	9.7/69.9	0.26	Not assessed	Not assessed
C12	When you have to go to your GENERAL DOCTOR, do you have to take off from work or school to go? *	2.18 (1.36)	0.0/0.7	52.2/32.6	0.24	Not assessed	Not assessed
D. ONGOING CARE							
D1	When you go to your GENERAL DOCTOR’s, are you taken care of by the same doctor or nurse each time?	2.41 (1.40)	0.1/1.6	46.4/39.4	0.49	0.50	0.03/0.23
D2	Do you think your GENERAL DOCTOR understands what you say or ask? *	3.81 (0.49)	0.1/0.7	1.3/88.4	Not assessed	Not assessed	Not assessed
D3	Are your questions to your GENERAL DOCTOR answered in ways that you understand? *	3.81 (0.51)	0.1/0.6	1.3/84.3	Not assessed	Not assessed	Not assessed
D4	If you have a question, can you call and talk to the doctor or nurse who knows you best?	2.13 (1.32)	0.3/5.9	53.7/27.3	0.46	0.48	0.13/0.31
D5	Does your GENERAL DOCTOR give you enough time to talk about your worries or problems?	3.42 (0.91)	0.2/1.2	7.6/63.9	0.37	0.37	0.00/0.26
D6	Do you feel comfortable telling your GENERAL DOCTOR about your worries or problems?	3.47 (0.90)	0.0/0.9	7.8/67.8	0.35	0.36	0.01/0.18

(Continued)

Table 3. (Continued)

	Item	Item mean (SD)	% missing/ % don't know, don't remember	Floor/ ceiling effect	Item total correlation before review	Item total correlation after review	Range of item correlation with other domains (min/ max)
D7	Does your GENERAL DOCTOR know you very well as a person, rather than as someone with a medical problem?	2.17 (1.29)	0.1/2.7	49.2/26.7	0.69	0.69	0.10/0.32
D8	Does your GENERAL DOCTOR know who lives with you?	2.27 (1.35)	0.2/4.1	48.5/32.8	0.70	0.72	0.05/0.36
D9	Does your GENERAL DOCTOR know what problems are most important to you?	2.12 (1.22)	0.2/5.8	47.3/21	0.56	0.58	0.05/0.30
D10	Does your GENERAL DOCTOR know your complete medical history?	2.40 (1.24)	0.1/5.3	37.5/27.4	0.61	0.61	0.10/0.31
D11	Does your GENERAL DOCTOR know about your work or employment?	2.76 (1.33)	0.5/2.8	32.2/47.2	0.62	0.62	0.09/0.31
D12	Would your GENERAL DOCTOR know if you had trouble getting or paying for medicines you needed?	1.68 (1.04)	0.3/7.4	63.9/11.4	0.56	0.58	0.10/0.26
D13	Does your GENERAL DOCTOR know about all the medications you are taking?	2.33 (1.24)	0.5/3.8	38.9/27.5	0.51	0.53	0.02/0.34
D14	Could you change your GENERAL DOCTOR if you wanted to?	2.55 (1.34)	0.2/2.7	37.7/39.9	-0.04	Not assessed	Not assessed
D15	Would you change from your GENERAL DOCTOR to somewhere else if it was easy to do?	2.62 (1.33)	0.1/3.1	34.4/42.0	0.25	Not assessed	Not assessed
E. COORDINATION							
E6	Did your GENERAL DOCTOR suggest you go to the specialist or special service? (848)	2.38 (1.47)	0.0/0.1	52.1/43.9	0.75	0.75	0.03/0.35
E7	Did your GENERAL DOCTOR know you made these visits to the specialist or special service? (843)	2.50 (1.40)	0.0/0.7	42.9/42.4	0.76	0.76	0.06/0.32
E8	Did your GENERAL DOCTOR discuss with you different places you could have gone to get help with that problem? (837)	2.50 (1.40)	0.1/1.3	43.2/40.9	0.73	0.73	0.05/0.25
E9	Did your GENERAL DOCTOR or someone working with your GENERAL DOCTOR help you make the appointment for that visit? (799)	1.46 (0.98)	0.1/5.8	74.7/9.7	0.58	0.58	0.05/0.20
E10	Did your GENERAL DOCTOR write down any information for the specialist about the reason for the visit? (824)	2.14 (1.39)	0.1/2.8	55.6/32.0	0.71	0.71	-0.03/0.36
E11	Does your GENERAL DOCTOR know what the results of the visit were? (824)	2.14 (1.33)	0.4/2.6	52.1/28.0	0.65	0.65	0.03/0.23
E12	After you went to the specialist or special service, did your GENERAL DOCTOR talk with you about what happened at the visit? (829)	1.88 (1.26)	0.1/2.5	62.7/22.4	0.63	0.63	0.02/0.30
E13	Does your GENERAL DOCTOR seem interested in the quality of care you get from that specialist or special service? (796)	1.87 (1.20)	0.4/6.6	56.8/16.8	0.65	0.65	0.02/0.37
G. COMPREHENSIVENESS (SERVICES AVAILABLE)							
G1	Answers to questions about nutrition or diet	3.39 (1.10)	0.0/3.3	15.4/72.1	0.34	0.34	0.09/0.25
G2	Immunizations (shots)	3.20 (1.24)	0.1/3.9	22.1/67.3	0.52	0.52	0.06/0.26
G3	Checking to see if your family is eligible for any social service programs or benefits such as: economic, medical, food supports	2.26 (1.34)	0.3/11.3	48.5/31.6	0.4	0.4	0.10/0.30
G4	Dental check up	3.09 (1.28)	0.0/4.3	24.6/61.8	0.62	0.62	0.03/0.16

(Continued)

Table 3. (Continued)

	Item	Item mean (SD)	% missing/ % don't know, don't remember	Floor/ ceiling effect	Item total correlation before review	Item total correlation after review	Range of item correlation with other domains (min/ max)
G5	Treatment by a dentist	2.14 (1.33)	0.1/11.1	53.3/28.6	0.46	0.46	-0.05/-0.22
G6	Family planning or birth control methods	3.25 (1.16)	0.2/8.0	18.4/64.4	0.59	0.59	0.02/0.27
G7	Substance or drug abuse counseling or treatment	2.27 (1.29)	0.1/17.5	45.6/27.2	0.62	0.62	0.09/0.38
G8	Counseling for mental health problems	2.40 (1.30)	0.1/17.0	41.2/30.7	0.65	0.65	0.03/0.37
G9	Counseling and treatment for alcoholism	2.12 (1.27)	0.5/15.4	51/24.3	0.62	0.62	0.10/0.45
G10	Sewing up a cut that needs stitches	3.44 (1.05)	0.4/4.1	13.4/73.1	0.64	0.64	0.01/0.17
G11	Counseling and testing for HIV/AIDS	2.55 (1.31)	0.5/14.8	36.9/36.9	0.61	0.61	0.00/0.28
G12	Ear check up	3.24 (1.20)	0.1/4.7	20.2/66.7	0.65	0.65	0.02/0.14
G13	Eye check up	3.27 (1.18)	0.1/4.3	19.1/67.9	0.64	0.64	0.01/0.15
G14	Allergy treatment	3.23 (1.17)	0.3/11.7	18.1/64.2	0.47	0.47	0.00/0.14
G15	Temporary fix for broken bone	3.27 (1.13)	0.4/6.3	16.4/64.7	0.63	0.63	-0.02/0.20
G16	Gastric catheter insertion/ nasogastric tube*	1.95 (1.25)	0.3/20.0	59/22	Not assessed	Not assessed	Not assessed
G17	PAP tests for cervical cancer*	1.82 (1.18)	0.1/25.9	62.8/17	Not assessed	Not assessed	Not assessed
G18	Rectal exams or sigmoidoscopy exams to test for bowel cancer*	1.76 (1.13)	0.2/27.1	64.2/14.4	Not assessed	Not assessed	Not assessed
G19	Smoking counseling	2.18 (1.29)	0.4/14.3	49.6/25.7	0.57	0.57	0.12/0.46
G20	Prenatal care	3.25 (1.15)	0.4/7.8	18/63.8	0.69	0.69	0.08/0.24
G23	Changes in mental or physical abilities that are normal with getting older	2.63 (1.33)	0.2/9.9	36.2/40.2	0.44	0.44	0.00/0.36
G24	Postpartum care of umbilical cord	3.17 (1.19)	0.0/8.9	19.8/60.4	0.70	0.70	0.10/0.23
G25	Monitoring of a normal Pregnancy	3.34 (1.12)	0.0/7.0	16.4/68.2	0.67	0.67	0.11/0.28
	H. COMPREHENSIVENESS (SERVICES PROVIDED)						
H1	Advice about healthy foods and unhealthy foods	3.41 (1.13)	0.1/1.1	16.7/75.1	0.43	0.43	0.07/0.30
H2	Home safety, like preventing accidents, burning, electric shock and storing medicines safely. . .	2.03 (1.31)	0.0/4.9	58.7/26.1	0.68	0.68	0.11/0.32
H3	Advice on helmet use or safety seats	1.70 (1.18)	0.2/4.7	71.0/17.9	0.67	0.67	0.09/0.33
H4	Ways to handle family conflicts that may arise from time to time	1.51 (1.01)	0.5/5.3	76.7/11	0.64	0.64	0.13/0.33
H5	Advice about appropriate exercise for you	2.82 (1.36)	0.2/3.0	33.1/51.9	0.56	0.56	-0.02/0.27

(Continued)

Table 3. (Continued)

	Item	Item mean (SD)	% missing/ % don't know, don't remember	Floor/ ceiling effect	Item total correlation before review	Item total correlation after review	Range of item correlation with other domains (min/ max)
H6	Tests for cholesterol levels in your blood	2.07 (1.33)	0.3/8.0	57.5/27.3	0.48	0.48	0.00/0.27
H7	Checking on and discussing the medications you are taking	2.76 (1.35)	0.3/2.6	33.9/48.2	0.55	0.55	0.06/0.29
H8	Possible exposures to harmful substances in your home, at work, or in your neighborhood	1.73 (1.14)	0.2/0.2	67.3/15.4	0.69	0.69	0.08/0.37
H9	Advice on storing labour equipmentsafely	1.64 (1.14)	0.2/4.8	73.3/15.9	0.71	0.71	0.10/0.37
H10	How to prevent hot water burns	1.91 (1.28)	0.3/5.0	63.8/23.2	0.74	0.74	0.12/0.32
H11	How to prevent falls for the elderly	2.22 (1.38)	0.5/4.9	53.6/33.2	0.68	0.68	0.09/0.29
	I. FAMILY-CENTEREDNESS						
I1	Does your GENERAL DOCTOR ask you about your ideas and opinions when planning treatment and care for you or a family member?	2.30 (1.37)	0.3/2.5	49.3/34.2	0.80	0.80	0.09/0.36
I2	Has your GENERAL DOCTOR asked about illnesses or problems that might run in your family?	2.51 (1.38)	0.3/3.2	41.7/40.8	0.77	0.77	0.10/0.31
I3	Would your GENERAL DOCTOR meet with members of your family if you thought it would be helpful?	2.23 (1.28)	0.3/5.9	47.3/25.6	0.77	0.77	0.09/0.39
	J. COMMUNITY ORIENTATION						
J1	Does anyone at your GENERAL DOCTOR's office ever make home visits?	1.52 (1.07)	0.0/0.8	79.4/13.7	0.59	0.59	0.13/0.43
J2	Does your GENERAL DOCTOR know about the important health problems of your neighbourhood?	2.41 (1.25)	0.1/7.9	38.0/28.4	0.64	0.64	0.11/0.44
J3	Does your GENERAL DOCTOR get opinions and ideas from people that will help to provide better health care?	3.11 (1.12)	0.1/6.1	17.8/50.7	0.74	0.74	0.10/0.37
	Does your GENERAL DOCTOR do any of the following to help determine the effectiveness of his/her services/ programs?						
J11	Surveys of patients to see if the services are meeting people's needs?	2.56 (1.32)	0.0/4.0	37.3/37.5	0.72	0.72	0.01/0.34
J12	Surveys in the community to find out about health problems s/he should know about? *	2.15 (1.23)	0.1/20.0	47.9/21.7	Not assessed	Not assessed	Not assessed
J18	Collect feedback from patients on health staff performance?	2.47 (1.28)	0.1/14.7	37.9/31.7	0.72	0.72	0.06/0.36
	K. CULTURALLY COMPETENT						
K1	Would you recommend your GENERAL DOCTOR to a friend or relative?	2.44 (1.35)	0.1/1.4	42.9/35.5	0.84	0.84	0.03/0.26
K2	Would you recommend your GENERAL DOCTOR to someone who does not speak Vietnamese well?	1.91 (1.20)	0.0/6.1	59.4/17.8	0.86	0.86	0.03/0.23
K3	Would you recommend your GENERAL DOCTOR to someone who uses folk medicine, such as herbs or homemade medicines, or has special beliefs about health care?	2.04 (1.24)	0.1/7.2	54.8/20.4	0.85	0.85	0.06/0.18

SD: Standard deviation;

*: Removed from further analysis

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Table 4. Descriptive statistics of the domains scales.

Domain	Number of items in the original version (Total: 86)	Number of items in the Vietnamese version (Total: 70)	Mean (SD)	Cronbach's Alpha
First contact—utilization	3	3	2.78 (1.10)	0.74
First contact—access	12	6	2.62 (0.83)	0.71
Ongoing Care	15	11	2.49 (0.68)	0.77
Coordination	8	8	2.12 (0.90)	0.84
Comprehensiveness (Services Available)	25	20	2.91 (0.71)	0.90
Comprehensiveness (Services Provided)	11	11	2.18 (0.77)	0.84
Family-Centeredness	3	3	2.36 (1.05)	0.68
Community Orientation	6	5	2.40 (0.83)	0.71
Culturally Competent	3	3	2.14 (1.08)	0.80

SD: Standard deviation

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successfully measures another three derivative domains of family centeredness, community orientation and cultural competence.

The VN PCAT-AE retains most major characteristics of the original PCAT version with 70 valid items. It is quite similar to PCAT versions in Argentina and South Africa with a few items determined not to be appropriate in these settings and with the addition of questions more relevant to their contexts [20, 22]. In other countries, some researchers have shortened the questionnaires by rearranging items into different scales or the addition or subtraction of scales [16, 17, 19]. We however sought to maintain the integrity of the original tool to the utmost degree possible.

It is also important to note, however, that the total absence or gross inadequacy of services in a specific domain in a certain country or setting is likely to result in psychometric qualities that threaten the validity of the tool in that domain. In Vietnam, despite of a series of great strides and improvements over the last 20 years, the primary care system is still in an early phase of development and many improvements have not yet been widely and systematically implemented throughout the entire country. In particular, a substantial floor effect may be found as a vast majority of patients in this study reported the absence of a variety of services. For instance, many questions related to appointments were removed from the access domain because of the absence of appointment systems in Vietnam, and thus resulted in removing half of the questions from this domain. While the access domain in the VN PCAT-AE remains an overall valid measure of validity, with the removal of so many items related to appointments, it may no longer maintain the same level of integrity in this domain compared with the original tool.

With primary care services in Vietnam improving, however, it is possible that some questions removed from the tool may become more valid in the future as the primary care system becomes more sophisticated and thus future researchers may want to consider reintegrating some of these questions in the tool and reassessing their validity. Recent positive changes in policy and planning by the Ministry of Health and other government entities for family medicine development and strengthening of the primary care network are anticipated to lead to significant system improvements in the future.

This study has several potential limitations. Firstly, the sample was not recruited randomly in an effort to purposively capture the diverse characteristics of the population in the Central region. Secondly, it was a home survey in which the head of household and one additional adult member were surveyed at time of the visit without a systemic method in place for choosing the additional adult member if more than one might be available, and therefore potentially introducing another source of bias.

In spite of these limitations, the Vietnamese PCAT version VN PCAT-AE demonstrates adequate validity and reliability to be used as an effective tool for comprehensively measuring the quality of primary care in Vietnam from the consumer perspective.

Supporting information

S1 Table. Item correlation with domain scores after review (item convergent validity and item discriminant validity).

(DOCX)

S1 Dataset. Vietnam PCAT consumer data.

(SAV)

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Supporting information Paper 1

S1 Table. Item correlation with domain scores after review (item convergent validity and item discriminant validity)

		First contact – utilization	First contact – access	Ongoing Care	Coordination Care	Comprehensiveness (Services Available)	Comprehensiveness (Services Provided)	Family-Centeredness	Community Orientation	Culturally Competent
B. First contact – utilization										
B1	When you need a regular general checkup, do you go to your GENERAL DOCTOR before going somewhere else?	0.84	0.03	0.13	0.22	0.19	0.12	0.09	0.13	0.10
B2	When you have a new health problem, do you go to your GENERAL DOCTOR before going somewhere else?	0.81	0.02	0.15	0.17	0.14	0.09	0.12	0.13	0.10
B3	When you have to see a specialist, does your GENERAL DOCTOR have to approve or give you a referral?	0.79	0.02	0.16	0.27	0.15	0.14	0.08	0.12	0.08
C. First contact – access										
C1	Is your GENERAL DOCTOR open on Saturday or Sunday?	-0.15	0.66	0.03	0.05	-0.02	0.12	0.13	0.14	0.03
C2	Is your GENERAL DOCTOR open on at least some weekday evenings until 8 PM?	-0.15	0.59	-0.002	0.05	0.07	0.17	0.06	0.8	0.9
C4	C4 When your GENERAL DOCTOR is open, can you get advice quickly over the phone if you need it?	0.09	0.54	0.38	0.17	0.1	0.23	0.27	0.35	0.22
C5	When your GENERAL DOCTOR is closed, is there a phone number you can call when you get sick?	0.12	0.65	0.38	0.19	0.09	0.24	0.24	0.3	0.2
C6	When your GENERAL DOCTOR is closed on Saturday and Sunday and you get sick, would someone from there see you the same day?	0.1	0.73	0.12	0.11	0.32	0.12	0.28	0.22	0.11
C7	When your GENERAL DOCTOR is closed and you get sick during the night, would someone from there see you that night?	0.12	0.7	0.15	0.12	0.38	0.13	0.26	0.23	0.11
D. Ongoing Care										
D1	When you go to your GENERAL DOCTOR's, are you taken care of by the same doctor or nurse each time?	0.03	0.04	0.50	0.16	-0.15	0.07	0.11	0.23	0.10
D4	If you have a question, can you call and talk to the doctor or nurse who knows you best?	0.13	0.31	0.48	0.19	0.15	0.29	0.17	0.30	0.14
D5	Does your GENERAL DOCTOR give you enough time to talk about your worries or problems?	0.00	0.07	0.37	0.05	0.07	0.14	0.16	0.26	0.00

D6	Do you feel comfortable telling your GENERAL DOCTOR about your worries or problems?	-0.03	0.11	0.36	0.08	0.03	0.09	0.18	0.18	0.01
D7	Does your GENERAL DOCTOR know you very well as a person, rather than as someone with a medical problem?	0.20	0.16	0.69	0.21	0.10	0.22	0.20	0.32	0.13
D8	Does your GENERAL DOCTOR know who lives with you?	0.19	0.15	0.72	0.22	0.05	0.20	0.24	0.36	0.08
D9	Does your GENERAL DOCTOR know what problems are most important to you?	0.05	0.23	0.58	0.30	0.07	0.29	0.19	0.30	0.19
D10	Does your GENERAL DOCTOR know your complete medical history?	0.12	0.10	0.61	0.23	0.18	0.31	0.24	0.31	0.17
D11	Does your GENERAL DOCTOR know about your work or employment?	0.18	0.11	0.62	0.17	0.15	0.20	0.23	0.31	0.09
D12	Would your GENERAL DOCTOR know if you had trouble getting or paying for medicines you needed?	0.16	0.17	0.58	0.24	0.10	0.24	0.17	0.26	0.25
D13	Does your GENERAL DOCTOR know about all the medications you are taking?	0.02	0.14	0.53	0.27	0.13	0.31	0.25	0.34	0.15
E. COORDINATION										
E6	Did your GENERAL DOCTOR suggest you go to the specialist or special service? (848)	0.35	0.08	0.19	0.75	0.06	0.10	0.12	0.12	0.03
E7	Did your GENERAL DOCTOR know you made these visits to the specialist or special service? (843)	0.32	0.08	0.25	0.76	0.06	0.10	0.16	0.13	0.09
E8	Did your GENERAL DOCTOR discuss with you different places you could have gone to get help with that problem? (837)	0.20	0.14	0.25	0.73	0.05	0.21	0.20	0.22	0.08
E9	Did your GENERAL DOCTOR or someone working with your GENERAL DOCTOR help you make the appointment for that visit? (799)	0.07	0.12	0.20	0.57	0.10	0.16	0.14	0.14	0.05
E10	Did your GENERAL DOCTOR write down any information for the specialist about the reason for the visit? (824)	0.36	0.09	0.16	0.71	0.06	0.08	0.07	0.07	-0.03
E11	Does your GENERAL DOCTOR know what the results of the visit were? (824)	0.03	0.13	0.23	0.65	0.04	0.18	0.23	0.20	0.14
E12	After you went to the specialist or special service, did your	0.02	0.20	0.30	0.63	0.11	0.29	0.26	0.29	0.07

G24	Postpartum care of umbilical cord	0.18	0.16	0.11	0.10	0.70	0.23	0.23	0.17	0.14
G25	Monitoring of a normal pregnancy	0.28	0.13	0.13	0.11	0.67	0.25	0.21	0.19	0.12
H. Comprehensiveness (Services Provided)										
H1	Advice about healthy foods and unhealthy foods	0.07	0.18	0.27	0.12	0.22	0.43	0.27	0.30	0.14
H2	Home safety, like preventing accidents, burning, electric shock and storing medicines safely...	0.11	0.11	0.32	0.16	0.24	0.68	0.20	0.31	0.11
H3	Advice on helmet use or safety seats	0.12	0.15	0.32	0.21	0.27	0.67	0.17	0.33	0.09
H4	Ways to handle family conflicts that may arise from time to time	0.13	0.20	0.32	0.24	0.22	0.64	0.20	0.33	0.15
H5	Advice about appropriate exercise for you	-0.02	0.09	0.14	0.12	0.27	0.56	0.18	0.23	0.10
H6	Tests for cholesterol levels in your blood	0.06	0.09	0.00	0.00	0.27	0.48	0.11	0.09	0.07
H7	Checking on and discussing the medications you are taking	0.06	0.14	0.23	0.19	0.21	0.55	0.20	0.29	0.09
H8	Possible exposures to harmful substances in your home, at work, or in your neighborhood	0.14	0.20	0.31	0.28	0.31	0.69	0.23	0.37	0.08
H9	Advice on storing labor equipment's safety	0.10	0.19	0.30	0.21	0.27	0.71	0.20	0.37	0.13
H10	How to prevent hot water burns	0.12	0.21	0.26	0.15	0.29	0.74	0.17	0.32	0.15
H11	How to prevent falls for the elderly	0.09	0.19	0.22	0.15	0.29	0.68	0.19	0.29	0.17
I. Family-Centeredness										
I1	Does your GENERAL DOCTOR ask you about <i>your</i> ideas and opinions when planning treatment and care for you or a family member?	0.09	0.21	0.29	0.24	0.23	0.25	0.80	0.36	0.20
I2	Has your GENERAL DOCTOR asked about illnesses or problems that might run in your family?	0.10	0.24	0.23	0.16	0.24	0.21	0.77	0.31	0.24
I3	Would your GENERAL DOCTOR meet with members of your family if you thought it would be helpful?	0.09	0.30	0.31	0.18	0.24	0.25	0.77	0.39	0.19
J. Community Orientation										
J1	Does anyone at your GENERAL DOCTOR's office ever make home visits?	0.13	0.25	0.43	0.29	0.16	0.28	0.31	0.59	0.14

J2	Does your GENERAL DOCTOR know about the important health problems of your neighborhood?	0.23	0.27	0.44	0.16	0.22	0.31	0.28	0.64	0.11
J3	Does your GENERAL DOCTOR get opinions and ideas from people that will help to provide better health care?	0.1	0.19	0.35	0.15	0.19	0.33	0.37	0.74	0.13
	Does your GENERAL DOCTOR do any of the following to help determine the effectiveness of his/her services/programs?									
J11	Surveys of patients to see if the services are meeting people's needs?	0.01	0.22	0.33	0.16	0.15	0.34	0.27	0.72	0.14
J18	Collect feedback from patients on health staff performance?	0.06	0.21	0.22	0.11	0.29	0.36	0.32	0.72	0.15
K. Culturally Competent										
K1	Would you recommend your GENERAL DOCTOR to a friend or relative?	0.03	0.17	0.22	0.14	0.09	0.22	0.26	0.23	0.84
K2	Would you recommend your GENERAL DOCTOR to someone who does not speak Vietnamese well?	0.11	0.18	0.16	0.03	0.12	0.13	0.23	0.14	0.86
K3	Would you recommend your GENERAL DOCTOR to someone who uses folk medicine, such as herbs or homemade medicines, or has special beliefs about health care?	0.16	0.13	0.15	0.06	0.13	0.13	0.18	0.14	0.85

Paper 2: Development and validation of the Vietnamese primary care assessment tool - Provider version

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Research

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Development and validation of the Vietnamese Primary Care Assessment Tool – provider version

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Abstract

Aim: To adapt the provider version of the Primary Care Assessment Tool (PCAT) for Vietnam and determine its internal consistency and validity. **Background:** There is a growing need to measure and explore the impact of various characteristics of health care systems on the quality of primary care. It would provide the best evidence for policy makers if these evaluations come from both the demand and supply sides of the health care sector. Comparatively more researchers have studied primary care quality from the consumer perspective than from the provider's perspective. This study aims at the latter. **Method:** Our study translated and adapted the PCAT provider version (PCAT PE) into a Vietnamese version, after which a cross-sectional survey was conducted to examine the feasibility, internal consistency and validity of the Vietnamese PCAT provider version (VN PCAT PE). All general doctors working at 152 commune health centres in Thua Thien Hue province had been selected to participate in the survey. **Findings:** The VN PCAT PE is an instrument for evaluation of primary care in Vietnam with 116 items comprising six scales representing four core primary care domains, and three additional scales representing three derivative domains. From the translation and cultural adaptation stage, two items were combined, two items were removed and one item was added. Six other items were excluded due to problems in item-total correlations. All items have a low non-response or 'don't know/don't remember' response rate, and there were no floor or ceiling effects. All scales had a Cronbach's alpha above 0.80, except for the Coordination scale, which still was above the minimum level of 0.70. **Conclusion:** The VN PCAT PE demonstrates adequate internal consistency and validity to be used as an effective tool for measuring the quality of primary care in Vietnam from the provider perspective.

Introduction

Since the Alma-Ata declaration 40 years ago, primary care has been described repeatedly as essential care that is (1) universally accessible to individuals and families in communities, (2) available at an affordable cost to communities and countries and (3) the first level of contact for patients (or the first element of a continuing health care process) (WHO, 2008). With these notable features, there is compelling evidence that stronger primary care systems are associated in general with better population health outcomes including lower mortality rates, rates of pre-mature death and hospitalizations for ambulatory care sensitive conditions, and higher infant birth weight, life expectancy, and satisfaction with the health care system (Starfield, 1991; Starfield and Shi, 2002; Macinko *et al.*, 2003; Niti and Ng, 2003). Primary care is a factor in improving public health and health outcomes and the prevention of illness and death, with lower use of hospital-based medical care, associated with lower costs (Starfield *et al.*, 2005b; Friedberg *et al.*, 2010), and more equitable distribution of health within a population (Starfield *et al.*, 2005a; 2005b; Shi *et al.*, 2005a; 2005b). A critical review on the contribution of primary care to health and health systems in low- and middle-income countries (LMIC) showed that primary-care-focused health initiatives have improved access to health care, including among the poor, at reasonably low cost (Kruk *et al.*, 2010). There is also evidence that primary care programmes have reduced child mortality and, in some cases, wealth-based disparities in mortality (Kruk *et al.*, 2010).

Similar to many LMIC, Vietnam faces the challenges of the double burden of communicable and non-communicable disease and the trend to sustainable development from its own funding. Since 2013, the government has issued many important policy changes to reinforce the grassroot networks as well as the health care system in general (Vietnam Ministry of Health, 2013;

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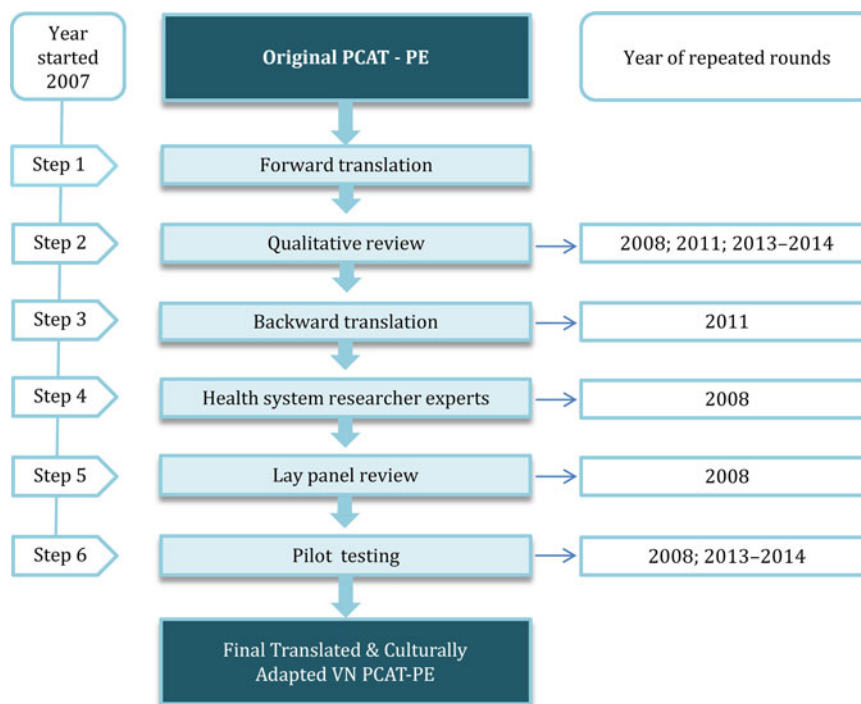


Figure 1. Process of translation and cultural adaptation for VN PCAT-PE

Vietnam Prime Minister, 2013; Prime Minister, 2016; Vietnam Government, 2016; Ministry of Health, 2016a; 2016b; 2017).

In 2015, the Primary Health Care Performance Initiative (PHCPI) was launched in 135 LMIC with the aim of catalyzing improvements in primary health care systems (PHCPI). The PHCPI conceptual framework conceived of a high-quality primary health care subdomain, which includes the classic primary health care functions such as first contact accessibility, comprehensiveness, and coordination as first laid out by Starfield and others in the world plus added a new function in person-centred care to distinguish between the continuity and person-centred components in Starfield's original domain of person-focused care over time. This high-quality primary care is one of the key subdomains for measurement of primary health care service delivery in health systems (Veillard *et al.*, 2017).

Worldwide, commitment for improvements in primary care is increasing. An example is the new UN Sustainable Goal for Health (Enhance health and promote well-being for all at all ages) (World Health Organization, 2016). Recently, the new Astana Declaration: 'From Alma-Ata towards universal health coverage and the Sustainable Development Goals' released by WHO and UNICEF in October 2018 reaffirmed the commitment of States and Governments to 'build a sustainable primary health care as well as to enhance capacity and infrastructure for primary care – the first contact with health services' (WHO and UNICEF, 2018). Consequently, there is also a growing need to measure various characteristics of primary care as we mentioned above and explore their impact on the quality of primary care. It would provide the best evidence for policy makers if these evaluations come from both the demand and supply sides of the health care sector. Comparatively more researchers have studied assessments of primary care quality from the consumer perspective than from the workforce perspective. A recent South African study pointed out that there is a significant gap between the

two, that is, between the clients' experience with primary care and what managers and providers think they are delivering (Bresick *et al.*, 2016).

There are various tools that have been used for measuring characteristics of primary care, for example, the CPCI (Components of Primary Care Instrument) (Flocke, 1997), the PCAS (Primary Care Assessment Survey) (Safran *et al.*, 1998), the EUROPEP questionnaire (European Task Force on Patient Evaluations of General Practice Care) (Grol *et al.*, 1999), the CAHPS (Consumer Assessment of Healthcare Providers and Systems) (Weidmer *et al.*, 2014), the P3C (Parents' Perception of Primary Care) (Seid *et al.*, 2001), and the PCAT (Primary Care Assessment Tool) (Shi *et al.*, 2001). The PCAT developed by Barbara Starfield at the Johns Hopkins Primary Care Policy Centre is one of the most widely studied and applied tools for measuring the quality of primary care across the globe. The PCAT family includes four versions: the consumer–client, facility, provider and health system versions. Through the PCAT, primary care quality is evaluated according to its core principles (first contact care, continuous longitudinal care, coordination, and comprehensiveness) and three other derivative domains (family-centered care, community-orientated care, and culturally competent care) (Malouin *et al.*, 2009). In contrast with the consumer version, which has been translated and validated in many languages and countries across the world (Rocha *et al.*, 2012; Yang *et al.*, 2013; Wang and Shi, 2014; Aoki *et al.*, 2016), little work has been done for the provider version questionnaires.

As the PCAT consumer version was validated and successfully used in Vietnam (Hoa *et al.*, 2018), we found that the PCAT provider version could render an adequate reflection on organizational resources and health care processes from a primary care provider perspective. As a first step, this study was conducted to adapt the PCAT provider tool for Vietnam and determine its internal consistency and validity.

Method

Translation and adaptation of the PCAT provider version for Vietnam

The PCAT provider version (PCAT PE) was translated and culturally adapted strictly according to the guidelines from the Johns Hopkins Primary Care Policy Center for use in international settings (Starfield and Shi, 2009) (illustrated by Figure 1). The first round was done in 2007 including all recommended steps as follows:

- **Step 1:** *Forward translation* performed by a bilingual physician and PhD student whose native tongue was Vietnamese with experience in translating documents between English and Vietnamese. This translator was familiar with use of the PCAT. To the best of the translator's ability, the translation preserved the intent rather than the literal meaning of the items.
- **Step 2:** *Qualitative review* of the translated survey was done by several doctors and other workers from Hanoi Medical School. This was performed in focus group discussion, where every translated item was reviewed to ensure its clarity, use of common language, and conceptual adequacy.
- **Step 3:** *Backward translation* was done by a Vietnamese woman whose native language is American English and who has lived long enough in the USA to know the language and routines of daily life. This translator was not familiar with the specific wording of the original PCAT terms. The instructions given to the back translator were identical to those given to the forward translator. The aim of this step was to identify items that required further study.
- **Step 4:** *Health systems research experts and the forward/backward translators jointly reviewed* the forward and backward translations in order to detect items that were not effectively translated, which were confusing or generated concerns. A few modifications were made until a consensus version was reached.
- **Step 5:** Thereafter a *lay panel of Vietnamese physicians reviewed* the translation, identified troublesome items, and proposed alternatives.
- **Step 6:** *Pilot testing* of the translated version: the questionnaire was administered to 108 physicians, that is, 41 physicians working at Commune health centers (CHCs) and 67 physicians working as academic trainers and administrators at the medical universities. Basic descriptive analyses were conducted to ensure adequate distribution of responses. The respondents were debriefed to identify any wording or comprehension problems.

To ensure the high quality of the questionnaires, certain steps were repeated in 2008 (steps 6, 2, 4, 5), 2011 (steps 2 and 3), 2013, and 2014 (steps 2 and 6) before it was declared fit to be used in a general population (Table 1). Below we describe those steps with the year wherein they were performed:

In 2008, *Pilot testing* was performed again for 28 physicians in the Specialist Level 1 in family medicine (CK1) training programme in Khanh Hoa. A dissemination workshop was then held in Vietnam with primary care physicians from several medical schools to review the pilot data and make additional revision suggestions based on responses from the previous pilot testing round (*Qualitative review*).

Following this review, a panel of primary care physicians from six medical schools in Vietnam and a team of researchers and physicians from Boston University participated in two rounds of revisions of PCAT questions, including appropriate contextual translation of concepts (*Lay panel review*).

Table 1. Different steps in the translation and adaptation process and in which rounds they were repeated

Step	Round 1, 2007	Round 2, 2008	Round 3, 2011	Round 4, 2013 and 2014
Step 1: Forward translation	x			
Step 2: Qualitative review	x	x	x	x
Step 3: Backward translation	x		x	
Step 4: Health system researcher experts	x	x with Dr. Barbara Starfield's comments		
Step 5: Lay panel review	x	x		
Step 6: Pilot testing	x	x		x

Dr. Barbara Starfield reviewed the revised version pre-translation and gave comments that were incorporated into a final version (*Health system researcher experts review*).

In 2011, a *Qualitative review* was repeated by the research team (Hue UMP and BU). Discussion on the cultural relevance of each item in the Vietnamese version and comparison between the current version and the original PCAT were made. This round also checked the matching between each equivalent item of the consumer and provider surveys. The research team produced a list of problematic items and proposed solutions. *Backward translation* was repeated after the qualitative review. The back translation was undertaken by a woman whose native language is American English and has lived in the USA long enough to know the language and routines of daily life. A new translated version of the questionnaires was produced.

In April 2013, an *additional pilot study* was conducted for 60 physicians working at CHCs in Thua Thien Hue Province. These physicians were divided into two groups: one group read the questionnaires and gave their opinions in terms of content and accuracy of evaluation for practice of physicians working in primary care in Vietnam. The other group was asked to fill in the entire questionnaire and give their feedback on challenges they faced.

From October 2013 to January 2014, a final revision was done by the research team from Hue UMP and BU (*qualitative review*). The team went through all the items and asked for advice from international experts with experience in PCAT validation. After this round, a *final translated version of the questionnaire* was produced with 9 scales and 123 items as compared to 9 scales and 124 items of the original PCAT provider. This is a self-completion questionnaire and takes approximately 30–45 min to fulfil. We maintained a four-point Likert scale response format (1 = definitely not; 2 = probably not; 3 = probably; and 4 = definitely) providing an additional 'don't know/don't remember' option in case participants could not choose one of those four options. Table 1 in Supplementary Material shows items changed in the final translated questionnaires from the original version.

Data collection

To evaluate the feasibility, internal consistency, and validity of the VN PCAT PE, a cross-sectional study was implemented. The

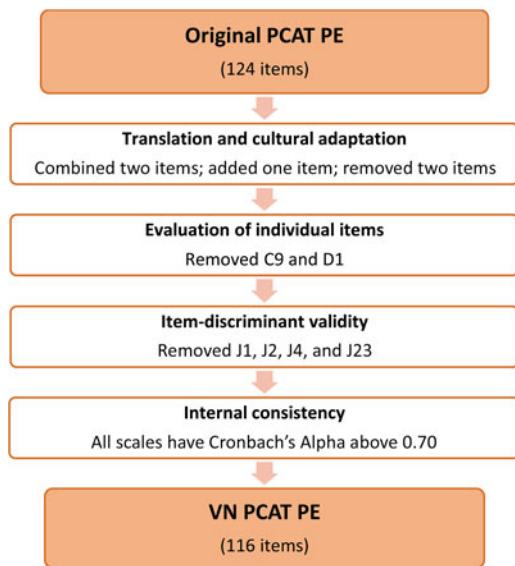


Figure 2. Validation process of VN PCAT-PE and its results

study was conducted in Thua Thien Hue province with all general doctors working at CHCs. There are 152 CHCs in the 9 districts of this province. Normally, one CHC is equipped with a general doctor as the head of the CHC. There are some exceptions: some CHCs have two general doctors, others only a traditional medicine doctor or an assistant traditional medicine doctor or an assistant doctor.

The questionnaires were delivered at the end of the monthly meeting of each district health center. In cases where one or more doctors were absent in that meeting, we tried to contact them and make an appointment at their CHC to have an interview at a later stage, where a trained interviewer assisted the doctor to complete the questionnaire. After three unsuccessful engagement efforts during the study period, we excluded these doctors from our research. Before the interview, participants received a full explanation of the study's content and purpose and signed a consent form if they agreed to participate. Participants received 5 USD as an appreciation gift for their time and contribution. Data collection was conducted from December 2017 to February 2018.

This study obtained ethical approval from the Scientific Committee of Hue University of Medicine and Pharmacy on 18 March 2014 and IRB review from Boston University (H-31432).

Data analysis

All collected questionnaires were cleaned and entered into EpiData. Data analysis was performed using SPSS software version 23.0.

Subsequent full validation involved several steps (Figure 2). First, individual items were evaluated on several criteria. Items with a high percentage ($\geq 20\%$) of item non-response or 'don't know/don't remember' responses, or items with a large floor or ceiling effect ($>80\%$ of respondents chose the lowest or highest rating) were removed. Next, the item-total correlation for the remaining items in each scale was calculated (item-total correlation before review). Items were removed if the item-total correlation was below 0.30 or if Cronbach's coefficient alpha for that scale improved substantially when the item was removed. Finally, item-discriminant validity was tested: for each item, the item-total

Table 2. Characteristics of study population-providers ($n = 150$)

Characteristics	<i>n</i>	%
Gender		
Female	52	34.7
Male	98	65.3
Age		
Mean 46.2, SD 7.85, Min 29, Max 60		
29–39 year old	33	22.0
40–50 year old	62	41.3
51–60 year old	55	36.7
Number of years in practice		
Mean 18.32, SD 9.3, Min 1, Max 35		
<10 years	35	23.3
10–19 years	24	16.0
20–29 years	83	55.3
30 years and more	8	5.3

Table 3. Characteristics of study population-health facilities ($n = 150$)

Characteristics	Mean (SD)	Min	Max
Number of consultations per day	28.72 (14.2)	5	95
Number of consultations per week	155.67 (86.5)	10	500
Percentage of consultations by age			
0–6 year old	19.95 (14.2)	0	100
7–16 year old	15.21 (8.5)	0	50
17–59 year old	34.89 (18.2)	0	85
60–80 year old	20.52 (11.2)	0	60
>80 year old	10.12 (8.1)	0	50
Percentage of patients with chronic problems (mental and physical)			
<20%	86	62.8	
From 20% to 40%	37	27.0	
From 41% to 60%	10	7.3	
>60%	4	2.9	
Payment resources of patients			
Government health insurance	Mean (SD)	Min	Max
	93.7 (12.3)	40	100
Out of pocket	3.7 (8.9)	0	50

correlation (item-total correlation after review) with the hypothesized scale should be substantially higher than the correlation with the other scales. In the second phase, Cronbach's coefficient alpha was used to examine how well all items measured the same construct (internal consistency). A value of 0.70 is commonly seen as a minimum.

The recoding progress and calculation for the sum mean score of domains and subdomains of primary care strictly complied with the guideline PCAT manual issued by Johns Hopkins University in 1998. For calculating the sum mean scores of domains and subdomains, a mean value was assigned to 'not sure/don't remember' answers as well as to missing values.

Table 4. Item mean (SD), percentage 'don't know, don't remember/missing,' floor/ceiling effect, item-total correlation before review, item-total correlation after review, and range of item correlations with other domains

Item code in the data set	Item	Item mean (SD)	% Missing/ % don't remember	% Floor/ ceiling effect	Item-total correlation before review	Item-total correlation after review	Range of item correlation with other domains
C. First contact – Access (nine items)							
C1	Is your office open on Saturday or Sunday?	3.15 (1.34)	0.0/2.0	14.7/41.3	0.73	0.75	0.08/0.26
C2	Is your office open on at least some weekday evenings until 8pm?	3.05 (1.49)	0.0/2.7	17.3/38.0	0.71	0.73	–0.04/0.14
C3	When your office is open, and patients get sick, would someone from your office see them that day?	3.54 (0.61)	0.0/0.0	0.7/59.3	0.45	0.45	0.07/0.27
C4	When your office is open, can patients get advice quickly over the phone when they think they need it?	2.98 (0.89)	0.0/0.0	4.7/32.7	0.62	0.62	0.16/0.30
C5	When your office is closed, can patients contact you or another doctor by phone when they get sick?	3.07 (0.98)	0.0/0.7	1.3/35.3	0.70	0.70	0.14/0.29
C6	If your office is closed on Saturday or Sunday and patients get sick, would someone from your office be able to see them that day?	3.03 (1.19)	0.7/1.3	9.3/34.0	0.75	0.75	0.13/0.24
C7	When your office is closed during the night and patients get sick, would someone from your office be able to see them that night?	3.14 (1.30)	0.7/2.0	11.3/38.0	0.66	0.66	0.07/0.23
C8	Can a patient easily get an appointment or make a visit for routine check-ups at your office?	3.31 (0.86)	0.0/0.7	0.7/42.0	0.55	0.56	0.20/0.35
C9	On average, do patients have to wait more than 30 min after arriving before they are examined by the doctor or nurse?	1.74 (0.96)	1.3/0.7	43.3/4.0	0.22	Not assessed	Not assessed
D. Ongoing care (13 items)							
D1	At your office, do patients see the same clinician each time they make a visit?	3.10 (0.70)	0.0/0.0	2.7/27.3	0.23	Not assessed	Not assessed
D2	Can you understand the questions that your patients ask you?	3.66 (0.57)	2.7/0.0	0.7/68.7	0.50	0.49	0.15/0.25
D3	Do you think your patients understand what you ask them or say to them?	3.49 (0.78)	0.0/0.7	0.7/52.0	0.55	0.57	0.08/0.30
D4	If patients have a question, can they call and talk to the doctor or nurse who knows them best?	3.29 (0.90)	0.7/0.7	0.7/43.3	0.53	0.52	0.18/0.36
D5	Do you think you give patients enough time to talk about their worries or problems?	3.24 (0.86)	0.0/0.7	0.0/37.3	0.54	0.54	0.21/0.35
D6	Do you think your patients feel comfortable telling you about their worries or problems?	3.33 (0.81)	0.0/0.7	0.0/40.0	0.53	0.53	0.17/0.44
D7	Do you think you know the patients in your practice 'very well' (for example, both health condition and personal life)?	2.99 (1.22)	0.0/2.7	0.0/18.0	0.60	0.59	0.02/0.41
D8	Do you know who lives with each of your patients?	2.96 (1.16)	0.0/2.0	2.0/20.7	0.60	0.61	0.04/0.33
D9	Do you think you understand what problems are most important to the patients you see?	3.42 (1.56)	0.7/6.0	0.0/23.3	0.66	0.66	0.09/0.47
D10	Do you think you know each patient's complete medical history?	2.97 (0.88)	0.0/0.7	1.3/22.0	0.70	0.70	0.05/0.38
D11	Do you think you know each patient's work or employment?	3.08 (1.13)	0.0/2.0	2.0/23.3	0.67	0.69	0.07/0.47
D12	Would you know if patients had trouble getting or paying for a prescribed medication?	3.05 (1.52)	0.7/4.0	7.3/25.3	0.66	0.66	0.20/0.48
D13	Do you know all the medications that your patients are taking?	3.13 (1.14)	0.0/2.0	2.0/28.7	0.61	0.61	0.16/0.37
E. Coordination (seven items)							
E2	Does your office share the results of the tests with patients (by phone call, mail, computer, or in person)?	2.90 (1.30)	0.7/2.7	5.3/17.3	0.45	0.45	0.02/0.33
E3	Do you think you know about all the visits that your patients make to specialists or special services?	2.69 (1.58)	0.0/4.7	6.0/9.3	0.61	0.61	0.26/0.45

(Continued)

Table 4. (Continued)

Item code in the data set	Item	Item mean (SD)	% Missing/ % don't know, don't remember	% Floor/ ceiling effect	Item-total correlation before review	Item-total correlation after review	Range of item correlation with other domains
E4	When patients need to be referred to a specialist, do you discuss with them the options available to get help for their problem?	3.12 (0.87)	0.0/0.7	1.3/29.3	0.69	0.69	0.22/0.52
E5	Does someone at your office help the patient make the appointment for the referral visit?	3.06 (1.79)	0.7/6.7	7.3/14.0	0.54	0.54	0.11/0.37
E6	When patients are referred, do you give them any written information to take to the specialist?	2.59 (1.50)	1.3/3.3	16.0/12.7	0.75	0.75	0.20/0.38
E7	Do you receive useful information about your referred patients back from the specialists or special services?	2.16 (1.59)	0.0/4.0	32.0/3.3	0.63	0.63	0.12/0.30
E8	Do you talk with your patients about their visit to specialists and the results of the visits to the specialist or special service?	2.81 (1.33)	0.7/2.7	8.0/16.0	0.66	0.66	0.10/0.43
F. Coordination (information system) (nine items)							
F1	Do all patients have a medical record at the facility?	2.55 (1.76)	1.3/4.7	24.7/16.7	0.60	0.60	0.06/0.16
F2	Do patients have a medical record or booklet that they keep with them and bring to visits?	3.14 (1.36)	1.3/3.3	4.0/24.7	0.47	0.47	0.07/0.26
F3	Would you allow patients to look at their medical records at your office if they wanted to?	2.19 (1.58)	1.3/3.3	36.0/8.7	0.35	0.35	0.03/0.32
F4	Are patient records available when you see patients? (either personal or facility records)	3.02 (1.07)	1.3/0.7	10.0/32.7	0.67	0.67	0.10/0.29
<i>Do you use the following methods to assure that indicated services are provided?</i>							
F5	Flow sheets in patients' charts for lab results	2.63 (1.59)	0.0/4.0	20.0/10.0	0.65	0.65	0.10/0.40
F6	Printed guidelines in patients' records	2.44 (1.63)	0.7/4.0	26.7/8.7	0.78	0.78	0.18/0.39
F7	Periodic medical record audits	2.59 (1.63)	0.0/4.0	24.7/12.0	0.83	0.82	0.25/0.46
F8	Problem lists in patients' records	2.54 (1.66)	0.0/4.0	26.7/13.3	0.82	0.82	0.15/0.44
F9	List of medications patients are taking	2.80 (1.41)	0.0/2.7	14.7/20.7	0.78	0.78	0.20/0.41
G. Comprehensiveness (services available)24 items							
If patients need any of the following services, would they be able to get them on-site at your office?							
G1	Nutrition counselling	3.19 (0.74)	0.0/0.0	0.0/38.0	0.57	0.57	0.32/0.44
G2	Immunizations	3.52 (0.56)	0.7/0.0	0.0/54.7	0.56	0.56	0.17/0.42
G3	Assistance with obtaining available social service programmes/benefits	2.59 (1.40)	0.0/2.7	13.3/16.0	0.49	0.49	0.21/0.37
G4	Dental check-ups and dental treatments	2.55 (1.01)	0.0/0.7	8.0/16.0	0.52	0.52	0.15/0.40
G5	Family planning or birth control services	3.42 (0.78)	0.7/0.7	0.7/44.7	0.64	0.64	0.25/0.48
G6	Substance or drug abuse counselling or treatment	3.27 (0.62)	0.0/0.0	0.0/36.7	0.68	0.68	0.20/0.50
G7	Counselling for behaviour or mental health problems	3.13 (0.85)	0.0/0.7	0.0/28.7	0.72	0.72	0.29/0.51
G8	Counselling and treating alcoholism	2.78 (1.00)	0.0/0.7	4.7/22.0	0.68	0.68	0.15/0.51
G9	Suturing for a minor laceration	3.27 (0.88)	0.0/0.7	1.3/40.0	0.65	0.65	0.18/0.40
G10	Counselling and testing for HIV/AIDS	3.23 (1.16)	0.0/2.0	4.7/34.0	0.63	0.63	0.22/0.40
G11	Tympanocentesis	2.09 (1.79)	0.0/4.7	48.0/8.7	0.59	0.59	0.09/0.40
G12	Vision screening	2.89 (0.95)	0.7/0.7	2.0/23.3	0.69	0.68	0.24/0.46
G13	Allergy shots	3.21 (0.67)	0.0/0.0	0.0/35.3	0.68	0.68	0.18/0.48
G14	Temporary fix for broken bone	2.97 (0.89)	0.0/0.0	4.7/33.3	0.72	0.72	0.28/0.43
G15	Gastric catheter insertion	1.89 (1.59)	0.7/3.3	54.0/7.3	0.49	0.49	0.13/0.39

(Continued)

Table 4. (Continued)

Item code in the data set	Item	Item mean (SD)	% Missing/ % don't know, don't remember	% Floor/ ceiling effect	Item-total correlation before review	Item-total correlation after review	Range of item correlation with other domains
G16	Pap smears, cervical cancer screening	2.15 (2.16)	0.0/8.0	54.7/3.3	0.35	0.35	0.06/0.29
G17	Rectal exam or colon cancer screening	2.48 (2.87)	0.7/15.3	69.3/3.3	0.37	0.37	0.04/0.34
G18	Smoking counselling	2.95 (0.81)	1.3/0.0	2.7/26.7	0.70	0.70	0.12/0.55
G19	Prenatal care	3.15 (0.92)	0.0/0.7	2.0/34.7	0.73	0.73	0.22/0.46
G20	Shoulder reduction	1.95 (1.41)	0.7/2.0	46.7/11.3	0.65	0.65	0.11/0.38
G21	Advice on end of life issues/palliative care	2.22 (1.78)	0.0/4.7	40.0/10.0	0.57	0.56	0.06/0.42
G22	Advice on preparing for changes consequent to aging	2.50 (1.15)	0.0/1.3	10.7/14.7	0.62	0.62	0.18/0.57
G23	Postpartum care of umbilical cord	3.02 (0.78)	0.0/0.0	2.0/29.3	0.70	0.70	0.25/0.46
G24	Monitoring of normal pregnancy	3.46 (0.79)	2.7/0.7	0.7/48.0	0.64	0.64	0.21/0.36
H. Comprehensiveness (services provided) 18 items							
If your office serves all ages, please answer all questions in this section (H1–H18). If your office serves only children, do not answer questions H3–H12. If your office serves only adults, do not answer questions H12–H17							
Are the following subjects discussed with patients?							
H1	Nutritional/non-nutritional foods or getting enough sleep	2.85 (0.93)	0.7/0.7	2.0/20.7	0.64	0.64	0.19/0.51
H2	Home safety, such as storing medicines safely	3.03 (1.15)	0.7/2.0	5.3/19.3	0.51	0.51	0.18/0.37
Questions H3–H12 apply to adults only (ages 18 and older)							
Are the following subjects discussed with patients?							
H3	Seat belt or helmet use	2.42 (1.25)	2.7/1.3	21.3/14.7	0.63	0.63	0.12/0.48
H4	Handling family conflicts	2.28 (1.49)	0.7/3.3	22.0/7.3	0.55	0.55	0.09/0.51
H5	Advice about appropriate exercise	2.79 (1.15)	0.0/2.0	3.3/12.0	0.63	0.63	0.11/0.50
H6	Cholesterol levels	2.48 (1.39)	0.7/2.7	16.0/10.7	0.55	0.54	0.11/0.39
H7	Medications being taken	3.05 (0.68)	0.0/0.0	0.7/25.3	0.61	0.61	0.13/0.49
H8	Exposure to harmful substances at home, work, or in their neighbourhood	2.58 (0.96)	0.0/0.7	3.3/16.7	0.74	0.74	0.14/0.58
Gun availability, storage, safety							
		Removed	Removed	Removed			
H9	Prevention of hot water burns	2.89 (1.05)	0.0/1.3	0.7/21.3	0.81	0.81	0.16/0.61
H10	Prevention of falls	2.78 (0.77)	0.0/0.0	0.7/20.0	0.80	0.80	0.07/0.63
H11	Prevention of osteoporosis or fragile bones in females	2.76 (0.93)	0.0/0.7	3.3/16.7	0.70	0.70	0.09/0.52
H12	Care for common menstrual or menopausal problems	2.69 (1.07)	0.0/1.3	3.3/15.3	0.73	0.73	0.13/0.55
Questions H13–H17 apply to children only (under age 18)							
Are the following subjects discussed with the child and parent/guardian?							
H13	Ways to handle problems with child's behaviour	2.39 (0.75)	0.0/0.0	6.7/9.3	0.77	0.77	0.22/0.64
H14	Changes in growth and behaviour that parents can expect at certain ages	2.51 (0.71)	0.0/0.0	4.0/8.7	0.71	0.71	0.17/0.63
H15	Safety issues for children under 6: (injury prevention, fire and electricity safety, food safety, drowning prevention)	2.70 (0.74)	0.0/0.0	2.0/14.7	0.76	0.76	0.18/0.66
H16	Safety issues for children between 6 and 12: (including using helmets and/or seatbelts)	2.33 (0.87)	0.0/0.0	15.3/11.3	0.74	0.74	0.11/0.66
H17	Safety issues for children over 12: safe sex, saying no to drugs, not drinking and driving	2.41 (0.99)	0.0/0.7	10.7/12.0	0.70	0.70	0.10/0.66
I. Family centeredness (14 items)							

(Continued)

Table 4. (Continued)

Item code in the data set	Item	Item mean (SD)	% Missing/ % don't know, don't remember	% Floor/ ceiling effect	Item-total correlation before review	Item-total correlation after review	Range of item correlation with other domains
I1	Does your office ask patients about their ideas and opinions when planning treatment and care for the patient or family member?	2.72 (0.73)	0.0/0.0	4.0/12.7	0.64	0.64	0.17/0.43
I2	Does your office ask about illnesses or problems that might run in the patients' families?	2.85(0.70)	0.0/0.0	0.7/17.3	0.71	0.71	0.15/0.59
I3	Is your office willing and able to meet with family members to discuss a health or family problem?	3.08 (0.67)	0.0/0.0	0.7/26.0	0.61	0.61	0.15/0.47
Are the following included as a routine part of your health assessment?							
	Use of familiograms, family APGAR	Removed	Removed	Removed			
I4	Discussion of family health risk factors, for example., genetics	2.67 (0.94)	0.0/0.7	3.3/15.3	0.67	0.67	0.13/0.56
I5	Discussion of family economic resources	2.35 (1.06)	0.0/1.3	8.7/8.0	0.78	0.78	0.09/0.63
I6	Discussion of social risk factors, for example, loss of employment	2.23 (1.20)	0.0/2.0	15.3/4.7	0.75	0.75	0.05/0.55
I7	Discussion of living conditions (eg, clean water, latrine/toilet, stress at work or home)	2.82 (0.72)	0.0/0.0	0.7/18.0	0.76	0.76	0.16/0.63
I8	Discussion of health status of other family members	2.58 (0.86)	0.7/0.7	2.0/8.7	0.77	0.77	0.14/0.60
I9	Discussion of parenting	2.40 (0.90)	0.7/0.7	5.3/8.7	0.78	0.78	0.05/0.68
I10	Assessment of signs of child abuse	2.24 (1.24)	0.0/2.0	17.3/7.3	0.78	0.77	0.01/0.58
I11	Assessment of indications of family in crisis	2.17 (1.33)	0.0/2.7	20.7/4.7	0.75	0.75	0.02/0.57
I12	Assessment of impact of patient's health on family functioning	2.41 (1.21)	0.0/2.0	10.7/8.0	0.78	0.78	0.10/0.67
I13	Assessment of development level	2.85 (0.90)	0.0/0.7	3.3/16.7	0.63	0.63	0.29/0.55
J. Community orientation (21 items)							
J1	Does your office make home visits?	2.27 (0.62)	0.0/0.0	2.0/7.3	0.44	0.44	0.00/0.48
J2	Do you think your office has adequate knowledge about the health problems of the communities you serve?	2.92 (1.42)	0.0/4.0	2.7/10.0	0.41	0.41	0.14/0.48
J3	Does your office get opinions and ideas from people that might help to provide better health care?	2.79 (0.90)	1.3/0.7	2.0/15.3	0.59	0.59	0.19/0.45
J4	Is your office able to change health care services or programmes in response to specific health problems in the communities?	2.70 (1.31)	0.0/2.7	8.0/11.3	0.45	0.45	0.10/0.45
Does your office use the following types of data to determine what programmes/services are needed by the communities you serve?							
J5	Mortality data (data on deaths)	3.33 (0.82)	0.0/0.7	0.7/40.7	0.47	0.47	0.12/0.42
J6	Public health communicable disease data (eg, STDs, TB)	3.27 (0.62)	0.0/0.0	0.7/35.3	0.53	0.53	0.20/0.43
J7	Community immunization rates	3.59 (0.68)	0.0/0.7	0.0/55.3	0.51	0.51	0.25/0.44
J8	Public health data on health or occupational hazards	3.03 (0.75)	0.0/0.0	1.3/28.0	0.59	0.59	0.08/0.48
J9	Clinical data from your practice	3.14 (1.02)	0.0/1.3	3.3/28.0	0.6	0.60	0.16/0.42
Does your office use the following methods to monitor and/or evaluate the effectiveness of services/programmes?							
J11	Surveys of your patients	2.63 (0.82)	0.0/0.0	5.3/16.7	0.73	0.73	0.14/0.41
J12	Community surveys	2.59 (0.80)	0.7/0.0	4.7/14.7	0.74	0.74	0.06/0.39
J13	Feedback from community organizations or community advisory boards	2.51 (0.95)	0.0/0.7	6.7/11.3	0.79	0.79	0.08/0.52
J14	Feedback from your practice staff	2.72 (0.76)	0.7/0.0	4.0/14.7	0.73	0.73	0.20/0.50
J15	Analysis of local data or vital statistics	2.95 (1.18)	0.0/2.0	4.7/20.0	0.76	0.76	0.05/0.51

(Continued)

Table 4. (Continued)

Item code in the data set	Item	Item mean (SD)	% Missing/ % don't know, don't remember	% Floor/ ceiling effect	Item-total correlation before review	Item-total correlation after review	Range of item correlation with other domains
J16	Systematic evaluations of your programmes and services provided	2.85 (0.95)	0.0/0.7	4.7/20.0	0.77	0.77	0.13/0.56
J17	Community/village health workers	3.05 (0.77)	0.0/0.0	4.0/28.0	0.63	0.63	0.16/0.40
J18	Gather feedback from patients about health staff performance	2.78 (0.79)	0.0/0.0	4.7/18.0	0.67	0.67	0.07/0.43
Does your office use any of the following activities to reach out to populations in the communities you serve?							
J20	Networking with state and local agencies involved with culturally diverse groups	2.75 (1.18)	0.0/1.3	12.7/19.3	0.64	0.64	0.18/0.47
J21	Linkages with religious organizations	2.29 (1.64)	0.0/4.0	30.7/8.7	0.67	0.67	0.12/0.41
J22	Involvement with neighbourhood groups/ community leaders	2.93 (1.51)	0.0/4.0	8.0/18.0	0.67	0.67	0.23/0.54
J23	Village health workers	3.26 (0.97)	0.7/1.3	2.7/32.0	0.38	0.38	0.15/0.42
K. Culturally competent (nine items)							
K1	Can someone in your office communicate well with patients who speak another language (such as patients from ethnic minority groups)?	2.74 (2.19)	0.0/8.0	40.7/20.0	0.58	0.58	0.07/0.34
K2	Do you take into account a family's special beliefs about health care or use of folk medicine, such as herbs/ homemade medicines?	2.99 (1.15)	0.0/2.0	4.7/18.0	0.55	0.55	0.22/0.39
K3	Do you take into account a family's request to use alternative treatment, such as homeopathy or acupuncture?	2.97 (0.83)	0.0/0.7	1.3/17.3	0.49	0.49	0.23/0.47
Does your office use any of the following methods to address the cultural diversity in your patient population?							
K4	Training of staff by outside instructors	2.27 (1.60)	0.0/4.0	27.3/6.0	0.68	0.68	0.15/0.48
K5	In-service programmes presented by staff	2.59 (1.65)	0.0/4.7	18.0/7.3	0.64	0.64	0.08/0.41
K6	Use of culturally sensitive (language, visual images, religious customs) materials/pamphlets	2.65 (1.11)	0.0/1.3	10.0/12.0	0.73	0.73	0.13/0.48
K7	Staff reflecting the cultural diversity of the population served	2.57 (1.38)	0.7/2.7	16.7/9.3	0.73	0.73	0.20/0.43
K8	Translators/interpreters	2.15 (2.20)	0.7/8.0	58.0/5.3	0.65	0.65	0.08/0.29
K9	Planning of services that reflect cultural diversity	2.48 (2.00)	1.3/6.7	36.7/7.3	0.73	0.73	0.18/0.45

Results

Characteristics of study population

Among the 157 doctors working at the 152 CHCs in Thua Thien Hue province, 150 participated in our study, one refused and six were absent because of maternal or sick leave or study leave. Tables 2 and 3 show the characteristics of the participants and their work place. There were about twice as many male doctors as female ones. More than half of these doctors have been practicing for 20 years or more. Although CHCs receive patients of all ages, the majority of them are adults and only a small percentage of them must pay out-of-pocket for their health visits.

Evaluation of the individual items

Table 4 shows the evaluation of the individual items. All items have a low non-response or 'don't know/ don't remember' response rate (<20%) and there were no floor or ceiling effects ($\leq 80\%$). One item from First contact access (C9) and one item from Ongoing care (D1) were removed because of an item-total correlation below

0.30. The Cronbach's alphas of the different scales were not improved substantially by removing any items. Four items of the Community orientation care scale were removed because their item-total correlation with that scale was lower than their correlations with the other scales. (see Table 2 - Supplementary Material).

Internal consistency of the different scales

Based on these parameters, 116 items of the VN PCAT-PE were determined to be appropriate for use with Vietnamese health care providers, to represent four core domains with six scales and three derivative domains with three scales (Table 5). All scales had a Cronbach's alpha above 0.80, except for the scale of Coordination, which still was above the minimum level of 0.70.

Discussion

Main findings

The outcome of this study is a translated and adapted PCAT provider version for Vietnam. The results showed that this

Table 5. Descriptive statistics of the domains scales

Domains	Mean (SD)	Cronbach's alpha	Number of items in the Vietnamese version (Total 116)	Number of items in the original version (Total 124)
First contact – Access	3.09 (0.60)	0.82	8	9
Ongoing Care	3.11 (0.44)	0.84	12	13
Coordination	2.53 (0.51)	0.73	7	7
Coordination (information system)	2.44 (0.64)	0.85	9	8
Comprehensiveness (services available)	2.70 (0.49)	0.93	24	25
Comprehensiveness (services provided)	2.58 (0.54)	0.93	17	18
Family Centeredness	2.50 (0.52)	0.93	13	14
Community Orientation	2.83 (0.51)	0.92	17	21
Culturally Competent	2.32 (0.57)	0.82	9	9

questionnaire is a valid tool to evaluate primary care quality in Vietnam from the provider viewpoint with high overall reliability and validity.

Interpretation of the results in relation to existing literature

This study rendered a PCAT ready for evaluation studies of the primary care system from the providers perspective in Vietnam. Previous PCAT validation studies focused mostly on the patients' (consumers') version. Now that the providers' version is available, a deeper and more comprehensive assessment of primary care quality becomes possible, adding a second key view on the demand–supply relationship of the primary care system of Vietnam.

The VN PCAT provider version preserves the integrity characteristics of the original PCAT provider version with 116 items belonging to nine scales. There were only slight changes in the number of items in most scales except for the Community Orientation scale, from which four items were removed because their item-total correlation with the hypothesized scale was lower than the correlations with another scale.

In a South African study, a new scale (about the primary health care team) was added at the end of the questionnaire (Bresick *et al.*, 2016). A Chinese study removed the scale of First contact access from their tool (Zou *et al.*, 2015). We succeeded in retaining most major characteristics of the original tool, however, preserving the possibility of future comparison with other primary care quality assessment studies using the original PCAT tool.

In the validation study of the consumer tool VN PCAT AE, the domains of First contact access and Comprehensive (service available) more items were removed (six and five items, respectively) (Hoa *et al.*, 2018). A probable reason why this was not the case in the provider study is that the providers had more knowledge about the items' content and knew better the services they were providing than the consumers. This may have reduced the ground effect and the number of 'don't know/ don't remembers' as well as the number of missing answers.


Due to the fact that Vietnam has a specific culture (mid-level country, Southeast-Asian) and a developing primary care context, the 2007 process alone was not sufficient. As the reader may have observed, it was indeed a lengthy process for the translation and cultural adaptation (from 2007 to 2014). In order to improve its quality, various important steps were repeated several times,

including four times for the qualitative review and three times for pilot testing. These added steps were necessary to develop a well-constructed and fully adapted tool for measuring the specific health care setting of Vietnam.

There are several potential biases of this study due to its limitation in design: the study population was restricted to general doctors working at CHCs. Although they are the major resource for providing primary care in Vietnam currently, there are other primary care doctors such as private doctors and doctors working in primary care outpatient clinics of some hospitals who should also be surveyed to assure the expected diversity and comprehensiveness of the tool.

Conclusions

We developed the VN PCAT PE as a valid and reliable tool to measure the quality of primary care from a provider perspective in Vietnam. Used together with the VN PCAT AE, primary care performance can be examined comprehensively. The gap in views between primary care users (demand side) and providers (supply side) in Vietnam can now be identified.

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Conflicts of Interest. None.

Ethical Standards. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional

guidelines (Hue University of Medicine and Pharmacy, Vietnam) and with the Helsinki Declaration of 1975, as revised in 2008.

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Erratum

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Key words:

primary care quality; assessment; provider perspectives

Development and validation of the Vietnamese Primary Care Assessment Tool – provider version – ERRATUM

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Incorrect author details were given in the above mentioned article. Nguyen Minha Tam, ORCID number 0000-0003-3153-4606 should have been Nguyen Minh Tam, ORCID number 0000-0002-8505-677X

Cambridge University Press apologises for this error, which has since been rectified.

References

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Supporting information Paper 2

Table 1. Changes in the final translated questionnaires from the original PCAT provider

Item code in the data set	Original question	Final translated question
	Type of practice (Check one.) 1. Solo practice 2. Single specialty group practice 3. Multi-specialty group practice 4. Public health clinic 5. Community health clinic or neighborhood health center 6. Hospital clinic 7. Rural health clinic 8. Other (Please specify.)	Where do you spend the majority of your time practicing? (Check one.) 1. A commune health center 2. A ward health center 3. An outpatient department of a district hospital 4. An outpatient department of a provincial hospital 5. An outpatient department of a central hospital 6. A private clinic of a doctor 7. A private clinic of a group of doctors 8. Others (Please specify.)
B. FIRST CONTACT		
C5	When your office is closed, do you have a phone number, patients can call when they get sick?	When your office is closed, can patients contact you or another doctor by phone when they get sick?
C8	Can a patient easily get an appointment for routine check-ups at your office?	Can a patient easily get an appointment or make a visit for routine check-ups at your office?
D. ONGOING CARE		
D7	Do you think you know the patients in your practice "very well"?	Do you think you know the patients in your practice "very well" (for example, both health condition and personal life)?
E. COORDINATION		
E1	<i>Not available</i>	Does your office perform at least some laboratory tests?
E2	Does your office phone or send patients the results of all lab tests?	Does your office share the results of the tests with patients (by phone call, mail, computer, or in person)?
E4	When patients need a referral, do you discuss different places the family might go to get help with their problem?	When patients need to be referred to a specialist, do you discuss with them the options available to get help for their problem?
E8	After the visit, do you talk with patients about the results of visits with the specialist or special service?	Do you talk with your patients about their visit to specialists or special service and the results of those visits?
F. COORDINATION (information system)		
F1	<i>Not available</i>	Do all patients have a medical record at the facility?
F2	Are patients expected to bring their medical records, such as immunizations or medical care they received in the past?	Do patients have a medical record or booklet (such as an y ba) that they keep with them and bring to visits?
F4	Are patient records available when you see patients? (either personal or facility records)	Are patient records available when you see patients?
F9	Medication lists in patients' records	List of medications patients are taking
G. COMPREHENSIVENESS (SERVICES AVAILABLE)		
G1	Nutrition counselling by a nutrition specialist	Nutrition counselling
G3	Eligibility screening for social service programs or benefits	Assistance with obtaining available social service programs/benefits

Item code in the data set	Original question	Final translated question
G4	Dental check-ups	Dental check-ups and Dental treatments
	Dental treatments	
G6	Tests for lead poisoning	Substance or drug abuse counselling or treatment
G14	Splinting for a sprained ankle	Temporarily fix a broken bone
G15	Wart removal	Gastric catheter insertion
G16	Pap smears	Pap smears, cervical cancer screening
G17	Rectal exam or sigmoidoscopy	Rectal exam or colon cancer screening
G20	Removal of an ingrown toenail	Shoulder reduction
G21	Advice on advance directives	Advice on End of life issues/Palliative Care
G23	Suggestions on nursing home care	Postpartum care of umbilical cord
G24	WIC services (supplemental milk and food program)	Monitoring of normal pregnancy
H. COMPREHENSIVENESS (SERVICES PROVIDED)		
H3	Seat belt use	Seat belt or helmet use
H15	Safety issues for children under 6: teaching them to cross the street safely, and using child safety seats in cars	Safety issues for children under 6: (injury prevention, fire and electricity safety, food safety, drowning prevention)
H16	Safety issues for children between 6 and 12: staying away from guns, and using seatbelts and bicycle helmets	Safety issues for children between 6 and 12: (including using helmets and/or seatbelts)
I. FAMILY-CENTEREDNESS		
I7	Discussion of living conditions, e.g., working refrigerator, heat	Discussion of living conditions, (for example: clean water, latrine/toilet, stress at work or home)
J. COMMUNITY ORIENTATION		
J17	Community health workers	Community/village health workers
J18	Have a consumer on the board of directors or advisory committee	Gather feedback from patients about health staff performance
J21	Linkages with religious organizations/ services	Linkages with religious organizations
J23	Outreach workers	Village health workers
K. CULTURALLY COMPETENT		
K1	Can your office communicate with people who do not speak English well?	Can someone in your office communicate well with patients who speak another language (such as patients from ethnic minority groups)?
K2	If needed, do you take into account a family's special beliefs about health care or use of folk medicine, such as herbs/homemade medicines?	Do you take into account a family's special beliefs about health care or use of folk medicine, such as herbs/homemade medicines?
K3	If needed, do you take into account a family's request to use alternative treatment, such as homeopathy or acupuncture?	Do you take into account a family's request to use alternative treatment, such as homeopathy or acupuncture?

Table 2. Item correlation with domain scores after review (item convergent validity and item discriminant validity)

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	Family Connectedness	Community Orientation	Culturally Competent
	B. FIRST CONTACT (9 items)									
C1	Is your office open on Saturday or Sunday?	0.75	0.08	0.19	0.21	0.26	0.16	0.10	0.14	0.16
C2	Is your office open on at least some weekday evenings until 8 PM?	0.73	0.00	0.10	0.09	0.09	-0.04	-0.04	0.04	0.14
C3	When your office is open, and patients get sick, would someone from your office see them that day?	0.45	0.20	0.17	0.27	0.25	0.16	0.07	0.11	0.19
C4	When the office is open, can patients get advice quickly over the phone when they think they need it?	0.62	0.27	0.21	0.19	0.30	0.21	0.16	0.19	0.20
C5	When your office is closed, can patients contact you or another doctor by phone when they get sick?	0.70	0.25	0.16	0.14	0.29	0.21	0.20	0.21	0.21
C6	If your office is closed on Saturday or Sunday and patients get sick, would someone from your office be able to see them that day?	0.75	0.15	0.23	0.18	0.24	0.13	0.13	0.16	0.21
C7	When your office is closed during the night and patients get sick, would someone from your office be able to see them that night?	0.66	0.18	0.17	0.20	0.17	0.07	0.11	0.17	0.23
C8	Can a patient easily get an appointment or make a visit for routine check-ups at your office?	0.56	0.34	0.30	0.20	0.35	0.26	0.25	0.27	0.21
C9	On average, do patients have to wait more than 30 minutes after arriving before they are examined by the doctor or nurse? *									
	D. ONGOING CARE (13 items)									
D1	At your office, do patients see the same clinician each time they make a visit? *									
D2	Can you understand the questions that your patients ask you?	0.16	0.49	0.15	0.20	0.23	0.16	0.20	0.19	0.25
D3	Do you think your patients understand what you ask them or say to them?	0.08	0.57	0.14	0.21	0.30	0.27	0.20	0.22	0.16
D4	If patients have a question, can they call and talk to the doctor or nurse who knows them best?	0.36	0.52	0.31	0.19	0.23	0.18	0.29	0.18	0.27

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	FamilyC entered ness	Community Orientation	Culturally Competent
D5	Do you think you give patients enough time to talk about their worries or problems?	0.29	0.54	0.35	0.29	0.33	0.31	0.34	0.30	0.21
D6	Do you think your patients feel comfortable telling you about their worries or problems?	0.17	0.53	0.30	0.27	0.34	0.39	0.44	0.22	0.21
D7	Do you think you know the patients in your practice "very well" (for example, both health condition and personal life)?	0.02	0.59	0.36	0.16	0.31	0.31	0.41	0.26	0.24
D8	Do you know who lives with each of your patients?	0.15	0.61	0.32	0.04	0.31	0.29	0.33	0.31	0.19
D9	Do you think you understand what problems are most important to the patients you see?	0.09	0.66	0.36	0.25	0.47	0.38	0.38	0.39	0.37
D10	Do you think you know each patient's complete medical history?	0.05	0.70	0.35	0.31	0.29	0.38	0.30	0.34	0.24
D11	Do you think you know each patient's work or employment?	0.07	0.69	0.39	0.29	0.40	0.43	0.33	0.47	0.30
D12	Would you know if patients had trouble getting or paying for a prescribed medication?	0.22	0.66	0.48	0.31	0.34	0.30	0.33	0.31	0.20
D13	Do you know all the medications that your patients are taking?	0.16	0.61	0.37	0.29	0.37	0.36	0.33	0.33	0.16
	E. COORDINATION (7 items)									
E2	Does your office share the results of the tests with patients (by phone call, mail, computer, or in person)?	0.16	0.27	0.45	0.14	0.33	0.11	0.08	0.06	0.02
E3	Do you think you know about all the visits that your patients make to specialists or special services?	0.26	0.41	0.61	0.45	0.40	0.44	0.43	0.38	0.38
E4	When patients need to be referred to a specialist, do you discuss with them the options available to get help for their problem?	0.22	0.52	0.69	0.37	0.48	0.47	0.43	0.36	0.29
E5	Does someone at your office help the patient make the appointment for the referral visit?	0.11	0.21	0.54	0.19	0.30	0.37	0.37	0.31	0.30
E6	When patients are referred, do you give them any written information to take to the specialist?	0.26	0.32	0.75	0.35	0.38	0.33	0.33	0.34	0.20

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	Family entered	Community Orientation	Culturally Competent
E7	Do you receive useful information about your referred patients back from the specialists or special services?	0.12	0.21	0.63	0.20	0.14	0.18	0.30	0.21	0.24
E8	Do you talk with your patients about their visit to specialists and the results of the visits to the specialist or special service?	0.10	0.43	0.66	0.31	0.26	0.33	0.36	0.29	0.30
	F. COORDINATION (information system) (9 items)									
F1	Do all patients have a medical record at the facility?	0.11	0.16	0.08	0.60	0.07	0.12	0.10	0.14	0.06
F2	Do patients have a medical record or booklet (such as an y ba) that they keep with them and bring to visits?	0.20	0.18	0.26	0.47	0.15	0.16	0.07	0.16	0.09
F3	Would you allow patients to look at their medical records at your office if they wanted to?	0.07	0.20	0.32	0.35	0.16	0.13	0.14	0.10	0.03
F4	Are patient records available when you see patients? (either personal or facility records)	0.26	0.20	0.29	0.67	0.16	0.23	0.14	0.27	0.10
	Do you use the following methods to assure that indicated services are provided?									
F5	Flow sheets in patients' charts for lab results	0.10	0.26	0.40	0.65	0.29	0.37	0.37	0.30	0.29
F6	Printed guidelines in patients' records	0.18	0.24	0.29	0.78	0.33	0.39	0.28	0.37	0.22
F7	Periodic review of patient medical records	0.25	0.34	0.40	0.82	0.43	0.45	0.42	0.46	0.33
F8	Problem lists in patients' records	0.15	0.36	0.39	0.82	0.39	0.44	0.35	0.43	0.28
F9	List of medications patients are taking	0.26	0.33	0.41	0.78	0.38	0.34	0.29	0.27	0.20
	G. COMPREHENSIVENESS (SERVICES AVAILABLE) 24 items									
	If patients need any of the following services, would they be able to get them on-site at your office?									
G1	Nutrition counselling	0.37	0.42	0.37	0.35	0.57	0.44	0.32	0.34	0.32
G2	Immunizations	0.34	0.42	0.28	0.32	0.56	0.28	0.17	0.33	0.23
G3	Assistance with obtaining available social service programs/benefits	0.23	0.37	0.34	0.21	0.49	0.37	0.37	0.32	0.28

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	FamilyC entered ness	Community Orientation	Culturally Competent
G4	Dental check-ups and Dental treatments	0.15	0.30	0.36	0.22	0.52	0.40	0.33	0.26	0.25
G5	Family planning or birth control services	0.25	0.48	0.26	0.28	0.64	0.43	0.29	0.43	0.27
G6	Substance or drug abuse counselling or treatment	0.24	0.46	0.34	0.33	0.68	0.50	0.29	0.38	0.20
G7	Counselling for behaviour or mental health problems	0.32	0.40	0.37	0.29	0.72	0.51	0.37	0.43	0.32
G8	Counselling and treating alcoholism	0.15	0.31	0.37	0.33	0.68	0.51	0.38	0.38	0.35
G9	Suturing for a minor laceration	0.34	0.40	0.35	0.18	0.64	0.32	0.25	0.32	0.19
G10	Counselling and testing for HIV/AIDS	0.23	0.31	0.31	0.27	0.63	0.40	0.26	0.34	0.22
G11	Remove fluid from behind the eardrum to check for infection	0.18	0.23	0.25	0.09	0.59	0.29	0.33	0.40	0.31
G12	Vision screening	0.24	0.29	0.35	0.24	0.68	0.46	0.35	0.31	0.29
G13	Allergy shots	0.18	0.46	0.31	0.24	0.68	0.48	0.37	0.36	0.21
G14	Temporarily fix a broken bone	0.28	0.36	0.36	0.30	0.72	0.42	0.35	0.43	0.29
G15	Gastric catheter insertion	0.15	0.13	0.27	0.22	0.49	0.33	0.39	0.34	0.34
G16	Pap smears, cervical cancer screening	0.06	0.08	0.20	0.19	0.35	0.19	0.15	0.25	0.29
G17	Colon cancer screening	0.04	0.14	0.32	0.26	0.37	0.27	0.30	0.32	0.34
G18	Smoking counselling	0.12	0.42	0.33	0.24	0.70	0.55	0.43	0.46	0.38
G19	Prenatal care	0.31	0.42	0.42	0.22	0.73	0.46	0.35	0.32	0.32
G20	Shoulder reduction	0.11	0.18	0.32	0.15	0.65	0.38	0.29	0.28	0.28
G21	Advice on End of life issues/Palliative Care	0.06	0.21	0.28	0.13	0.56	0.39	0.42	0.35	0.30
G22	Advice on preparing for changes consequent to aging	0.18	0.35	0.37	0.38	0.62	0.57	0.51	0.40	0.35
G23	Postpartum care of umbilical cord	0.29	0.39	0.32	0.25	0.70	0.46	0.41	0.32	0.31
G24	Monitoring of normal pregnancy	0.35	0.35	0.29	0.28	0.64	0.36	0.25	0.35	0.21
	H. COMPREHENSIVENESS (SERVICES PROVIDED) 17 items									
	If your office serves all ages, please answer all questions in this section (H1 – H17).									
	If your office serves only children, do not answer questions H3 – H12.									
	If your office serves only adults, do not answer questions H13 – H17.									

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	Family entered	Community Orientation	Culturally Competent
	Are the following subjects discussed with patients?									
H1	Nutritional/non-nutritional foods or getting enough sleep	0.19	0.45	0.36	0.31	0.48	0.64	0.51	0.48	0.32
H2	Home safety, such as storing medicines safely	0.18	0.35	0.26	0.34	0.34	0.51	0.35	0.37	0.19
	Questions H3 – H12 apply to adults only (ages 18 and older).									
	Are the following subjects discussed with patients?									
H3	Seat belt or helmet use	0.12	0.30	0.20	0.22	0.33	0.63	0.48	0.39	0.42
H4	Handling family conflicts	0.09	0.32	0.38	0.25	0.33	0.55	0.51	0.41	0.38
H5	Advice about appropriate exercise	0.11	0.24	0.29	0.21	0.37	0.63	0.50	0.36	0.34
H6	Cholesterol levels	0.11	0.21	0.39	0.29	0.36	0.54	0.33	0.23	0.20
H7	Medications being taken	0.13	0.34	0.31	0.19	0.44	0.61	0.49	0.36	0.33
H8	Exposure to harmful substances at home, work, or in their neighbourhood	0.14	0.49	0.34	0.32	0.58	0.74	0.54	0.54	0.38
	Gun availability, storage, safety*					Not assessed				
H9	Prevention of hot water burns	0.16	0.43	0.38	0.30	0.61	0.81	0.61	0.59	0.49
H10	Prevention of falls	0.07	0.40	0.36	0.31	0.63	0.80	0.60	0.56	0.47
H11	Prevention of osteoporosis or fragile bones in females	0.09	0.26	0.42	0.37	0.52	0.70	0.51	0.46	0.35
H12	Care for common menstrual or menopausal problems	0.13	0.30	0.46	0.41	0.55	0.73	0.53	0.41	0.40
	Questions H13– H17 apply to children only (under age 18)									
	Are the following subjects discussed with the child and parent/guardian?									
H13	Ways to handle problems with child's behaviour	0.22	0.35	0.44	0.37	0.52	0.77	0.64	0.55	0.42
H14	Changes in growth and behaviour that parents can expect at certain ages	0.17	0.35	0.39	0.34	0.42	0.71	0.63	0.56	0.42
H15	Safety issues for children under 6: (injury prevention, fire and electricity safety, food safety, drowning prevention)	0.18	0.42	0.37	0.22	0.48	0.76	0.66	0.59	0.44

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	FamilyC entered ness	Community Orientation	Culturally Competent
H16	Safety issues for children between 6 and 12: (including using helmets and/or seatbelts)	0.11	0.35	0.32	0.27	0.39	0.74	0.66	0.46	0.44
H17	Safety issues for children over 12: safe sex, saying no to drugs, not drinking and driving	0.10	0.39	0.32	0.38	0.39	0.70	0.66	0.40	0.38
	I. FAMILY-CENTEREDNESS 13 items									
I1	Does your office ask patients about their ideas and opinions when planning treatment and care for the patient or family member?	0.17	0.36	0.41	0.24	0.24	0.43	0.64	0.41	0.39
I2	Does your office ask about illnesses or problems that might run in the patients' families?	0.15	0.43	0.38	0.33	0.47	0.59	0.71	0.48	0.38
I3	Is your office willing and able to meet with family members to discuss a health or family problem?	0.28	0.47	0.40	0.15	0.36	0.46	0.61	0.43	0.33
	Are the following included as a routine part of your health assessment?									
	Use of familiograms, family APGAR*									
I4	Discussion of family health risk factors, e.g., genetics	0.13	0.46	0.39	0.28	0.36	0.54	0.67	0.56	0.38
I5	Discussion of family economic resources	0.09	0.40	0.38	0.23	0.37	0.63	0.77	0.50	0.46
I6	Discussion of social risk factors, e.g., loss of employment	0.05	0.32	0.44	0.27	0.31	0.55	0.75	0.44	0.52
I7	Discussion of living conditions, (for example: clean water, latrine/toilet, stress at work or home)	0.16	0.42	0.33	0.27	0.51	0.63	0.76	0.59	0.43
I8	Discussion of health status of other family members	0.14	0.39	0.38	0.26	0.43	0.60	0.77	0.58	0.39
I9	Discussion of parenting	0.05	0.37	0.38	0.32	0.45	0.68	0.78	0.52	0.48
I10	Assessment of signs of child abuse	0.01	0.30	0.36	0.25	0.38	0.58	0.77	0.54	0.46
I11	Assessment of indications of family in crisis	0.02	0.27	0.35	0.24	0.39	0.57	0.75	0.46	0.42
I12	Assessment of impact of patient's health on family functioning	0.10	0.38	0.42	0.35	0.41	0.67	0.78	0.56	0.41
I13	Assessment of development level	0.29	0.38	0.40	0.37	0.50	0.54	0.63	0.55	0.51

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	Family centeredness	Community Orientation	Culturally Competent
	J. COMMUNITY ORIENTATION (21 items)									
J1	Does your office make home visits? *	0.05	0.30	0.23	0.00	0.30	0.40	0.48	0.44	0.28
J2	Do you think your office has adequate knowledge about the health problems of the communities you serve? *	0.18	0.24	0.31	0.14	0.20	0.30	0.48	0.41	0.36
J3	Does your office get opinions and ideas from people that might help to provide better health care?	0.19	0.29	0.26	0.28	0.33	0.36	0.43	0.59	0.45
J4	Is your office able to change health care services or programs in response to specific health problems in the communities? *	0.10	0.16	0.26	0.24	0.32	0.40	0.45	0.45	0.23
	Does your office use the following types of data to determine what programs/services are needed by the communities you serve?									
J5	Mortality data (data on deaths)	0.12	0.39	0.21	0.22	0.38	0.42	0.39	0.47	0.27
J6	Public health communicable disease data (e.g., STDs, TB)	0.20	0.43	0.22	0.25	0.39	0.42	0.35	0.53	0.33
J7	Community immunization rates	0.25	0.44	0.27	0.35	0.43	0.34	0.37	0.51	0.29
J8	Public health data on health or occupational hazards	0.08	0.37	0.26	0.26	0.48	0.42	0.42	0.59	0.31
J9	Clinical data from your practice	0.16	0.29	0.28	0.36	0.32	0.42	0.39	0.60	0.34
	Does your office use the following methods to monitor and/or evaluate the effectiveness of services/programs?									
J11	Surveys of your patients	0.14	0.26	0.30	0.31	0.33	0.39	0.41	0.73	0.32
J12	Community surveys	0.06	0.23	0.28	0.23	0.32	0.39	0.37	0.74	0.34
J13	Feedback from community organizations or community advisory boards	0.08	0.35	0.33	0.31	0.37	0.46	0.52	0.79	0.43
J14	Feedback from your practice staff	0.20	0.34	0.34	0.34	0.37	0.47	0.50	0.73	0.38
J15	Analysis of local data or vital statistics	0.05	0.34	0.33	0.30	0.29	0.46	0.51	0.76	0.42
J16	Systematic evaluations of your programs and services provided	0.13	0.39	0.44	0.34	0.42	0.53	0.56	0.77	0.42
J17	Community/village health workers	0.23	0.31	0.16	0.22	0.28	0.34	0.40	0.63	0.33
J18	Gather feedback from patients about health staff performance	0.07	0.30	0.26	0.24	0.28	0.40	0.43	0.67	0.36

Item code in the data set	Domain	First Contact	Ongoing Care	Coordination	Coordination (information system)	Comprehensiveness (Services available)	Comprehensiveness (Services provided)	Family entered	Community Orientation	Culturally Competent
	Does your office use any of the following activities to reach out to populations in the communities you serve?									
J20	Networking with state and local agencies involved with culturally diverse groups	0.18	0.20	0.22	0.27	0.33	0.39	0.47	0.64	0.46
J21	Linkages with religious organizations	0.12	0.24	0.34	0.24	0.34	0.38	0.41	0.67	0.37
J22	Involvement with neighbourhood groups/community leaders	0.24	0.23	0.29	0.35	0.45	0.49	0.54	0.67	0.46
J23	Village health workers*	0.29	0.29	0.15	0.19	0.42	0.29	0.33	0.38	0.27
	K. CULTURALLY COMPETENT (9 items)									
K1	Can someone in your office communicate well with patients who speak another language (such as patients from ethnic minority groups)?	0.19	0.34	0.07	0.12	0.19	0.21	0.24	0.25	0.58
K2	Do you take into account a family's special beliefs about health care or use of folk medicine, such as herbs/homemade medicines?	0.28	0.25	0.29	0.22	0.39	0.35	0.35	0.34	0.55
K3	Do you take into account a family's request to use alternative treatment, such as homeopathy or acupuncture?	0.33	0.42	0.45	0.23	0.46	0.43	0.47	0.38	0.49
	Does your office use any of the following methods to address the cultural diversity in your patient population?									
K4	Training of staff by outside instructors	0.15	0.19	0.35	0.17	0.26	0.37	0.43	0.48	0.68
K5	In-service programs presented by staff	0.11	0.08	0.29	0.23	0.31	0.38	0.39	0.41	0.64
K6	Use of culturally-sensitive (language, visual images, religious customs) materials/pamphlets	0.13	0.22	0.26	0.17	0.30	0.42	0.46	0.48	0.73
K7	Staff reflecting the cultural diversity of the population served	0.24	0.30	0.22	0.20	0.28	0.43	0.42	0.41	0.73
K8	Translators/interpreters	0.10	0.18	0.11	0.08	0.16	0.25	0.29	0.21	0.65
K9	Planning of services that reflect cultural diversity	0.18	0.20	0.21	0.18	0.30	0.41	0.45	0.45	0.73

*: removed from the final questionnaires

PHASE 2

2.1. Primary care quality in Vietnam from the user's views

Paper 3: Patient experiences of primary care quality amongst different types of health care facilities in central Vietnam

Hoa, N. T., Tam, N. M., Derese, A., Markuns, J. F., & Peersman, W. (2019). Patient experiences of primary care quality amongst different types of health care facilities in central Vietnam. *BMC health services research*, *19*(1), 275. <https://doi.org/10.1186/s12913-019-4089-y>

In this paper, we explored the user's perspectives toward the primary care performance in Central Vietnam in different health care settings. The second research question of this thesis is achieved by this paper.

RESEARCH ARTICLE

Open Access



Patient experiences of primary care quality amongst different types of health care facilities in central Vietnam

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Abstract

Background: Patient experience with primary health care services can vary markedly between different types of health care facilities, even within the same country setting. Given known benefits of high quality primary health care, the performance of these facilities may significantly impact population health. The aim of this study was to compare the quality of primary care in different types of health facilities as experienced by Vietnamese consumers.

Methods: 1662 people who utilized primary health care services at least once over the past two years in various types of facilities in central Vietnam were surveyed in a cross-sectional study using the Vietnamese version of the Primary Care Assessment Tool (VN PCAT-AE) to assess overall primary care quality as well as several different domains of high quality primary care services.

Results: Commune health centers were associated with the highest overall primary care quality (PCAT expanded score 21.07, $p < 0.001$) as well as high scores in nearly all individual domains of primary care quality experienced by consumers compared with other types of facilities. Conversely, private facilities such as private clinics and pharmacies were rated lowest overall (PCAT expanded score 18.45, $p < 0.05$ and 16.90, $p < 0.001$ respectively). District hospitals and other government hospitals (PCAT expanded score 20.10 and 19.72 respectively) were reported as the best quality in comprehensiveness of available services ($p < 0.001$). Polyclinics performed quite well in comprehensiveness of services available (3.11) and first contact-access (2.79) but less so in other domains, especially in cultural competency (1.87).

Conclusions: The high quality of primary care services experienced by consumers in commune health centers compared with other facilities gives Vietnam ample reason to promote greater use of these community-based primary care facilities. Populations may benefit most from building and strengthening grassroots networks of such community-based health centers as an effective solution for overcrowding at hospitals while simultaneously providing better overall health outcomes.

Keywords: Primary care, Patient experiences, Health care settings, PCAT, Vietnam

Background

Primary care has been shown to result in better health outcomes for populations, and is a cornerstone for the types of improvements sought in the new Sustainable Development Goal for Health [1]. A strong primary care system is essential to providing effective and efficient health

care in all countries and has been correlated to lower aggregate and gender-specific mortality rates, overall levels of premature death, and premature deaths from a variety of important preventable or treatable conditions including asthma, heart and cerebrovascular diseases, and pneumonia [2, 3]. The structure of local health care systems and their associated facilities, however, can have a substantial impact on the accessibility, acceptability, effectiveness and quality of primary care. In the early work by quality advocates, Donabedian also laid out that given the proper settings and instrumentalities, good medical care will follow

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but the relationship between structure and outcome, is often not well established [4].

Consensus is now building around a comprehensive framework that highlights the important role of facilities in primary health care systems as well as the need to assess these based on specific elements associated with high quality primary care service delivery [5]. The quality of patient experiences with primary care can vary markedly between different health care facilities, even within the same country setting. Studies in the U.S., Hong Kong and China have all shown some impact of different types of facilities on the quality of primary care provided [6–13]. Although evidence from low and middle income countries shows that an integrated approach to primary care can improve health outcomes, less is known about the quality of primary care provided by different types of facilities in these lower income countries [14].

Vietnam has a tiered health system, with a variety of different health facilities where patients can directly seek primary care services. At the grassroots level, there is a widespread public system of more than 11,000 commune health centers (CHCs), one in every commune. The commune health center (CHC) has the capacity to deliver preventive, acute and chronic care, and treatment services for individuals as well as for families in each commune [15]. Most CHCs are staffed with a general doctor and ancillary staff, and typical services include immunization, epidemic prevention, first aid, maternal and child health care, and treatment of common health problems such as chronic and infectious diseases. In addition to CHCs, there are district health center-operated outpatient polyclinics, staffed by physicians from a variety of specialties which offer diagnostic and treatment services for a range of health problems. A polyclinic provides health care for a number of nearby communes in a region, supplementing local CHC activities. As a next step up in the tiered public health care system, district health centers (DHC) in every district provide more complex curative services and typically include an outpatient department for diagnostic and therapeutic services. They also receive patients who are referred by CHCs in the local region, as district health centers offer more diagnostic services as well as an inpatient departments, with disciplines such as internal medicine, paediatrics, surgery, obstetrics and gynaecology.

Additional hospital levels beyond the districts include a provincial hospital in each province and central hospitals in each region, again typically offering a variety of more complex inpatient and outpatient services. However, in the joint annual health review JAHR 2015 of the Ministry of Health [16], data showed that 54–65% of patients coming to central hospitals have diseases and health conditions that are diagnosable and treatable at the lower levels. This is one challenge faced by policy-makers in Vietnam, leading to the

overcrowding of upper level public hospitals because many patients bypass the grassroots outpatient facilities, and even the district health centers, as patients expect a better quality of care in these more advanced hospitals [17]. Similar to hospitals, patients may pursue private sector services seeking what they perceive as higher quality care, such as in the private clinics of prominent clinicians. Patients also frequent a variety of other health facilities when seeking primary care services, such as basic advice and accompanying therapeutics from the local pharmacy.

While Vietnam is working towards universal health coverage, it has yet to be achieved. Coverage rates for health insurance in Vietnam have increased since its introduction in 1992 to 71% in 2014 and nearly 88% by 2018 [18]. There are two types of government-run health insurance schemes with all individuals categorized into either compulsory or voluntary health insurance. Compulsory insurance is offered to contracted employed workers, elderly, children under age six, students and the poor with the remainder eligible for voluntary insurance. Because of the limited coverage amounts subsidized by the government as well as the voluntary health insurance scheme, however, some patients do still experience financial barriers to access. Full coverage for services of insured patients is available if patients initially seek health care at a grassroots facility (i.e. CHC, polyclinic), however a payment is required if they present to a district or provincial hospital without a referral letter from the previous level health facility.

Like many other countries in the world searching for an ideal model of primary care delivery, Vietnam has been conducting a national program for reinforcement and quality improvement of primary care focusing on the grassroots level using a variety of public and private services [19–21]. Little is known, however, about the difference in primary care quality in different health care settings in Vietnam. We conducted this study with the hypothesis that the quality of primary health care as experienced by consumers would differ between the various types of facilities. Our hypothesis was that those facilities whose primary function was to deliver grassroots health care and act as a first point of entry to the health system, such as community-based government run health centers, would be rated more highly by consumers on primary care quality compared with those facilities with other primary functions such as hospitals focused on secondary and tertiary care, private sector pharmacies focused on market-based provision of medications, or private clinics may have a focus on the specific medical area of a particular specialist.

Methods

Aim

The aim of this study was to compare the quality of primary care in different types of health facilities as experienced by Vietnamese consumers.

Study population and design

This cross-sectional study was conducted in the central region of Vietnam using a multistage and purposive sampling approach (illustrated in Fig. 1). Three provinces were chosen purposively to capture the diverse characteristics of central Vietnam: Khanh Hoa, Thua Thien Hue and Quang Tri. To obtain a sample representing the country's diversity, we purposively selected two to four districts from each province. Within these constraints, we chose at least one lowland district, one mountainous district and one urban district when possible. In Thua Thien Hue, the study was carried out in 24 communes of four districts (six communes per district); in Quang Tri, 14 communes in three districts (one district with six communes and two other districts with four communes); and in Khanh Hoa, 18 communes in two districts. In total, 56 communes in 9 districts were selected. Additional file 1 shows the locations map of these districts and communes.

From each commune, 15 households were selected from the commune household list. On the list, we started with the first household of the commune and then selected every 10th household (household number 11, 21, 31...) until the intended sample size was reached. Each selected household was visited, and the head of household surveyed, as well as one other willing adult (≥18 years old) if available during this home visit. Data was collected from January through August of 2014 and questionnaires were administered through in-person interviews. Only participants who had utilized health care services at a health facility at least once within the two years prior to recruitment were surveyed.

Before the interview, participants received a full explanation of the study's content and purpose and signed a consent form if they agreed to participate. Refusals were rare and so a response rate was not specifically tracked, but surveyors estimated the combined refusal and non-response rates at less than 5%. If a household refused or could not be reached after three attempts, then another household was chosen at random from the reserve list. Participants were compensated for their time with small gifts of appreciation (worth \$2.50 USD) upon completion of the interview.

Surveyors are volunteer medical students of local medical universities and colleges who are living in the study area. Surveyors received training courses on the purpose and content of the research project as well as interviewing skills in the month before data collection was conducted. There were always two research team members supervising the data collection per location. Supervisors and interviewers met together every evening when interviewers finished their field work to review the process of that day.

Study materials

This study used an adaptation of the adult consumer expanded version of the Primary Care Assessment Tool (PCAT-AE) originally developed at Johns Hopkins University [22]. This tool was designed to assess primary care quality by measuring key primary care domains based on the experience of consumers. Versions of the original tool have been validated and commonly applied around the world successfully [23–26]. The Vietnamese version of this tool (VN PCAT-AE) was validated and demonstrated

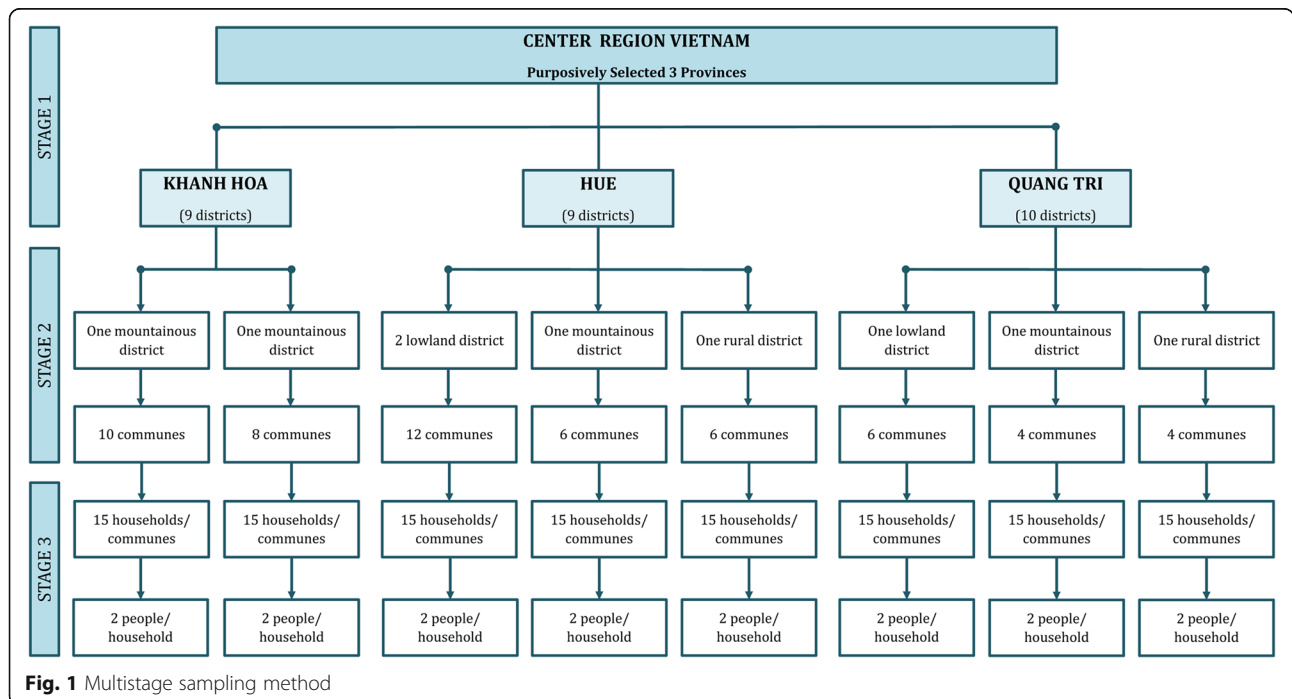


Fig. 1 Multistage sampling method

adequate internal consistency and validity with this study population as a tool for measuring the quality of primary care in Vietnam [27].

Retaining most of the major characteristics of the original version with 70 items (see Fig. 2), the VN PCAT-AE has six scales representing four core primary care domains: 1) first contact with two subdomains: accessibility (three items) and utilization (six items), 2) ongoing care (11 items), 3) coordination (eight items), and 4) comprehensiveness of services with two subdomains: available services (20 items) and services provided (11 items). It also includes three other scales representing three derivative domains: 1) family centeredness (three items), 2) community orientation (five items) and 3) cultural competence (three items). Except for the scale of Family Centeredness (0.68), all of the scales have a Cronbach's alpha above 0.70 [27].

The VN PCAT-AE uses a 4-point Likert scale response (1 = definitely not; 2 = probably not; 3 = probably; and 4 = definitely) and an additional "don't know/don't remember" option for each item. The recoding process and calculation for the sum mean score of domains and subdomains as well as the total primary care score (PCAT score) and the total primary care expanded score (PCAT expanded score) strictly complied with the guideline PCAT manual issued by John Hopkins University [28]. The score of each domain and subdomain is the mean of sum scores of all items within each. The total primary care score (PCAT score) quantifies primary care quality using the sum mean scores of the six

subdomains in the four core domains. The total primary care expanded score (PCAT expanded score) is the sum mean scores of the nine core and derivative subdomains. For calculating the sum mean scores, a mean value was assigned to "don't know/don't remember" answers as well as to missing values.

Three questions were used to inquire about an individual's usual source of care as a particular person or place [22]. For those with no identifiable source of primary care, subsequent questions were asked about the last place that was visited.

The questionnaire also included questions about demographic characteristics such as age, gender, occupation, living area, as well as health condition of participants.

Data analysis

All collected questionnaires were cleaned and scanned into a computer for storage and convenient review in the future, followed by entry into EpiData by a group of six students working in pairs. Double data entry was used to check for errors in data entry. The SPSS convert file was used to check for errors due to incorrect data entry. The Chi-square test was used to test for differences in the demographic characteristics of consumers from different types of health care facilities. ANOVA was conducted for comparison on scores of each primary care attribute, the PCAT score and the PCAT expanded score between health care settings after adjusting for gender, age, education level, job status, living area, chronic health problems, health insurance coverage and time affiliation with health

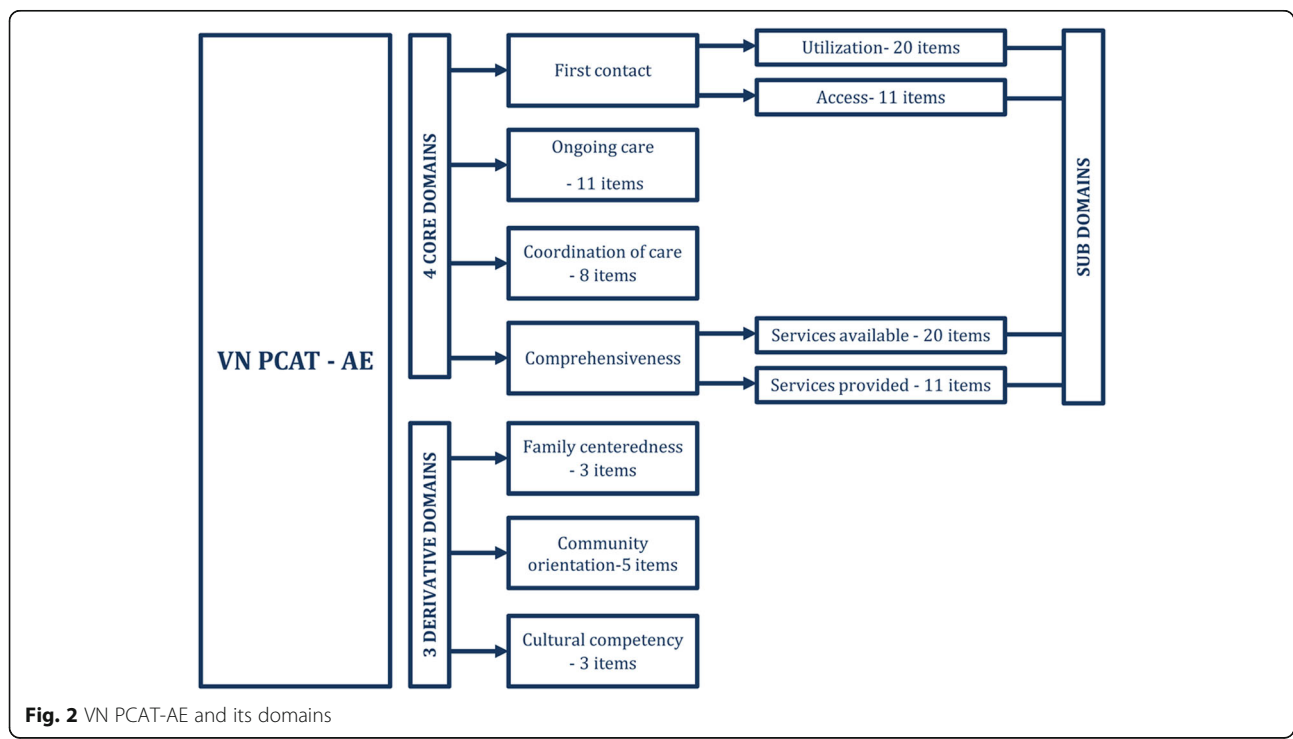


Fig. 2 VN PCAT-AE and its domains

facilities. Differences in the means of adjusted scores between health care settings were also tested using pair-wise comparison with the Bonferroni post hoc test for multiple-testing [29]

Results

Characteristic of study participants

Our study population consisted of 1662 adults, living in the central region of Vietnam, who visited a health facility at least once within the two years prior to recruitment. Table 1 shows the health facility choices of survey respondents. In general, commune health centers (CHCs) were the most common choice of respondents (39.6%, $n = 658$). In contrast, private clinics (PVC) were only rarely used (7.8%, $n = 129$). Utilization of polyclinics (PLC), district health centers (DHC), and pharmacies (PHM) as a usual source of primary care was about 12–14% for each of these categories. All higher-level government hospitals combined (GVH) such as provincial hospitals, central hospitals or other hospitals including university, military or traditional medicine hospitals were utilized as a source of primary care at a similar rate to the other alternatives to CHCs (15.3%, $n = 255$).

Table 1 also outlines the socio-demographic characteristics of the participants. Several characteristics of participants such as gender, age, educational level, job status, residential area, presence of chronic health problems and access to health insurance coverage have statistically significant associations with healthcare-seeking behaviours. Most notably, people with chronic health problems tend to choose CHCs more frequently as their usual source of care than those without (47.5%, $n = 94$ vs 38.3%, $n = 541$; $p = 0.005$). Similarly, those with health insurance were more likely to utilize CHCs than uninsured patients (43.3%, $n = 503$ vs 30.8%, $n = 152$; $p < 0.001$). Uninsured people, paying out-of-pocket for health care services, more frequently chose the private sector (private clinics or pharmacies) as their usual source of care. The three provinces had somewhat different utilization patterns: for instance, in Khanh Hoa Province, a higher percentage of people utilized the private sector than compared with the other provinces and use of polyclinics slightly outnumbered use of CHCs. Rural inhabitants in particular were more likely to utilize CHCs (56.1%, $n = 586$, $p < 0.001$), while urban dwellers preferred government hospitals, polyclinics and pharmacies (27.8%, $n = 172$ GVH; 24.9%, $n = 154$ PLC; 14.9%, $n = 92$ PHM) over CHCs (11.7%, $n = 72$) ($p < 0.001$).

Quality of primary care in different types of health care facilities

Table 2 (graphically presented in Fig. 3) shows the measures of each PCAT domain or subdomain by type of health care setting as well as total PCAT scores after adjusting for participants' demographic characteristics.

CHCs were associated with the highest quality in both total PCAT score (14.23, $p < 0.001$) and PCAT expanded score (21.07, $p < 0.01$) in comparison with other types of facilities. Regarding each attribute, CHCs were associated with the highest or second highest score for most attributes compared with other facilities, except for comprehensiveness of available services and cultural competency.

In contrast, private clinics and pharmacies were generally rated most poorly on primary care domains, especially for first contact-utilization (1.95 PVC and 1.93 PHM), comprehensiveness of services available (2.21 PVC and 1.84 PHM), comprehensiveness of service provided (1.92 PVC and 1.88 PHM), family centeredness (2.21 PVC and 1.89 PHM) and in total PCAT score (12.25 PVC and 11.35 PHM) and total PCAT expanded score (18.45 PVC and 16.90 PHM). Private clinics achieved the highest score in first contact-access (2.97): significantly higher than district health centers (2.66, $p < 0.001$) and government hospitals (2.74, $p = 0.003$) but not significantly different from CHCs (2.85, $p = 0.558$).

With regards to the hospital setting, district health centers and government hospitals were evaluated as the second and the third highest in overall primary care quality, following CHCs in total PCAT scores (13.57 DHC and 13.43 GVH) and PCAT expanded scores (20.10 DHC and 19.72 GVH). Hospitals surpassed CHCs in consumers' reports of the comprehensiveness of available services (3.25 DHC, 3.20 GVH, 2.99 CHC, $p < 0.001$), although they showed no significant difference in services provided (2.17 DHC, 2.15 GVH, 2.20 CHC, $p = 1.000$). Respondents who chose polyclinics as their usual source of care indicated the quality of these facilities to be better than private facilities but worse than other public facilities. Polyclinics performed quite well in comprehensiveness of services available (3.11) and first contact-access (2.79) but less so in other domains, especially in cultural competency (1.87).

Discussion

Our research findings provide the first comprehensive and quantitative assessment of the quality of primary care at various types of health facilities in Vietnam. In this assessment, we found that CHCs play a central role in the effort to deliver high quality primary care to the population. CHCs not only had the highest utilization rate, but they also had the highest quality scores and overall highest primary care rankings in comparison with all other health facilities providing primary care services in Vietnam. Regarding specific domains, CHCs received the highest scores in first contact utilization, ongoing care, coordination, family centeredness and community orientation. CHCs were also scored highly by consumers in first contact access and comprehensiveness of services available compared with other health care facilities. A variety of factors may influence these scores, and CHCs may benefit by their

Table 1 Socio-demographic and health related characteristics of participants by type of health facility

Variable		CHC	PLC	DHC	PVC	PHM	GVH	p
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
N (%)		658 (39.6)	196	228(13.7)	129(7.8)	196(11.8)	255(15.3)	
Gender N = 1662	Male	298(40.2)	80(10.8)	111(15.0)	46(6.2)	78(10.5)	128(17.3)	0.034
	Female	360(39.1)	116(12.6)	117(12.7)	83(9.0)	118(12.8)	127(13.8)	
Age N = 1660	18 to 39-year-old	218(49.5)	38(8.6)	42(9.5)	38(8.6)	54(12.3)	50(11.4)	< 0.001
	40 to 59-year-old	275(35.4)	100(12.9)	124(16.0)	69(8.9)	95(12.2)	113(14.6)	
	60-year-old and over	163(36.7)	58(13.1)	62(14.0)	22(5.0)	47(10.6)	92(20.7)	
Education N = 1651	< Primary school	168(51.9)	30(9.3)	39(12.0)	25(7.7)	28(8.6)	34(10.5)	< 0.001
	Primary school	222(43.4)	54(10.5)	61(11.9)	41(8.0)	60(11.7)	74(14.5)	
	Secondary school	162(37.5)	58(13.4)	70(16.2)	30(6.9)	51(11.8)	61(14.1)	
	High school	72(28.8)	33(13.2)	35(14.0)	21(8.4)	38(15.2)	51(20.4)	
	University/college	33(24.8)	18(13.5)	22(16.5)	11(8.3)	18(13.5)	31(23.3)	
Job status N = 1647	Employed full-time	383(42.1)	74(8.1)	138(15.2)	71(7.8)	126(13.9)	117(12.9)	< 0.001
	Employed part-time	130(50.6)	30(11.7)	33(12.8)	24(9.3)	20(7.8)	20(7.8)	
	Not employed	97(37.0)	46(17.6)	22(8.4)	23(8.8)	34(13.0)	40(15.3)	
	Retired/in school	43(19.6)	44(20.1)	34(15.5)	10(4.6)	14(6.4)	74(33.8)	
Province N = 1662	Thua Thien Hue	376(53.2)	31(4.4)	105(14.9)	46(6.5)	31(4.4)	118(16.7)	< 0.001
	Quang Tri	156(38.7)	28(6.9)	86(21.3)	18(4.5)	61(15.1)	54(13.4)	
	Khanh Hoa	126(22.8)	137(24.8)	37(6.7)	65(11.8)	104(18.8)	83(15.0)	
Residential area N = 1662	Urban	72(11.7)	154(24.9)	59(9.5)	69(11.2)	92(14.9)	172(27.8)	< 0.001
	Rural	586(56.1)	42(4.0)	169(16.2)	60(5.7)	104(10.0)	83(8.0)	
Self-rated Health N = 1660	Good	350(40.0)	108(12.4)	110(12.6)	62(7.1)	117(13.4)	127(14.5)	0.167
	Fair/poor	308(39.2)	88(11.2)	116(14.8)	67(8.5)	79(10.1)	128(16.3)	
Chronic health problems N = 1612	Yes	94(47.5)	13(6.6)	33(16.7)	16(8.1)	12(6.1)	30(15.2)	0.005
	No	541(38.3)	173(12.2)	191(13.5)	109(7.7)	184(13.0)	216(15.3)	
Time of affiliation N = 1628	Less than 6 months	61(30.5)	31(15.5)	30(15.0)	21(10.5)	27(13.5)	30(15.0)	< 0.001
	6 months to 1 year	50(26.7)	39(20.9)	32(17.1)	13(7.0)	20(10.7)	33(17.6)	
	1–2 years	87(26.3)	41(12.4)	59(17.8)	38(11.5)	56(16.9)	50(15.1)	
	3–4 years	85(35.6)	31(13.0)	25(10.5)	22(9.2)	34(14.2)	42(17.6)	
	5 or more years	358(53.4)	49(7.3)	78(11.6)	32(4.8)	57(8.5)	97(14.5)	
Visited health the facility mainly because of a special medical problem? N = 1628	Yes	472(38.9)	143(11.8)	180(14.9)	102(8.4)	129(10.6)	186(15.3)	0.059
	No	170(40.9)	50(12.0)	46(11.1)	24(5.8)	61(14.7)	65(15.6)	
Government Health Insurance N = 1658	Yes	503(43.3)	169(14.5)	172(14.8)	44(3.8)	79(6.8)	195(16.8)	< 0.001
	No	152(30.8)	27(5.5)	56(11.4)	82(16.6)	117(23.7)	59(12.0)	
Affordable for health care last year N = 1509	Yes	109(39.6)	21(7.6)	47(17.1)	24(8.7)	38(13.8)	36(13.1)	0.052
	No	467(37.8)	159(12.9)	158(12.8)	95(7.7)	150(12.2)	205(16.6)	

CHC Commune health center, PLC Poly clinic, DHC District health center, PVC Private clinic, PHM Pharmacy store, GVH Government hospital

design. For instance, access scores may in part reflect good geographic access resulting from the large number of CHCs distributed throughout the country. Specifically, the access to health facilities other than CHCs for rural residents may be more limited compared with urban residents, consistent with our finding that the utilization rate of CHCs by rural residents was higher than by urban residents. First contact

utilization, continuity and comprehensiveness may be greater as CHCs are also the smallest health care units, closest to the community, and by mandate provide a wide variety of primary care services to care for people of all ages ranging from children to older people including pregnancy and maternal care. Moreover, because of their close relationship with and governmental responsibility for the

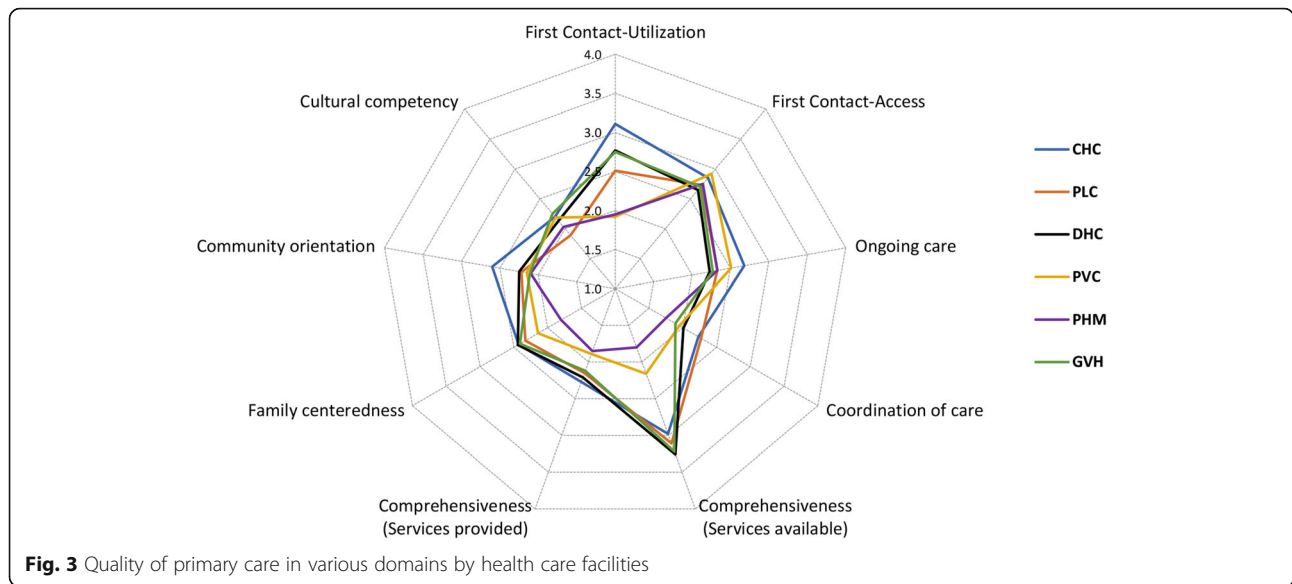
Table 2 Adjusted primary care attributes and total score reported by participants by type of health facility

Core and Derivative Domains	Subdomains	CHC	PLC	DHC	PVC	PHM	GVH	Significant differences
First contact	Utilization	Mean	2.92	2.34	2.64	1.95	1.93	CHC > all other*** PVC < all other *** but not significant with PHM PHM < all other *** except PVC PLC, DHC, GVH: no significant difference
		95 CI	(2.79–3.04)	(2.17–2.51)	(2.49–2.80)	(1.76–2.15)	(1.76–2.09)	
		n	607	175	217	116	234	
		Rank	1	4	2	5	3	
	Access	Mean	2.85	2.79	2.66	2.97	2.82	CHC > DHC*** DHC < CHC, PVC*** PVC > DHC***, GVH** No significant difference between PHM and others
95 CI		(2.78–2.92)	(2.70–2.88)	(2.58–2.75)	(2.87–3.08)	(2.73–2.90)	(2.66–2.82)	
		n	609	177	215	115	236	
		Rank	2	4	6	1	5	
Ongoing care		Mean	2.56	2.32	2.15	2.50	2.31	CHC > all other***, but not significant with PVC PVC > DHC, GVH*** and PLC* DHC > PLC, PHM**
		95 CI	(2.49–2.63)	(2.23–2.41)	(2.06–2.23)	(2.39–2.60)	(2.23–2.40)	
		n	604	177	216	116	235	
		Rank	1	3	6	2	4	
Coordination of care		Mean	2.14	2.09	1.95	2.02	1.83	No significant difference between health care facilities
		95 CI	(1.91–2.37)	(1.76–2.42)	(1.68–2.22)	(1.68–2.37)	(1.52–2.14)	
		n	156	39	63	30	40	
		Rank	1	2	4	3	5	
Comprehensiveness	Available services	Mean	2.99	3.11	3.25	2.21	1.84	CHC < DHC, GVH*** and CHC > PVC, PHM*** DHC > CHC, PVC, PHM*** PVC > PHM, but < all others*** PHM < all others*** GVH > PHM, PVC, CHC***
		95 CI	(2.91–3.06)	(3.01–3.21)	(3.16–3.34)	(2.09–2.32)	(1.74–1.94)	
		n	598	167	215	111	228	
		Rank	4	3	1	5	2	
Services provided		Mean	2.20	2.23	2.17	1.92	1.88	CHC > PVC*, PHM*** PVC < CHC*, DHC**, PLC* PHM < all others (CHC***, PLC***, DHC**GVH**) except PVC
		95 CI	(2.10–2.29)	(2.10–2.36)	(2.05–2.29)	(1.77–2.07)	(1.76–2.01)	
		n	598	175	212	112	230	
		Rank	2	1	4	5	3	
Family centeredness		Mean	2.45	2.34	2.45	2.21	1.89	PHM < all others (CHC, DHC, GVH***, PLC**), but not significant with PVC
		95 CI	(2.31–2.58)	(2.15–2.52)	(2.29–2.61)	(2.01–2.42)	(1.72–2.06)	
		n	599	174	215	117	229	
		Rank	1 (tie)	4	1 (tie)	5	3	
Community orientation		Mean	2.50	2.19	2.18	2.13	2.09	CHC > all others***, PLC**
		95 CI	(2.40–2.61)	(2.04–2.33)	(2.05–2.31)	(1.97–2.30)	(1.95–2.22)	
		n	602	169	215	109	226	
		Rank	1	2	3	4	5 (tie)	

Table 2 Adjusted primary care attributes and total score reported by participants by type of health facility (Continued)

Core and Derivative Domains	Subdomains	CHC	PLC	DHC	PVC	PHM	GVH	Significant differences
Cultural competency	Mean	2.12	1.87	2.14	2.17	2.00	2.20	PLC < GVH*
	95 CI	(1.98–2.26)	(1.68–2.06)	(1.97–2.31)	(1.96–2.39)	(1.82–2.19)	(2.04–2.37)	
	n	591	168	203	111	177	221	
	Rank	4	6	3	2	5	1	
Composite Scores	Mean	14.23	13.37	13.57	12.25	11.35	13.43	CHC > all others (PVC, PHM***, PLC, DHC, CHC**) PHM < PVC*, all others*** PVC < all other (CHC DHC, GVC***, PLC**) but except PHM
	95 CI	(13.92–14.53)	(12.95–13.79)	(13.20–13.94)	(11.78–12.72)	(10.96–11.74)	(13.07–13.79)	
	n	604	174	216	113	190	233	
	Rank	1	3	2	5	6	4	
PCAT expanded score	Mean	21.07	19.27	20.10	18.45	16.90	19.72	CHC > all others***, DHC* PHM < all others***, PVC* DHC < CHC* but > PVC** and PHM*** GVH < CHC*** but > PHM***
	95 CI	(20.57–21.57)	(18.59–19.94)	(19.49–20.71)	(17.68–19.22)	(16.26–17.54)	(19.13–20.31)	
	n	608	178	217	115	191	236	
	Rank	1	4	2	5	6	3	

CHC Commune health center, PLC Poly clinic, DHC District health center, PVC Private clinic, PHM Pharmacy store, GVH Government hospital
 Scores were adjusted for gender, age, education level, job status, living area, chronic health problems, health insurance coverage and time affiliation with health facilities. Bonferroni post-hoc means test: significance indicated at *, p < 0.05; **, p < 0.01; ***, p < 0.001



care of local communities, CHCs incorporate some understanding of local context and culture, resulting in a strong community orientation.

Over the last two decades, Vietnam has invested more heavily in improving CHCs. Recently, the government has focused on improving both infrastructure and staff quality at the grassroots level, [30–33] and a previous study on public primary care centers in northern Vietnam demonstrated that CHCs have high capacity in delivering prevention and treatment services [15]. This investment in CHCs appears to be justified by our results, suggesting CHCs provide easily accessible, longitudinal and comprehensive care. Higher scores in these domains have been associated with better population-based health outcomes, suggesting government investment in CHCs is a rational and worthwhile strategy to improve overall health and well-being for all in Vietnam. This is consistent with previous research in China showing patient experiences with CHCs suggested equal or better primary care quality when compared with other health care providers (secondary and tertiary hospitals), supporting the appropriateness of the CHC delivery model in providing primary care to entire populations including the most vulnerable [6].

In contrast, the private sector, including both clinics and pharmacies, scored the lowest on overall quality of primary care provided in our study. The greatest deficits were seen in first contact utilization, coordination, comprehensiveness of services and family centeredness. Many of these domains may be impacted by a lack of integration between the public and private sectors. Private clinics, however, scored similarly to CHCs in first contact-access. This

might be expected given first contact-access is a “customer service” attribute that may directly impact the profitability of private sector providers. Prior research has found that greater accessibility was one major reason that patients of private clinics in Hong Kong had better primary care experiences than those receiving care at general outpatient clinics [10]. Research in mainland China also demonstrated that primary care village clinics owned and managed by a private source scored higher in the PCAT domain of first contact-access when compared with those owned and managed by a hospital – however, they also received lower general scores for primary care quality [34]. On the other hand, a large review of 149 studies in 2003 found these studies increasingly report “no difference” in access between for-profit and non-profit providers in the U.S. Moreover, this review also pointed out that non-profit care was superior to for-profit on cost, quality and the amount of charity care provided in a majority of studies [35]. To promote improved quality in the private sector, building linkages to promote integration between private and public clinics could be useful to enhance the effectiveness of private health care facilities.

In Vietnam, medications - including antibiotics - are readily available at private pharmacies without a prescription. As a result, it is quite common that people will self-treat based on advice from prior provider encounters or family members or may just solicit advice from the pharmacist, and thus use a private pharmacy as their usual source of care rather than enduring long waits at more traditional primary care facilities. Despite this, patients’ experiences suggest pharmacies provide the lowest overall primary care quality as they lack a number of the essential elements and services associated with high

quality primary care. Given this finding, the Vietnamese government may want to consider possible interventions to limit first-contact care-seeking behaviour by patients using pharmacies as the usual source of care without a doctor's prescription.

In addition to their use of the private sector, many Vietnamese people bypass CHCs or other grassroots level facilities in preference of tertiary care hospitals with the expectation that such hospitals offer better quality due to more technological resources and a wider range of services. Medical literacy may also impact patient perception and choice of health facility if patients are uncertain about the severity of their condition or complexity of their care needs. Some research in other countries might support this expectation, such as in Malawi where work with the PCAT-Mw tool found that health centers scored lower than outpatient clinics in hospitals with regards to total primary care quality, first contact access and comprehensiveness of services available [36]. Our study in Vietnam, however, found that these perceptions are misguided as hospitals performed worse than CHCs in most attributes of primary care. While hospitals rated better in comprehensiveness of available services than CHCs, they scored more poorly in all other domains including the comprehensiveness of services provided. Our finding is consistent with other existing data from China and U.S. suggesting that hospitals and sub-specialists are more likely to provide lower quality primary care than trained frontline providers [7, 11].

This study has several limitations. First, the head of household and another adult member were interviewed without a random sampling method within the household, leading to the possibility of some unintentional bias in the collection of responses. The failure to record precise non-response rates also introduces some lack of clarity about the degree of potential bias in our findings. Secondly, the number of participants from certain health facilities such as polyclinics, private clinics and pharmacies were quite small in comparison with the number attending CHCs, and therefore may not allow for the most accurate assessment of their consumers. Our study also is not designed to determine the specific service delivery aspects and activities within each type of facility that may lead to these findings, such as the inclusion of trained family physicians or the presence of specific equipment or medications. Because our sample was limited only to consumers of those communes with a physician working in the local CHC, we also cannot determine if the quality of primary care would be the same in those CHCs staffed without a physician.

Conclusions

Despite these limitations, this study provides useful insights for policy-makers in low and middle-income countries as they seek to determine where to best incentivize

and direct patient utilization of primary care services. The high quality of primary care services offered in CHCs compared with other facilities gives Vietnam ample reason to promote greater use of them. The typical pattern of self-pay patients bypassing CHCs in search of better quality care at hospitals appears to be misguided in Vietnam, and the government may want to consider more substantial efforts to alert the public to these misperceptions. Given the higher quality of primary care services offered at CHCs coupled with the increased availability and utilization by those with non-communicable diseases, low income and in hard-to-reach rural areas, CHCs also seem likely to have the most substantial effect on reducing those health inequities that can be improved by primary care. More study is needed, however, populations may benefit most by building and strengthening grassroots networks of community-based health centers as the most effective solution for overcrowding at upper level hospitals while simultaneously providing better overall health outcomes.

Additional file

Additional file 1: Population density of study area. (PDF 5133 kb)

Abbreviations

CHC: Commune health center; CHCs: Commune health centers; DHC: District health center; GHV: Government hospitals; PCAT: Primary Care Assessment Tool; PCAT-AE: Primary Care Assessment Tool adult consumer expanded version; PHM: Pharmacy store; PLC: Polyclinic; PVC: Private clinic; VN PCAT-AE: Vietnamese Primary Care Assessment Tool adult consumer expanded version

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Availability of data and materials

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Authors' contributions

All authors contributed to the literature search and study design. Data collection was done by NTH and NMT. NTH and WP analysed data. NTH, WP, AD and JM interpreted data. NTH performed the manuscript drafting and revising. All authors participated in the manuscript revision. All authors approved the final version of this manuscript and agreed to its submission. All authors besides the first author NTH contributed equally to this work.

Ethics approval and consent to participate

Ethical approval for the study was granted from the Scientific Committee of Hue University of Medicine and Pharmacy on 18th March 2014 and IRB review from Boston University (H-31432). Written informed consents from all participants were obtained prior to interview.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Supporting information Paper 3

Figure: Population density of study area

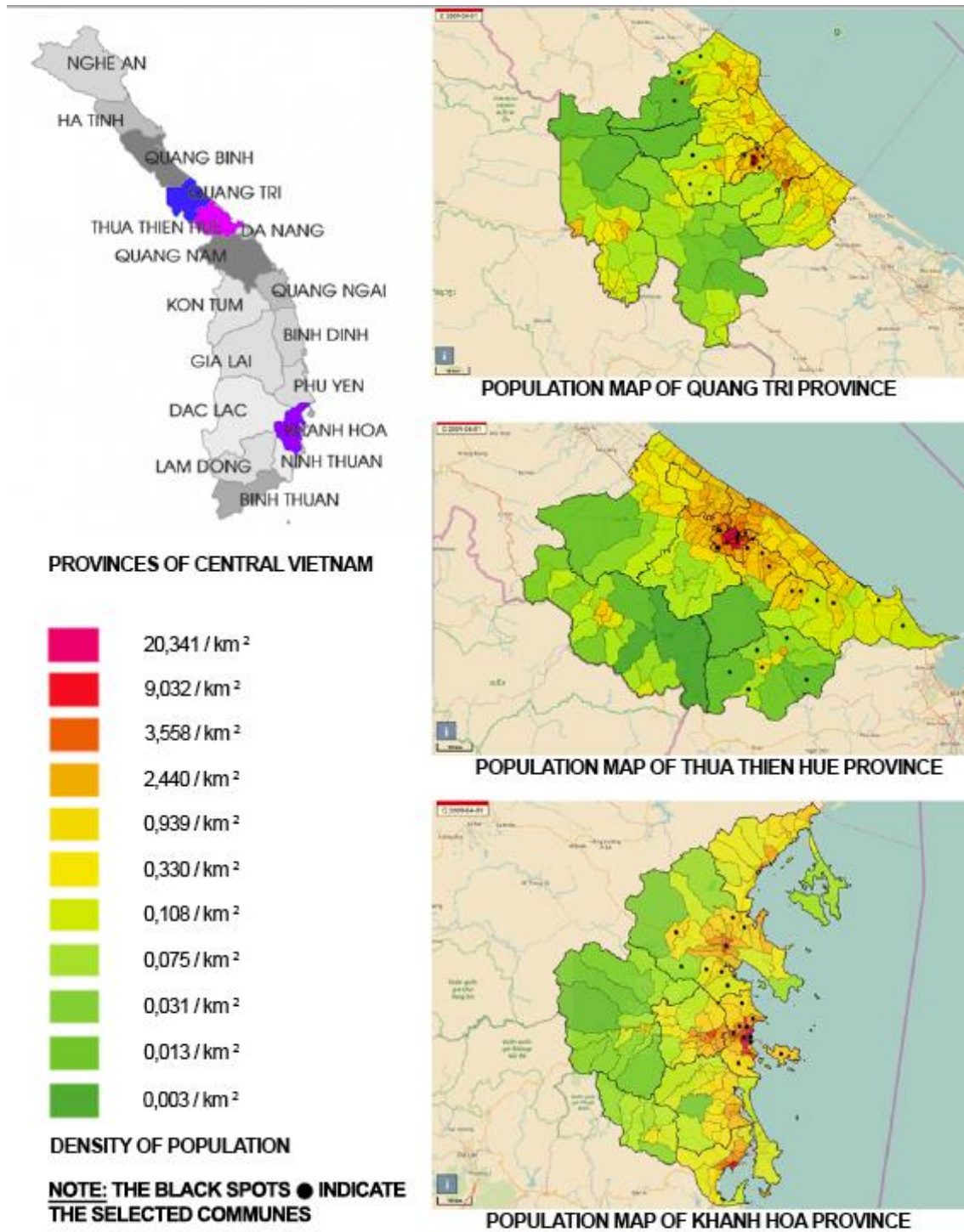


Figure. Population density of study area.

Data was extracted from: <https://www.citypopulation.de/>

PHASE 2

2.2. Primary care quality in Vietnam from the provider's views




Paper 4: Primary care quality in Vietnam: Perceptions and opinions of primary care physicians in commune health centers - A mixed method study

Hoa NT, Derese A, Peersman W, Markuns JF, Willems S, Tam NM (2020) Primary care quality in Vietnam: Perceptions and opinions of primary care physicians in commune health centers – a mixed-methods study. PLoS ONE 15(10): e0241311. <https://doi.org/10.1371/journal.pone.0241311>

In this paper, we explored how primary care physicians working at commune health centers in Vietnam evaluate their performance and their perception of how to improve the situation. It aims to answer the third and fourth research questions of this thesis.

RESEARCH ARTICLE

Primary care quality in Vietnam: Perceptions and opinions of primary care physicians in commune health centers – a mixed-methods study

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Abstract

Introduction

Measuring the performance of a primary care system is one of the very first steps to find out whether there is room for improvement. To obtain an objective and comprehensive view, this measurement should come from both the supply and demand sides of the system. Patients' experiences of primary care have been studied around the world, but much less energy has been invested in researching providers' perspectives. This research aims to explore how primary care physicians working at commune health centers in Vietnam evaluate their performance and their opinions on how to improve the quality of primary care services.

Materials and methods

First, a quantitative study was conducted using the validated Vietnamese PCAT questionnaire—provider expanded version (VN PCAT PE) targeting all primary care physicians (PCPs) working at commune health centers in a province of Central Vietnam. Next, a qualitative study was carried out, consisting of in-depth interviews with PCPs, to better understand the results of the quantitative survey and gain insight on barriers of primary care services and how to overcome them.

Results

In the quantitative portion of our study, 150 PCPs rated the quality of ongoing care and first contact in CHCs as the best (3.09 and 3.11 out of 4, respectively), and coordination as the worst performing core domain (2.53). Twenty-two PCPs also participated in our qualitative research. In regards to challenges that primary care physicians face during their daily practice, three central themes emerged: 1) patient factors such as client attitude and knowledge,

Competing interests: The authors have declared that no competing interests exist.

2) provider factors such as the burden of administrative work and lack of training opportunities, and 3) contextual factors such as low income and lack of resources including medicines and diagnostics. Participants recommended more health promotion campaigns in the media, increasing the number of services available at CHCs (such as being able to take blood samples), reducing the workload related to administration for CHC leaders, greater government subsidies, and providing more training courses for PCPs.

Conclusions

Findings from this study offer a valuable view from the supply-side of the primary care system, specifically those who directly deliver primary care services. Along with the earlier study on consumers' evaluation of the Vietnamese primary care system, and literature from other low and middle-income countries, these findings offer emerging evidence for policymakers to improve the quality of primary care in Vietnam.

Introduction

One of the United Nations' Sustainable Development Goals is to achieve universal health coverage, defined as financial risk protection, access to quality essential health care services and access to safe, effective, high-quality and affordable essential medicines and vaccines for all [1]. To achieve this goal, investment to improve the quality of primary care would be one of the most vital components for all countries. Recently, in the new Astana Declaration on Primary Health Care, the commitment of states and governments has been reaffirmed toward the establishment of "a sustainable primary health care" as well as the improvement of "the capacity and infrastructure for primary care—the first contact with health services" [2].

Measuring the performance of primary care service delivery is one of the very first critical steps in identifying areas for improvement [3], and multiple efforts have been underway over the last few decades. Examples include the Primary Health Care Vital Signs Profile from the Primary Health Care Performance Initiative utilizing a range of existing global and country level data to present a system-level view of primary health care service delivery, as well as the Primary Care Evaluation Tool from the WHO Regional Office for Europe consisting of three separate questionnaires: one on the situation of primary care policies and structures at the national level, one for primary care physicians and one for patients [4, 5]. Looking more specifically at delivery of primary health care services at the point of care, the Primary Care Assessment Tool (PCAT) from Johns Hopkins Primary Care Policy Center is a long standing tool based on core primary care principles, used globally and validated in multiple countries. This survey tool includes four versions: an adult consumer survey, a child consumer survey, a provider survey and a facility survey [6].

Various studies around the world have explored patients' experiences of primary care, and have often revealed systemic problems that affect quality and efficiency [7, 8]. To obtain an objective and comprehensive view of this service delivery, evaluation should come from both sides of the system: users (patients) on the demand-side, and providers (health care professionals) and health care managers on the supply-side. A recent study in Vietnam used a validated version of the adult consumer version of the PCAT to survey residents on their experiences of different primary health care facilities [9]. In contrast, relatively little energy has been invested in learning how primary care physicians perceive the status of the services they are providing

and the environment they are working in. A recent South African study highlighted that there was a significant gap between clients' experience with primary care and what managers and providers thought they were delivering [10].

The current health system in Vietnam is a mixed public-private system, in which the public system plays a critical role in preventive and curative care for the population nationwide. The public health care system is a four-tier system: central, provincial, district, and commune. The central and provincial levels are classified as tertiary and secondary care with specialised health care professionals, while district and commune levels deliver primary health care services. Being the foundation of the health system, primary care is considered of great significance in the national health program of Vietnam [11].

In Vietnam, primary care physicians (PCPs) often work at commune health centers (CHCs), together with nurses, midwives, pharmacists, and others. A PCP is a general doctor with or without post-graduate speciality training in family medicine or other specialities. They often work as the head of CHCs and also provide clinical services such as examination and treatment of patients. The widespread network of CHCs across the country functions as a gate-keeping mechanism to the health care system. However, despite the Ministry of Health's efforts to improve primary care quality in recent years [12–18], patients continue to bypass these facilities and choose to consult secondary or tertiary levels of care directly, presumably because they expect to obtain higher service quality from those levels, even if at a higher out-of-pocket cost. Interestingly, our own prior work has explored how patients experience primary care at various health care facilities, and noted primary care quality was rated highest at CHCs [9].

We conducted this study to explore how primary care physicians working at CHCs in Vietnam evaluate their own performance and what they perceive can be done to improve primary care and strengthen their role as the primary entry point to the health care system.

Specifically, this study sought to answer the following questions:

1. How do primary care physicians working at commune health centers evaluate the performance of their services?
2. What are the barriers to providing high quality primary care services according to the primary care physicians working at commune health centers, and what do they recommend to overcome those barriers?

Materials and methods

We used a mixed methodology in this study (Fig 1). First of all, a quantitative survey was conducted, using the validated Vietnamese PCAT Questionnaire—Provider Expanded version (VN PCAT-PE) [19] among primary care physicians (PCPs) working at CHCs in a chosen province. Next, a qualitative study was carried out, consisting of in-depth interviews with PCPs, to better understand the results of the quantitative survey and gain insight on how to improve the quality of primary care services.

Study context

This study was carried out in Thua Thien Hue, a coastal province in Central Vietnam with a population density of 235 persons/km² [20]. The health care system in Thua Thien Hue is similar to other provinces throughout Vietnam, typically with a district hospital surrounded by a network of CHCs at the primary care level in each district. In addition, there are three general hospitals, seven specialist hospitals and one central hospital in the state-run system located in Thua Thien Hue [21].

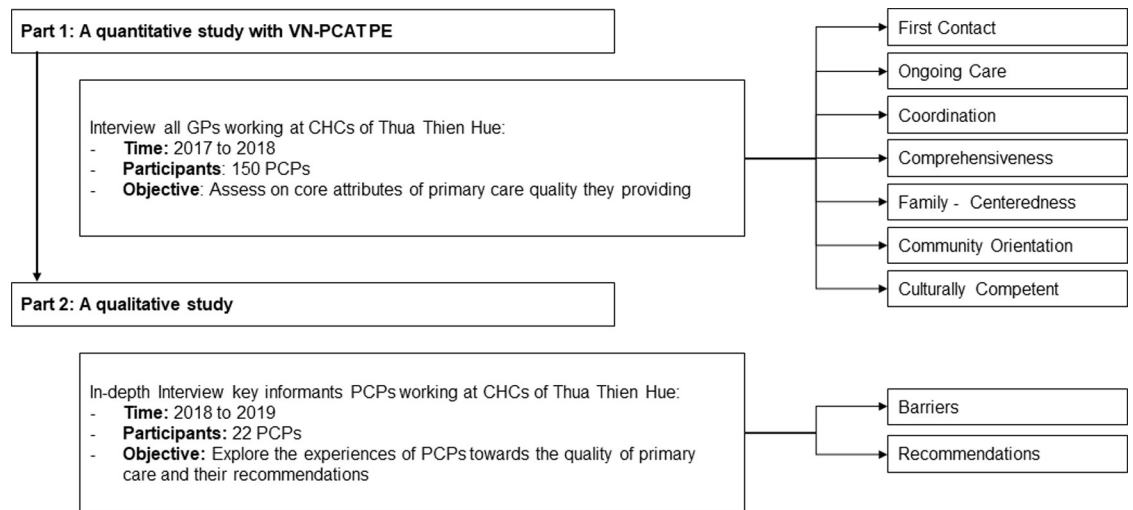


Fig 1. Study design.

<https://doi.org/10.1371/journal.pone.0241311.g001>

In total there are 152 CHCs in the province. In general, each CHC is equipped with a PCP as head of the health care team, an assistant doctor, a nurse, a midwife, and a pharmacist [22]. In some districts, where there is a lack of PCPs, their positions may be filled by an assistant doctor, a traditional medicine doctor, an assistant traditional medicine doctor or a preventive doctor. Based on the needs, the district health authorities may alter the composition of the local primary health care team. In Hue City, for instance, some PCPs are asked to also take charge of a neighbouring CHC without a PCP. These PCPs work three days at their own CHC and two days at the alternate CHC. In other districts, the non-PCP CHC examination and treatment are carried out by assistant doctors. In some CHCs located in mountainous areas, by contrast, there may be more than one doctor at the CHCs. Most of these have recently been upgraded from assistant doctors to general doctors after completing an additional 4-year training program.

Sampling

Quantitative study. This census study surveyed all PCPs working at commune health centers in Thua Thien Hue Province who consented to participate in the study. These PCPs had at least one-year of experience as a PCP at a CHC.

Qualitative study. For the qualitative portion, it was required that participants had at least one-year of experience as a PCP at a CHC. We planned to carry out in-depth interviews until information saturation was achieved. The anticipated number of interviewees was estimated to be 20 to 25. To achieve representativeness, we tried to balance our purposive selection of participants by location of workplaces (urban or rural), number of years in practice, and whether or not they had completed post-graduate training using data from our quantitative study surveying all PCPs working at CHCs in Thua Thien Hue province.

We believe the sample for the quantitative portion of this study can be considered representative of PCPs working in CHCs throughout the country, and while not designed to be generalizable, we expect results of the qualitative portion of this study to be transferable to the experience of many other PCPs (Fig 2).

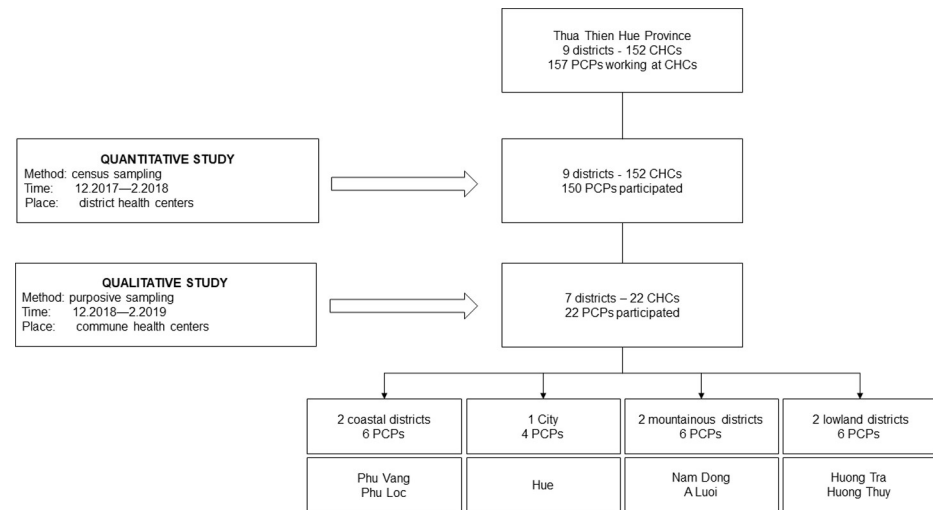


Fig 2. Sampling procedure.

<https://doi.org/10.1371/journal.pone.0241311.g002>

Data collection

Quantitative study. An adaptation of the Provider Expanded version of the Primary Care Assessment Tool (PCAT-PE), originally developed at Johns Hopkins University, was employed as the major investigation instrument in the present research. The validated version of this tool for Vietnam (VN PCAT-PE) contains 116 items on six scales representing four core primary care domains, namely 1) first contact, 2) ongoing care, 3) coordination, and 4) comprehensiveness of services; three additional scales representing three derivative domains of 1) family centeredness, 2) community orientation, and 3) cultural competence [23]. The process of recording and calculating the sum mean score of domains as well as subdomains of primary care strictly complied with the guidelines in the PCAT manual [24].

The questionnaire, which took 30 to 45 minutes to self-complete, was delivered at the end of a staff meeting held monthly at each district health center. If a PCP was absent at that meeting, he or she was contacted for an appointment at their CHC, and otherwise excluded from our research after three unsuccessful attempts.

Prior to the study, participants received a full explanation of its content and purpose, then signed a consent form if they agreed to participate. 5 USD was offered to each participant as a small token of appreciation. Quantitative data was collected from December 2017 to February 2018.

Qualitative study. An interview guide was developed to explore the views of interviewees, and the core questions asked were as follows (S1 Appendix):

1. What do you think about primary care quality?
2. What are the barriers/challenges to primary care quality?
3. What should be done to improve the current situation of primary care?

Interviews were conducted in Vietnamese by two research assistants, who both held Master's degrees in public health. The interview location was privacy-assured, mostly at their CHCs, and the time was suitable for the participants. Each interview lasted 40 to 60 minutes and was tape-recorded with the consent of the participant; notes were taken in Vietnamese and the transcripts were completed by the interviewers. The whole process was closely

supervised by NTH, the principal investigator, with regular audiotape and transcription review, and revision of the interview guide if needed during the data collection period. 10 USD was offered to each interviewee as a token of appreciation. Qualitative data was collected from December 2018 to February 2019.

Ethical approval for the study was granted from the Scientific Committee of Hue University of Medicine and Pharmacy on March 20th, 2015. Written informed consents from all participants were obtained prior to interviews.

Data analysis

Quantitative study. Quantitative data were analysed with the SPSS software version 24.0.

Qualitative study. Data were analysed using a thematic framework [25, 26], all the interview data were coded and analysed according to the seven stages of this method: transcriptions, familiarisation with the interviews, coding, developing a working analytical framework, applying the analytical framework, charting data into the framework matrix, and finally, NTH interpreting the data. All codes and themes were presented to other research team members (AD, WP, JM, SW and NMT) for discussions through emails on data interpretation results and key findings. NVivo12 (QSR International, www.qsrinternational.com) was used to code all transcripts. The checklist for consolidated criteria (COREQ Checklist) for reporting qualitative research was utilised to report the research process and results [27].

Results

Characteristics of participants

150 out of a total of 157 PCPs working at CHCs participated in our quantitative study. Among them, 22 PCPs continued to take part in our in-depth interviews. Tables 1 and 2 show the characteristics of the participants and their workplaces. In the sample for the quantitative study, there were about twice as many male doctors as female ones; three-fifths of these doctors had been practising for 20 years or more. Although CHCs provide care for patients of all ages, most of their patients were adults. Consistent with national data on the medical workforce, 38.9% of PCPs working at CHCs were female [22].

Table 1. Characteristics of study population: Primary care physicians.

Characteristics	Quantitative study (N = 150)	Qualitative study (N = 22)
	n (%)	n (%)
Gender		
Female	52 (34.7)	13 (59.1)
Male	98 (65.3)	9 (40.9)
Age	Mean 46.2, SD 7.85, Range (29–60)	Mean 47.3, SD 8.24, Range (30–54)
29 to 39-year-old	33 (22.0)	5 (22.7)
40 to 50-year-old	62 (41.3)	4 (18.2)
51 to 60-year-old	55 (36.7)	13 (59.1)
Number of years in practice	Mean 18.32, SD 9.3, Range (1–35)	Mean 21.5, SD 9.4, Range (3–32)
less than 10 years	35 (23.3)	4 (18.2)
10 to 19 years	24 (16)	2 (9.1)
20 to 29 years	83 (55.3)	13 (59.1)
30 years and more	8 (5.3)	3 (13.6)

<https://doi.org/10.1371/journal.pone.0241311.t001>

Table 2. Characteristics of study population: Health facilities (N = 150).

Characteristics	Mean (SD)	Range
Number of consultations per day	28.7 (14.2)	(5–95)
Percentage of consultations by age		
0–6 years old	20.0 (14.2)	(0–100)
7–16 years old	15.2(8.5)	(0:50)
17–59 years old	34.9 (18.2)	(0:85)
60–80 years old	20.5 (11.2)	(0:60)
>80 years old	10.1 (8.1)	(0:50)
Percentage of chronic patients		
	n (%)	
Less than 20%	86 (62.8)	
From 20 to 40%	37 (27.0)	
From 41 to 60%	10 (7.3)	
More than 60%	4 (2.9)	

<https://doi.org/10.1371/journal.pone.0241311.t002>

Primary care assessment from the physicians' view

PCPs working at CHCs rated the quality of primary care as 16.34 (maximum potential score 24) on the PCAT score and 23.95 (maximum potential score of 36) on the PCAT expanded score. (Table 3, visualised by Fig 3). Ongoing Care and First Contact were the primary care attributes that PCPs rated the highest. Coordination was rated as having the worst performance amongst the core domains. With regards to three derivative domains, Cultural Competency scored lowest in quality of performance.

Challenges of primary care quality and recommendations from primary care physicians

An overview of the results of the qualitative research can be found in Table 4. Challenges perceived by primary care physicians and their recommendations were categorized into three major factors: patients, providers themselves and contextual factors. Several suggestions had been raised by the respondents in order to improve the quality of primary care and recruit patients back to their health care facilities.

Challenges of primary care quality. *Patient factors.* Some factors related to patients' knowledge and perceptions were considered barriers to primary care at the CHCs. The

Table 3. Primary care assessment from physicians' perspectives (PCAT score) (N = 150).

Domain	Mean	SD
First Contact	3.09	0.60
Ongoing Care	3.11	0.44
Coordination	2.53	0.51
Coordination (Information system)	2.44	0.64
Comprehensiveness (Services available)	2.70	0.49
Comprehensiveness (Services provided)	2.58	0.54
Family-Centeredness	2.50	0.52
Community Orientation	2.83	0.51
Culturally Competent	2.32	0.57
PCAT score	16.34	2.32
PCAT expanded score	23.95	3.41

<https://doi.org/10.1371/journal.pone.0241311.t003>

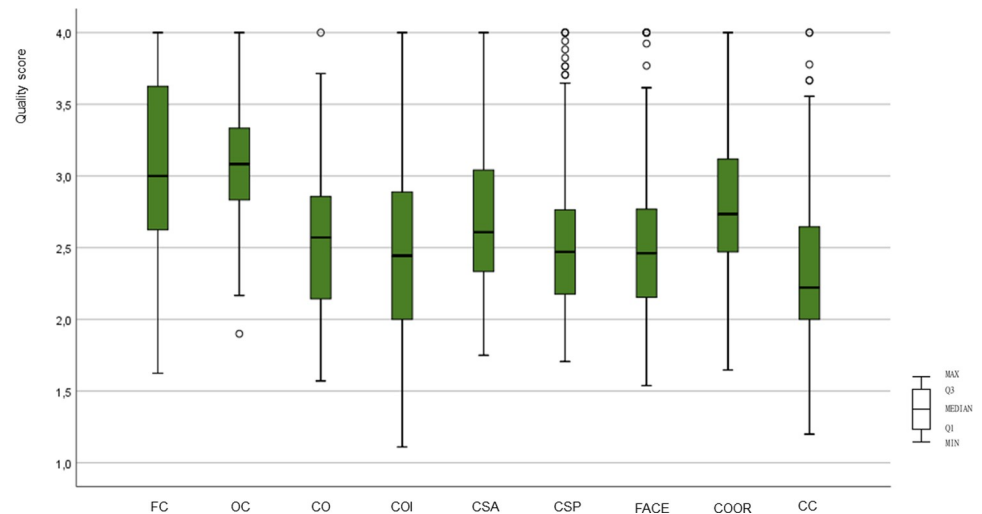


Fig 3. Primary care assessment from physicians’ perspectives (PCAT score) (N = 150). FC: First Contact; OC: Ongoing care; CO: Coordination; COI: Coordination (information system); CSA: Comprehensiveness (Services available); CSP: Comprehensiveness (Services provided); FACE: Family-Centeredness; COOR: Community Orientation; CC: Culturally Competent.

<https://doi.org/10.1371/journal.pone.0241311.g003>

bypassing behaviour of skipping primary care and moving to an upper level was still prevalent and believed to be due to superior technology at the upper levels. In addition, it was believed patients go to pharmacies and consult pharmacists instead of physicians because patients perceive it to be faster and more convenient.

“...The most common problem is that pharmacies sell prescription medications without a doctor’s prescription. Due to this so-called convenience and wrong personal perception, people

Table 4. Thematic matrix.

Category	Patient factors	Provider factors	Contextual factors
1. Challenges of primary care quality	<ul style="list-style-type: none"> Perception of passing by the grassroots level to upper level care due to better technology, going to a private clinic, or simply presenting to a pharmacy without a prescription. 	<ul style="list-style-type: none"> Only one doctor at CHCs, responsible for both administrative and clinical work 	<ul style="list-style-type: none"> Administrative burden
	<ul style="list-style-type: none"> Low level of patient knowledge in some rural mountainous areas 		<ul style="list-style-type: none"> Do not have the budget for daily repairs for equipment. Lack of medication for non-communicable diseases. Reimbursement process from the health insurance company is complicated Low income compared to other employment options
2. Recommendations for improving primary care quality	<ul style="list-style-type: none"> Enact media campaigns for patients about health promotion and services available at CHCs 	<ul style="list-style-type: none"> Additional PCP or reduce the workload related to administration for CHC leaders 	<ul style="list-style-type: none"> Ensure an adequate supply of medication
		<ul style="list-style-type: none"> Provide frequent short training courses to update clinical knowledge 	<ul style="list-style-type: none"> Offer more lab tests such as blood glucose measurement Have CHCs collect blood samples and deliver them to the nearby district health center for results. Provide greater subsidy from the government for PCPs working at CHCs.

<https://doi.org/10.1371/journal.pone.0241311.t004>

do not come to us, nor private clinics, as they prefer to buy medications at the pharmacy. When the patient's condition does not improve, they will then visit the CHCs. . ." P14

Moreover, PCPs encountered difficulties in providing health care for people in rural mountainous areas, citing a perception that most local residents focus on religious beliefs and divine healing powers or alternative treatments rather than consulting doctors or health experts.

" . . . When older people have health problems such as breathing difficulties or arthralgia, some of them choose their own method of treatment over seeing doctors in the first place. They would offer rice, chicken, and money to the priests to hold a religious ceremony. . ." P11

Provider factors. As head of the CHC, most of the PCPs expressed that they had a heavy workload. They were responsible for both administrative and clinical work at the CHCs. Furthermore, PCPs were not allowed to take a day off after a 24-hour duty shift, unlike other health care staff, because they were the only ones who could examine and treat patients. Specifically, due to a lack of human resources, CHCs in Hue city were not all staffed with PCPs; hence, some PCPs were asked to also be responsible for a neighbouring CHC that lacked a qualified PCP.

" . . . I am myself a general doctor, and I see patients, do ultrasound tests, carry out procedures such as suturing a wound in need, attend meetings, etc. I cannot grasp the whole of this job. . ." P13

" . . . Currently, the number of visits is decreasing because I am studying and working at the same time. Moreover, I have to oversee two other CHCs resulting in less time for one single CHC, which leads to limited contact with patients. . ." P18

Contextual factors. Apart from direct clinical duties, PCPs reported also being responsible for implementing around 18 national vertical programmes in their corresponding communities such as those of immunisation, HIV, dengue fever, and mental health. The surveyed PCPs complained that there was more paperwork than they were able to handle and that these programme reports stole a lot of their time from patient care.

" . . . Too much work has to be done, with various reports per month, including the malaria programme and HIV programme. Tasks just disperse at a CHC, where each programme has to be reported in separate notebooks. . ." P04

Additionally, the PCPs in this study regarded the lack of essential equipment and medication as one of the limiting factors. Despite governmental and NGO project support, some CHCs still lacked necessary equipment such as ECG and ultrasound machines, and those with such equipment lacked a regular maintenance budget. CHC formularies did not include medicines sufficient for treating all types of disease that the PCPs thought they could manage at the primary care level, especially non-communicable diseases such as diabetes and hypertension.

" . . . The medication list doesn't meet the needs of patients with chronic diseases such as hypertension, cardiovascular disease, hyperlipidaemia and asthma. Therefore, more and more patients tend to take other routes of medical treatment. . ." P02

The PCPs also reported on so-called "complicated" reimbursement by health insurance; recent changes in the social health insurance policy like digitising reports or audits requiring

the CHC staff to frequently change the report form or diagnosis and procedure terms, as well as update new software. If anything went wrong with these reports, they would not be reimbursed by the social health insurance.

"...The health insurance company has changed the rules all too often. Last month, they announced a new software update. They have also released more limitations to prescription forms, payment vouchers, complicated reports, types and quantities of medicine..." P18

Lastly, the PCPs in this study lamented their low salary compared to other workplaces. Therefore, outside of their regular business hours some also engaged in other jobs such as farming or providing health care services at home for the elderly. Home care, nevertheless, was not considered an authorized activity for them to receive payment directly from patients.

"...Yes, we do provide home care visits for the elderly. It is a duty to take care of the elderly without expecting any payment in return..." P10

Recommendations. Several suggestions were put forward by the research participants in order to improve the quality of primary care and attract patients back to their health care facilities.

Patient factors. To raise patients' awareness of primary health care and the related services available at CHCs, the PCPs suggested that there should be more mass media campaigns for health promotion and to increase awareness of health care services accessible to patients and local inhabitants. Relevant health stakeholders should support this kind of activity with advertising brochures or television and radio commercials.

"...Let us coordinate with the Department of Information and Communications to spread our messages through television or radio. It should also work better if we combine the medical part with the communication activities of the women's union..." P01

Provider factors. The surveyed PCPs asked for one more GP or preventive doctor if possible, to reduce the workload of the CHCs' leaders and to have a doctor always available for patient care. For the health care providers themselves, PCPs cited the need for frequent knowledge updates as the most important recommendation. PCPs preferred intensive training courses that lasted from only a few days up to three months, focused on common and chronic diseases. This frequent type of training would not only prove suitable for the health care staff's level of expertise but also help minimize time away from work at the CHCs given primary health care workforce shortages. Some PCPs also mentioned the need for training in communication skills and professionalism for all health care providers at CHCs.

"...We should also train the medical staff how to communicate effectively with different subjects such as the elderly or children, how to solve problems, and how to practise mindfulness..." P21

Contextual factors. PCPs recommended having adequate medication for common health problems at CHCs, especially for chronic diseases which require monthly visits. However, they recommended that CHCs should also have more lab tests such as glucose or lipid measurement so that patients would not have to go to upper levels just for these tests. One solution to this issue was sending patients' blood samples, taken at CHCs, to the district hospital for analysis. The results would be sent back to the original CHCs for the PCPs' reference.

...To illustrate, diabetes patients should have a glucose blood test frequently during their treatment period. Unfortunately, we don't do it here, so they tend to go to a hospital more fully equipped with testing methods and medicine. We cannot manage those patients. . ." P12

One PCP suggested combining nearby CHCs into a larger CHC to solve the shortage of human resources and equipment. *"...If we cannot have more staff or equipment, we can combine two or three CHCs in an area to make one big CHC. This new center would serve the local population better as it would have enough doctors and equipment . . ."* P18

Finally, most PCPs raised concern that there is a need for greater subsidies from the government for doctors and other CHC health care staff, which would then aid in attracting more young doctors to work there.

"...The authorities should issue more specific policies to support the medical staff at CHCs. Otherwise, it will be more difficult to engage young doctors because no one wants to work on a low salary, from which they cannot pay their household expenses . . ." P16

Discussion

The objective of this mixed-methods study was to reveal Thua Thien Hue PCPs' perceptions of the quality of their services. PCPs assessed the quality of their primary care and identified key challenges to primary care before suggesting solutions to improve the situation.

Strong and weak points of the CHCs

As CHCs are located in every commune throughout the country, PCPs felt they could manage local health care well and understand patients' cultures and social context, which was a fundamental element of continuous care (ongoing care): a strong patient-doctor relationship built over time. With a known and trusted doctor and without obstacles to communication, good continuous care could lead to positive effects on treatment outcome and health care quality [28]. PCPs in our survey reaffirmed that Ongoing Care and First Contact were the best primary care attributes they performed. On the other hand, our previous PCAT study of consumer experiences showed that CHCs were the most common choice of respondents as a usual source of primary care. In that study, consumers gave CHCs the highest scores for Ongoing Care and First-Contact utilization and the next highest score for First-Contact access in comparison with other types of health care facilities [9]. The consistency of this assessment from both the supply- and demand-sides implies that CHCs are a reliable first-contact point for patients at the primary care level.

PCPs and consumers also share similar assessments of Coordination as the worst performing primary care core domain [9]. Some explanations for this may be that the two-way referral and counter-referral system between the CHCs and upper level facilities still does not exist in Vietnam, and the connection between the private and public sectors is also still weak [29]. The transformation from a paper-based system of the Ministry of Health in Vietnam to an electronic-based one could help to improve the coordination between health care professionals at different levels, leading to better patient management and follow-up, especially for those with chronic diseases [30]. A Chinese study indicated that both primary care physicians and patients regarded Coordination as the weakest dimension of primary care service capacity [31]. Even in high-income countries, a high percentage of primary care physicians reported that they failed to routinely receive timely information from specialists or hospitals [32]. Coordination of care was also identified as the weakest dimension of family medicine in a study

among 34 countries by Pavlič in 2015 [33]. Improving the cooperation and interaction between all levels of care would therefore be crucial for every country to achieve better management at the primary care level.

Challenges and recommendations for primary care in Vietnam

Like in many other developing countries, the lack of essential medication and equipment were identified by doctors in our study as main factors inhibiting high-quality care at the primary care level. Beyond that, there were three central themes of challenges that primary care doctors faced in their daily practice.

The first major obstacle was patients bypassing primary care and choosing to be treated in a more fully equipped hospital at a higher level, or relying solely on pharmacists' advice, or even merely self-treatment. In an earlier consumer survey among 1662 adults living in Central Vietnam, 15.3% and 11.8% of residents utilized high-level hospitals such as provincial or central hospitals and pharmacies (in that order) as sources of primary care [9]. Together with policy changes restricting medication sales without a prescription at pharmacies, primary care doctors suggested that media campaigns on health promotion and CHC services should be launched more frequently. This is consistent with international studies suggesting that because of their wide reach, appeal, and cost-effectiveness, media campaigns have been major tools in health promotion and disease prevention and could result in a modest increase in utilization of health services [34, 35]. With regards to lab tests such as glucose measurement for diabetes management, an interesting recommendation was raised: CHCs could take blood samples and have them delivered to the nearby district health center for analysis. This is also a common practice in Europe and the U.S where many individual primary care practices have laboratory samples analyzed off-site [36–38]. Using this approach, patients would not have to visit upper levels just for more lab tests, offering a partial solution to the current overcrowding at upper levels. The participants also stressed the burden of administrative work, as CHCs were typically equipped with only one PCP, responsible for both administration and clinical care. Doctors in city areas often were in charge of two or even three CHCs. This problem is also common elsewhere in the world [39, 40]. A study conducted by the US Commonwealth Fund in 11 countries indicated that the time required for administrative and other tasks besides patient contact was seen as a significant drawback. Also in Germany, the majority of primary care physicians indicated that the time needed for those activities was “very problematic” [39]. In South Africa a qualitative study with key leaders of the district health system also shared the concern that administrative functions might well overwhelm the clinical role of family physicians [40]. Mitigating CHC leaders' paperwork load was considered by providers as a crucial solution to improving the quality of care by making more time available for patients.

Last but not least, the low income compared with other workplaces was cited as one of the main barriers to providing quality primary care. Poor career benefits such as low income and lack of training opportunities were perceived as a significant obstacle to attracting young physicians to join the primary care system. This issue has been reported in previous studies in Vietnam and other countries suggesting that barriers to recruitment and retention of health care workers at the primary care level may be due to both financial and non-financial factors such as inadequate training, unprofessional work environments, and insufficient remuneration [41–43]. Another study also found that opportunities to attend in-service training for doctors in rural Vietnam was limited due to the shortage of available health care workers to provide coverage [44]. In our study, the majority of PCPs expressed a need for postgraduate training, specifically short-term courses to reorient and sharpen the existing workforce's skills at the primary care level. As was highlighted in a previous review of the roles of, and training

for, primary care doctors in China, India, Brazil and South Africa, quality of primary health care is clearly seen as crucial to obtain the population's trust in these services, and gains in health outcomes. Doctors with postgraduate training in family medicine were noted to play an indispensable role in ensuring this quality as part of a broader primary health care team [45].

Limitations of the study

There were several limitations to this study. First, it was designed only to interview PCPs working in CHCs because CHCs are considered the major source of primary care in Vietnam. On the other hand, for a more diverse picture of primary care quality, future studies could investigate more thoroughly the various types of primary care providers working in the private sector or outpatient clinics of hospitals and other health care stakeholders such as policymakers and the local authorities, as well as the opinions of other health care staff working in CHCs. Also, due to limited resources, the study was carried out among CHC doctors in only one province of Central Vietnam, which might lead to some bias when generalising the study results to the national level. Given the same structure in the health care system of every province in Vietnam and the similar settings, working regulations, policies and investigations across all Vietnamese CHCs, it is nevertheless strongly believed that these research findings can still contribute reliable evidence to primary care more generally in Vietnam.

Conclusions

As the very first research using mixed methods to survey health care providers' perspectives of primary care quality in Vietnam, the present study offers a valuable view from the supply-side of the primary care system, from those who directly deliver primary care services. Along with the earlier study on consumers' evaluation of the Vietnamese primary care system, and literature from other low and middle-income countries, these findings provide emerging evidence for policymakers to improve the quality of primary care in Vietnam. This paper also emphasizes the need for additional research on primary care provision and quality in Vietnam to strengthen the impetus for change.

Supporting information

S1 Dataset. Vietnam PCAT provider data.
(SAV)

S1 Appendix. Guidelines for in-depth interview.
(DOCX)

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Supporting Information Paper 4

Guidelines for In-depth Interview

Primary care quality in Vietnam: Perceptions and opinions of primary care physicians in commune health centers – a mixed-methods study

I. General information

- Name, Gender, Date of birth
- Number of years of practice
- Working place

II. Primary care assessment

- What do you think about primary care quality in general?
 - In your daily practice?
 - What are the strong and weak points?

III. Barriers/Challenges to primary care quality

- According to you, what are barriers in providing good primary care in your daily practice?
 - From the provider yourself (age/training/knowledge/gender...)
 - From the setting (salary/ health insurance company/scope of work...)
 - From the patients (knowledge/wealth level/health problems)

IV. Recommendation and needs

- What should be done to improve the current situation of primary care? At what level? And what is the priority?
 - Policy
 - Staff capacity, number
 - For patients

- Finance

- Health insurance...

- As a primary care doctor, would you like to improve your practice by learning more? What do you want to learn?

- Soft skills, teamwork?

- Management skills?

- Update knowledge

- Manipulation procedure services...

Is there anything else that you want to discuss on this topic, but I have not mentioned above? Please discuss this with me. If not, thank you for your participation.

PART IV:
GENERAL DISCUSSION

1. Summary of the results

This dissertation was designed in a comprehensive approach with the aim to provide an assessment from different sides of the Vietnamese primary care system: users and providers, through validated and reliable instruments for the Vietnamese context. In summary this dissertation can formulate the following main findings:

Phase 1: Development and validation of the primary care assessment tools for use in Vietnam

The Primary Care Assessment Tool (PCAT) is a well-known instrument worldwide. **Phase 1** of this thesis presents the process of development and validation of the Vietnamese PCAT version for users and providers.

Both the Vietnamese adult expanded consumer version of the PCAT (VN PCAT-AE) and the Vietnamese provider version of the PCAT (VN PCAT-PE) retain all nine original scales: six scales representing four core primary care domains, and three additional scales representing three derivative domains.

The VN PCAT-AE includes 70 items; 16 other items from the original tool were removed due to problems with missing values, floor or ceiling effects, and item-total correlations. All scales have a Cronbach's alpha above 0.70 except for the subscale of Family Centeredness.

The VN PCAT-PE includes 116 items. During the translation and cultural adaptation stage, two items were combined, two items were removed and one item was added. Six other items were excluded due to problems in item-total correlations. All items have a low non-response or 'don't know/don't remember' response rate, and there were no floor nor ceiling effects. All scales had a Cronbach's alpha above 0.80, except for the Coordination scale, which still was above the minimum level of 0.70.

Both VN PCAT-AE and VN PCAT-PE demonstrate adequate internal consistency and validity to be used as an effective tool for measuring the quality of primary care in Vietnam from the user and providers' perspective.

Phase 2: Assessment of primary care quality in Central Vietnam from users' and providers' view

Paper 3 shows the quality of primary care in different types of health facilities as experienced by Vietnamese users by using the VN PCAT-AE survey. Commune health centers were associated with the highest overall primary care quality as well as high scores in nearly all individual domains of primary care quality experienced by users compared with other types of facilities. Conversely, private facilities such as private clinics and pharmacies were rated lowest overall. District hospitals and other government hospitals were reported as offering the best quality in comprehensiveness of available services. Polyclinics performed quite well in comprehensiveness of services available and first contact-access but less so in other domains, especially in cultural competency.

Paper 4 shows how primary care physicians (PCPs) working at commune health centers in Vietnam evaluate their performance and their perception of how to improve the situation by a mixed – method study. Among four core domains of primary care, PCPs rated the quality of ongoing care and first contact in CHCs as the best and coordination as the worst performing domain. In regard to challenges that primary care physicians face during their daily practice, three central themes emerged: 1) patient factors such as client attitude and knowledge, 2) provider factors such as the burden of administrative work and lack of training opportunities, and 3) contextual factors such as low income and lack of resources including medicines and diagnostics. Participants recommended more health promotion campaigns in the media, increasing the number of services available at CHCs (such as being able to take blood samples), reducing the workload related to administration for CHC leaders, greater government subsidies, and providing more training courses for PCPs.

2. Strengths and limitations of this work

One of the major strengths of this thesis is that it assessed the primary care performance by surveying both the demand and supply sides' perception. This approach provides a comprehensive and reliable assessment of primary care

performance. Secondly, it measures primary care performance by well-known instruments – PCAT initially developed by John’s Hopkins University, which has been utilized around the world. However, we did not just copy and use the original version into the Vietnamese context. These instruments first experienced a lengthy process of cultural adaptation, development and validation before use. Using the well-validated tools ensures our study results correctly and reliably reflect the participant perception of primary care performance in Vietnam. Finally, the study design of this thesis included both quantitative and qualitative research methods. This approach facilitates insight into the measurement of the primary care assessment.

This study has some limitations related to the study design and sampling method. In the user survey, the samples were not recruited randomly, to purposively capture the diverse characteristics of the population in the Central region. It was a home survey in which the head of household and one additional adult member were surveyed at the time of the visit without a systematic method in place for choosing the additional adult member if more than one might be available, and therefore potentially introducing a source of selection bias. This bias might limit the generalization of our study to the broader population. However, compared with the national population data in some characteristics, our sample is quite similar such as the percentage of male/female (our data: 52,7/47,3 vs national data: 49,2/49) and the percentage of rural/urban residents (our data: 62,8/37,2 vs national data: 63,2/ 36,8). We sought purposively to include a range of different groups, have performed a sensitivity analysis and have a sufficiently large sample size so that the questionnaire as validated here should be fully applicable to a range of different populations within Vietnam. The robustness of the results was explored in different subpopulations such as rural and urban populations, provinces, populations from the CHC consumer’s list and from the community household list. The obtained results are highly stable, however there were a few items that showed a poorer fit in some subpopulations: item C2 and item G2 in Quang Tri province, item G1 in Khanh Hoa province and item G23 in the urban population.

The failure to record precise non-response rates also introduced some lack of clarity about the degree of potential bias in our findings. Non response can affect the

quality of research data as it reduces the effective sample size, resulting in loss of precision of the result [89]. However, surveyors in our study estimated the combined refusal and non response rates at less than 5% which is considered to be acceptable (a response rate of 75% and above is good [90]). Due to limited resources, our effort in exploring users' perception only focused on the quantitative survey. A future research with qualitative design is essential to better understand users' perspectives towards primary care in Vietnam.

With regards to the aim of assessing the primary care quality in different health care settings, we should admit that the number of participants from certain health facilities such as polyclinics, private clinics and pharmacies was quite small in comparison with the number attending CHCs, and therefore may not allow for the most accurate assessment of their users. Our study also is not designed to determine the specific service delivery aspects and activities within each type of facility that may lead to these findings, such as the inclusion of trained family physicians or the presence of specific equipment or medications. Because our sample was limited to users of those communes with a physician working in the local CHC, we also cannot determine if the quality of primary care would be the same in those CHCs staffed without a physician.

Similarly, in the provider survey, the study population was restricted to PCPs working at CHCs. Although they currently are the major resource for providing primary care in Vietnam, there are other PCPs such as private doctors and doctors working in primary care outpatient clinics of some hospitals who should also be surveyed to assure the expected diversity and comprehensiveness of the tool. Also, due to limited resources, the study was carried out among CHC doctors in only one province of Central Vietnam, which might lead to some bias when generalising the study results to the national level. Given the same structure in the health care system of every province in Vietnam and the similar settings, working regulations, policies and investigations across all Vietnamese CHCs, it is nevertheless strongly believed that our research findings can be extrapolated with reliable evidence to primary care more generally in Vietnam.

Finally, in scope of this work, only perception of primary care users and providers were surveyed to assess the primary care quality. Therefore, it was not designed to cover all aspects of the quadruple aims of the primary care assessment such as health care cost effectiveness and outcome.

General discussion and critical interpretation of research findings into the social context and scientific relevance

3.1. Measuring the primary care performance - role of using reliable tools for Vietnam

Vietnam has been conducting a national program for reinforcement and quality improvement of the grassroots networks as well as the health care system in general [29, 91-94]. To assist and guide these investigations effectively as well as evaluate their progress and impact, it is necessary to have an assessment of primary care performance in Vietnam as a baseline data source. Utilising valid and reliable tools would be one of the first crucial steps to achieve precise measurement.

This thesis therefore addresses this need for validated tools in measuring quality of primary care in Vietnam. The availability of the set of VN PCAT-AE and VN PCAT-PE creates the opportunity for a comprehensive assessment of primary care from both key views on the demand – supply relationship of the primary care system in Vietnam: users and providers' experience. The lengthy process of translation, cultural adaptation and validation from 2007 to 2014 as well as the repetition of various important steps allowed to develop a well – constructed and fully adapted tool for assessing the specific primary care setting of Vietnam. During this process, some items were replaced, removed, combined or reworded to ensure items were sufficiently relevant to the Vietnamese context. For example, as the appointment system is not common in Vietnam, many of the items related to appointments were removed from the access domain in the VN PCAT – AE. It is similar to changes in PCAT versions of other countries, with a few items determined not to be appropriate in these settings, and other questions added, considered more relevant to their context [82, 95]. Some PCAT versions were shortened by rearranging items into different scales or adding a scale, like that of primary health care team in the study of Bresick GF. [83]

or subtraction of a scale of First contact access in the study of Yamming Y. [96] with the provider survey. Similarity can be observed in the user survey in the studies of Rocha KB., Aoki T. and Yang H. [87, 97, 98]. However, both VN PCAT versions for user and provider retained the integrity characteristics of the original PCAT version with nine scales including six scales of four core domains and three derivative scales. This way we made sure it preserved the content validity and possibility of future comparison with other studies using the original PCAT tool worldwide. With primary care services in Vietnam improving, however, it is possible that some questions removed from the tool may become more valid in the future as the primary care system becomes more sophisticated and thus future researchers may want to consider reintegrating some of these questions in the tool and reassessing their validity.

Moreover, the adaptation and validation of these two Vietnamese instruments were not carried out completely separate to guarantee the correspondence of the assessment between two key partners of the primary care system. In the last round of adaptation, each equivalent item of the user and provider surveys was checked: this process produced a list of problematic items and proposed solutions. Compared with the original versions, the number of items changed in the VN PCAT - PE is less than in the VN PCAT – AE. In the domains of First contact access and Comprehensive (service available) more items were removed in the VN PCAT – AE than in the VN PCAT - PE (6/12 vs 1/9 and 5/25 vs 1/18 items, respectively). An explanation might be the providers had more knowledge about the items' content and were more aware of the services they were providing compared to the users. This may have reduced the ground effect and the number of "don't know/ don't remember" as well as the number of missing answers.

Assessment of the primary care performance in Central Vietnam from the users and providers' perspectives

View point from the users' perspectives: users of different health care facilities

The results of paper 3 show that, besides CHCs and district hospitals, Vietnamese habitants also visit other health care settings such as provincial or central

hospitals, private clinics or even pharmacies as their usual source of care. So, were there any differences in primary care services quality in these settings, between primary care level and secondary or tertiary care, private sector such as pharmacy store and private clinic? By assessing the surveyed users of these health care settings, we found that CHCs not only had the highest utilization rate, but they also had the highest quality scores and overall highest primary care rankings in comparison with all other health facilities providing primary care services in Vietnam. These findings again advocate to many recent efforts of improvements on both infrastructure and staff quality at the primary level – CHCs [92, 99, 100]. Compared with other health care places, CHCs were rated as the highest scores and high scores in most of the domains and subdomains of primary care such as first contact utilization, ongoing care, coordination, family centeredness and community orientation. This is consistent with previous research in China showing patient experiences with CHCs suggested equal or better primary care quality when compared with other health care providers, supporting the appropriateness of the CHC delivery model in providing primary care to entire populations [101]. It affirmed government investments in CHCs is a rational and worthy strategy to improve overall health and well-being for everyone in Vietnam.

One of the current major concerns of the government as well as policy makers in health care is the overcrowding at the higher level hospitals. Many users bypass CHCs or other primary care facilities in preference of tertiary care hospitals with the expectation that such hospitals offer better quality due to more technological resources and a wider range of services. However, our results found that hospitals performed worse than CHCs in most attributes of primary care. While hospitals rated better in comprehensiveness of available services than CHCs, they scored worse in all other domains including the comprehensiveness of services provided. Our finding is consistent with other existing data from China and U.S. suggesting that hospitals and subspecialists are more likely to provide lower quality primary care than trained frontline providers [102, 103]. Therefore, one of the solutions for the overcrowding at the higher level hospital is improving the quality of the primary care level, especially the CHCs as mentioned in the government program for reducing overcrowding at

hospitals which was implemented since 2013 [104]. Building trust of population in PCPs and services at CHCs is essential.

Another concern is the first-contact care-seeking behaviour by peoples using pharmacies as the usual source of care without a doctor's prescription still being a common practice. People simply self-treat based on advice from prior provider encounters or family members or may just solicit advice from the pharmacist, rather than enduring long waits at more traditional primary care facilities. A study in rural Vietnam shows that one third of survey households stocked drugs including antibiotic for anticipated illness in the future and the self medication group was twice as likely to use antibiotics than the remaining groups [105]. Despite this, users' experiences in our study suggest pharmacies provide the lowest overall primary care quality as they lack a number of the essential elements and services associated with high quality primary care. Given this finding, the Vietnamese government may want to consider possible interventions to limit this practice as well as other health care seeking behaviour such as going for a lab-test, X-ray or CT-scan freely without referral letter. It would be helpful to strengthen the gatekeeping role of the commune health centers.

View point from the providers' perspectives: PCPs at commune health centers

This thesis provides important knowledge of understanding how the major resource of primary care providers in Vietnam – physicians working at the CHCs – perceived primary care performance at their working places. Similar to the assessment by users, PCPs self rated Ongoing Care and First Contact as the best primary care attributes they performed (figure 4). The consistency of this evaluation from both the supply- and demand-sides implies that CHCs are a reliable first-contact point for users at the primary care level. The 11,000 CHCs network, with the same structure and function, distributed to every commune throughout the country provides a wide variety of primary care services to care for all people of all ages in the community. These characteristics makes CHCs easier in access and utilisation when people have health care needs, compared with other health care facilities. Vietnam is a multi-ethnic country, made up of 54 ethnic groups with eight groups of languages and a diversity in cultures. As CHCs are placed in the community, their staff could well understand their

users' culture and social context. It is a core component for the strong relationship between doctor, health care staff and patient over time. With a well-known source of care and without any communicative obstacles, good continuous care could lead to positive effects on treatment outcome and health care quality [106].

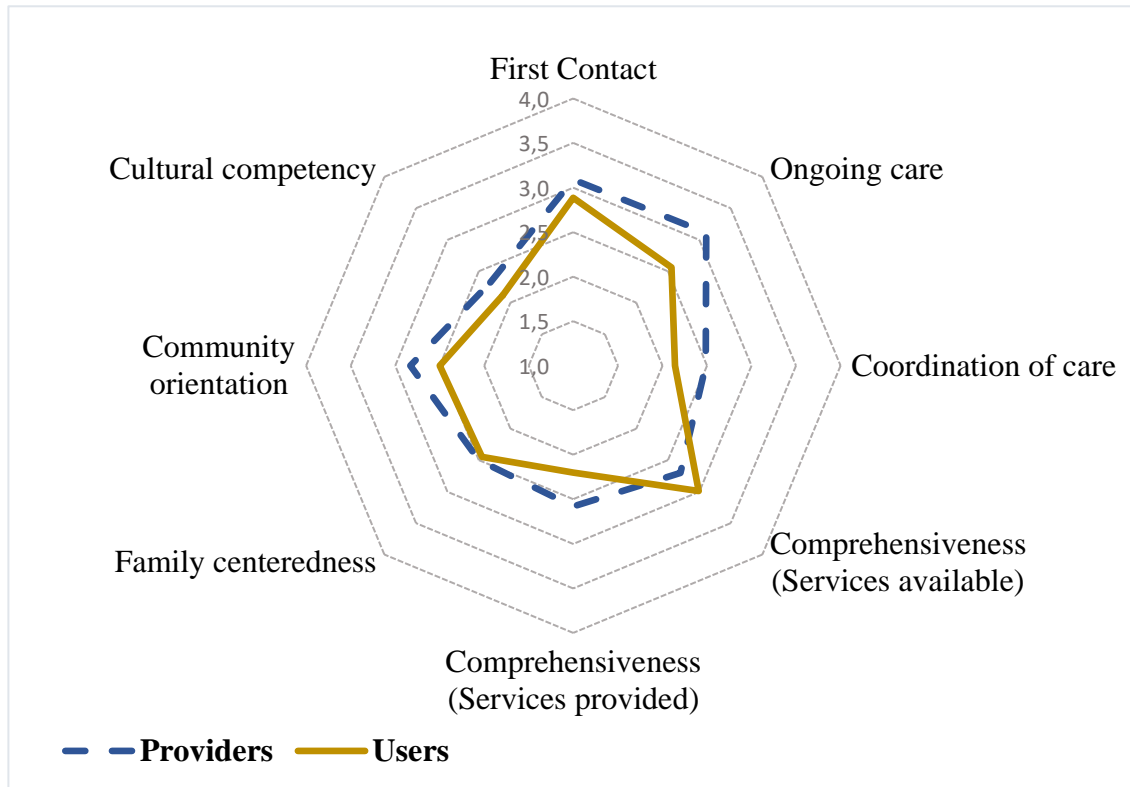


Figure 4. Primary care performance at CHCs from the users and providers' perspectives

Data used in this figure was extracted from data in paper 3 and paper 4: the users (paper 3, First Contact score = mean score of First Contact Utilization and First Contact Access subdomain); the providers (paper 4, Coordination of care = mean score of Coordination of care – information system and Coordination of care subdomain)

Both users and providers considered the Coordination domain as the poorest performance of CHCs. When patients need to be referred to an upper level, they will go with a referral letter from the initial health facilities such as CHCs, but there is no incentive to return back to their referring CHC in Vietnam. CHCs rarely get further information when their patients have been with specialists, hospitalized or discharged. This does not only occur in the public area but also between the public and private sector. Moreover, this is

not only a Vietnamese phenomenon: most primary care physicians in high income countries report that they fail to routinely receive timely information from specialists or hospitals [107]. A study in 34 countries in 2015 also identified Coordination as the weakest dimension of family medicine [108]. Improving the cooperation and interaction between all levels of care would therefore be crucial for every country to achieve better management at the primary care level.

Challenges and recommendations for primary care in Vietnam from an inside view

As the direct source and the first contact point of health care setting, PCPs in our study perceived certain challenges that they face during their daily practice and suggested some practical solutions to overcome them. Working at the lowest level of the health care system, with limited resources, PCPs expressed challenging factors from their working environment such as the burden of administrative work and poor career benefits. Although CHCs are equipped with five to seven health care staff, most of the CHCs have only one PCP who is responsible for both administration and clinical care. The surveyed PCPs complained that there was more paperwork than they were able to handle and that this administrative work stealed a lot of their time from patient care. The situation is similar elsewhere in the world [109, 110]. In South-Africa a qualitative study with key leaders of the district health system shared the concern that administrative functions might well overwhelm the clinical role of family physicians [110]. PCPs from developed countries such as Australia, Canada, France, Germany, Italy, the Netherlands, New Zealand, Norway, Sweden, the UK, and the USA also reported that the time required for administrative and other tasks besides patient contact was seen as a significant drawback [109]. Mitigating CHC leaders' paperwork load was considered by providers as a crucial solution to improving the quality of care by making more time available for users.

Investigation on PCPs qualifications or provide more PCPs where there is a shortage, is necessary to strengthen the quality of CHCs. Moreover, poor career benefits such as low income and lack of training opportunities compared with colleagues in other working places were perceived as a weighty barrier to attracting young physicians to join the primary care system. The majority of PCPs stated a need

for postgraduate training, specifically short-term courses to reorient and sharpen the existing workforce's skills at the primary care level. As was highlighted in a previous review, on the roles of, and training for primary care doctors, quality of primary health care is clearly seen as crucial to obtain the population's trust in these services, and gains in health outcomes. Doctors with postgraduate training in family medicine or general practice were noted to play an indispensable role in ensuring this quality as part of a broader primary health care team [111].

As discussed, the bypassing behaviour or obtaining medication from pharmacists without doctors' prescription is still common in Vietnam and it was perceived as a major challenge for PCPs working at CHCs. Why does it happen? A possible reason is the lack of essential medication and equipment as reported by PCPs. However, it is also affected by users knowledge about services available at CHCs, and their health literacy. If patients are uncertain about the severity of their condition or complexity of their care needs, it may impact patient perception and choice of health facility. Therefore, next to improving the resources such as medication, equipment or necessary lab test for CHCs, primary care doctors also suggested that media campaigns on health promotion and CHC services should be launched more frequently. For more comprehensive management of common health care problems, PCPs recommended that taking blood samples such as a glucose test, liver or kidney function test etc. could be taken at CHCs and then delivered to the nearby district health center for analysis. Using this approach, users would not have to visit upper levels just for a lab tests, offering part of a solution for the current overcrowding at the upper levels.

Broad relevance of the work and future outlook

Relevance for health policy

While the Vietnamese government has been investigating to reinforce the primary care quality, there is now a set of reliable and valid tools that can be used to assess the quality of primary care. These tools reflect assessment from two key partners of the health system: users and providers and provide a comprehensive view point. They can facilitate quality improvement efforts in Vietnam by using them in

measuring baseline primary care performance, identifying existing gaps, evaluating progress and impact of interventions.

Although users have different choices of health care resources, remarkable findings from this thesis confirm the recent efforts of the government in promoting commune health centers as the high quality first contact entry for the population. Substantial efforts are needed to strengthen the gatekeeping position of CHCs. Data from this thesis point out necessary priorities which include boosting the current advantages of CHCs like First Contact care and continuous care. Improving the weak points such as coordination of care among different levels of health providers is another key priority. Continuing to upgrade human resources such as providing re-training courses, new recruitment for sites dealing with a personnel shortage, adjustment of policy about working allowance and the upgrade of equipment might be appropriate interventions. Relevant positive policy changes by the government have been observed recently. Near the end of 2019, the Ministry of Health approved a plan for deployment of electronic health records (EHRs) [112]. The goal by 2025 is to reach a rate of 95% of the population nationwide to have an EHR with regularly updated information. This EHR should also be connected and accessible among all health care facilities across the country. This transformation from a paper-based system to an electronic-based one could help to improve the coordination between health care professionals at different levels, leading to better patient management and follow-up. A new program called Telehealth was just launched in September 2020. It is a remote health care consultation and support network that connects 1000 health care facilities from CHCs to central or end-line hospitals. By this program, the Ministry of Health intends people across the country to have higher quality medical services at grass-roots level while minimising hospital overloading [113].

Relevance for education

Results from this thesis should be taken into account when considering how to design and provide training courses for PCPs. As PCPs cited the need for frequent knowledge updates as the most important recommendation. Content might contain topics related to reorient common problems and sharpen the existing workforce's

skills such as the services they are allowed to perform at the primary care level. Communication skills and professionalism are also needed as it may affect users' satisfaction. PCPs preferred intensive training courses that lasted from only a few days up to three months. This type of training would not only prove suitable for the health care staff's level of expertise but also help minimize time away from work at the CHCs given primary health care workforce shortages. Blended learning combining web-based modules, online lectures and face-to-face learning might be suitable course designs for these target learners.

Relevance for research

The primary care assessment tool PCAT is a well-known instrument and utilized around the world. Now that the full adapted and validated versions of both the user and provider surveys are available in Vietnamese, more international comparison of measurement in different primary care settings will be possible. Although existing instruments for assessments in low and middle income countries are inadequate, the lengthy process of cultural adaptation and validation of our VN PCAT implicates that tools borrowed from developed countries such as the U.S. may not be applicable for other countries directly after translation. It is not only the difference in languages but also differences in the cultural values, and the structural context between western and eastern society that could affect the validity of the measurement. On the other hand, as VN PCAT – AE and VN PCAT – PE are well validated for Vietnam – an Asian developing country, these versions can be used in the other countries in the South East Asian region which have a similar situation.

Future outlook

This study raises several issues that future research could focus on. Firstly, an assessment of primary care performance using VN PCAT – AE and VN PCAT – PE on a national scale would be vital to have the whole picture of primary care performance in Vietnam. Secondly, although PCPs working at CHCs are the major resource providing primary care services for the population, these assessments should include PCPs who are working in other health care facilities in the public and in the private sector.

Furthermore, other key partners of the health care systems beside users and providers are the leaders and policy makers at different levels. It is essential to explore their macro views as well as solutions to improve the current primary care performance. Last but not least, to enable the comparison capacity of primary care assessment among other countries in the region, it would be helpful to develop a regional version of PCAT for Asia or South East Asia. Future cooperation in primary care research and training among countries in the region could facilitate this direction.

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SUMMARY

SUMMARY

Measuring the performance of a primary care system is one of the very first critical steps to identify the room for improvement. However, to obtain an objective and comprehensive view, this evaluation should come from all sides of the system: demand (users) and supply side (health care professionals).

The overall objective of this dissertation is to contribute a comprehensive assessment of the primary care quality of Central Vietnam. It aimed to provide an evaluation from different views of the primary care system (i.e. users and providers) through validated and reliable instruments for use in Vietnam. Different research methods were used to address this goal in two phases: Phase 1: Development and validation of the primary care assessment tools for use in Vietnam; and Phase 2: Assessment of primary care quality in Central Vietnam from users and providers' view.

Phase 1: Development and validation of the primary care assessment tools for use in Vietnam

It is crucial to utilise valid and reliable tools in the assessment of primary care quality to achieve an accurate measurement. There are a variety of tools for measuring the performance of the primary care system. However, the Primary Care Assessment Tool (PCAT) developed by Barbara Starfield at the Johns Hopkins Primary Care Policy Center focuses on the core principles of primary care and is one of the few tools designed to assess both structural and process features of primary care. Given the proven utility of the tool worldwide, we presumed it to be a useful tool to gauge the quality of primary care as an emerging component of the healthcare system in Vietnam. **Phase 1** of this dissertation presents the process of development and validation of the Vietnamese PCAT version for users and providers (**Paper 1 and Paper 2**).

The translation and cultural adaptation were carried out strictly applying standardized guidelines from Johns Hopkins Primary Care Policy Center. Afterwards, the validation studies were performed on the data of 3289 users and 150 primary care physicians (PCPs).

Our result shows that both the expanded Vietnamese adult consumer version of the PCAT (VN PCAT-AE) and the Vietnamese provider version of the PCAT (VN PCAT-PE) retain all nine original scales: six scales representing four core primary care domains and three additional scales representing three derivative domains. The VN PCAT-AE included 70 items and all scales had a Cronbach's alpha above 0.70 except for the subscale of Family Centeredness. The VN PCAT-PE included 116 items and all scales had a Cronbach's alpha above 0.80, except for the Coordination scale, which still was above the minimum level of 0.70.

Following these results, we can conclude that both VN PCAT-AE and VN PCAT-PE demonstrate adequate internal consistency and validity to be used as an effective tool for measuring the quality of primary care in Vietnam from the perspective of both users and providers.

Phase 2: Assessment of primary care quality in Central Vietnam from users' and providers' view

The Vietnamese government has been investigating to reinforce the primary care quality as well as the health care system in general. To assist and guide these investigations effectively as well as to evaluate their progress and impact, it is necessary to have a measurement of primary care performance in Vietnam as a baseline data source. **Phase 2** of this dissertation presents the assessment of primary care quality in Central Vietnam from users' and providers' view (**Paper 3 and Paper 4**).

In **Paper 3**, we examined whether there are differences in the quality of primary care provided by different types of health facilities as experienced by Vietnamese users, using the VN PCAT-AE. Analysis was performed on the data of 1662 people who utilized primary health care services at least once over the past two years in various types of facilities in central Vietnam. Our results showed that commune health centers (CHCs) were associated with the highest overall primary care quality as well as high scores in nearly all individual domains of primary care quality experienced by users compared with other types of facilities. Conversely, private facilities such as private clinics and pharmacies were rated lowest overall. District hospitals and other

government hospitals were reported as offering the best quality in comprehensiveness of available services. Polyclinics performed quite well in comprehensiveness of services available and first contact-access but less so in other domains, especially in cultural competency.

Based on these findings, we can conclude that the high quality of primary care services experienced by users in CHCs compared with other facilities gives Vietnam ample reason to promote greater use of these community-based primary care facilities. Populations may benefit most from building and strengthening grassroots networks of such community-based health centers as an effective solution for overcrowding at hospitals while simultaneously providing better overall health outcomes.

In **Paper 4**, we explored how PCPs working at CHCs in Vietnam evaluate their performance and their perception of how to improve the situation. For this purpose, a mixed-methods study was conducted: a quantitative study using the VN PCAT-PE with 150 PCPs and a qualitative study consisting of in-depth interviews with 22 PCPs aiming to better understand the results of the quantitative survey and gain insight on barriers of primary care services and how to overcome them. We found that, among four core domains of primary care, PCPs rated the quality of ongoing care and first contact in CHCs as the best and coordination as the worst performing domain. In regard to challenges that PCPs face during their daily practice, three central themes emerged: 1) patient factors such as client attitude and knowledge, 2) provider factors such as the burden of administrative work and lack of training opportunities, and 3) contextual factors such as low income and lack of resources including medicines and diagnostics. Participants recommended more health promotion campaigns in the media, increasing the number of services available at CHCs (such as being able to take blood samples), reducing the workload related to administration for CHC leaders, greater government subsidies, and providing more training courses for PCPs.

This was the first study using mixed methods to examine the health care providers' perspectives of primary care quality in Vietnam. The present study offers a valuable view from the supply-side of the primary care system, from those who

directly delivery primary care services. Additional research on primary care provision and quality in Vietnam to strengthen the impetus for change is necessary.

Conclusion

This dissertation delivers a valid and reliable tool set - VN PCAT-AE and VN PCAT-PE to measure the quality of primary care from the perspective of both users and providers in Vietnam. A combined use of these tool allows to examine the primary care performance on a comprehensive manner, which allows to identify the gap in views between primary care users (demand side) and providers (supply side) in Vietnam.

Furthermore, this research project provides a very first valuable evaluation of the primary care performance in Central Vietnam by investigating both the demand and supply sides' perception. Remarkable findings from this thesis confirm the recent efforts of the government in promoting CHCs as the high-quality first contact entry for the population. Along with the literature from other low and middle-income countries, these findings offer emerging evidence for policymakers to improve the quality of primary care in Vietnam. To get the full picture of primary care performance in Vietnam, future research should investigate on a national scale and survey other key partners of the health care systems such as the leaders and policy makers at different levels.

SAMENVATTING

Het meten van de prestaties van het zorgsysteem is één van de allereerste cruciale stappen om mogelijke ruimtes voor verbetering te bepalen in de eerstelijnszorg. Om een objectief en alomvattend beeld te krijgen, is het essentieel dat dergelijke evaluatie rekening houdt met de visie van de verschillende belanghebbenden, namelijk: de vraag (gebruikers) en de aanbodzijde (zorgverstrekkers).

De algemene doelstelling van deze thesis is om bij te dragen tot een alomvattende beoordeling van de kwaliteit van de eerstelijnszorg in Centraal-Vietnam. Meer precies omvat deze een evaluatie vanuit zowel de visie van patiënten als van zorgverstrekkers aan de hand van gevalideerde en betrouwbare instrumenten voor gebruik in Vietnam. De gebruikte onderzoeksmethoden kunnen worden onderverdeeld in twee fasen: fase 1: Ontwikkeling en validatie van de beoordelingsinstrumenten ter gebruik in de eerstelijnszorg in Vietnam; en fase 2: beoordeling van de kwaliteit van de eerstelijnszorg in Centraal-Vietnam vanuit het standpunt van patiënten en zorgverstrekkers.

Fase 1: Ontwikkeling en validatie van de beoordelingsinstrumenten ter gebruik in de eerstelijnszorg in Vietnam

Het gebruik van valide en betrouwbare instrumenten bij de beoordeling van de kwaliteit van de eerstelijnszorg is essentieel om nauwkeurige metingen te bekomen. Er zijn verschillende instrumenten om de performantie van de eerstelijnszorg te meten. De Primary Care Assessment Tool (PCAT), ontwikkeld door Barbara Starfield van het Johns Hopkins Primary Care Policy Center, richt zich op de kernprincipes van de eerstelijnszorg en is een van de weinige instrumenten die toelaat om zowel structurele als proceskenmerken van eerstelijnszorg te beoordelen. Gezien het bewezen nut van de tool wereldwijd, gingen we ervan uit dat het een geschikt instrument was om de kwaliteit van de eerstelijnszorg te meten als een opkomend element van het gezondheidszorgsysteem in Vietnam. Fase 1 van dit proefschrift geeft het proces van

ontwikkeling en validatie van de Vietnamese PCAT-versie voor gebruikers en providers weer (**Paper 1 en Paper 2**).

De vertaling van de tool en culturele aanpassingen werden uitgevoerd onder strikte toepassing van gestandaardiseerde richtlijnen van het Johns Hopkins Primary Care Policy Center. De validatiestudies werden nadien uitgevoerd op de gegevens van 3289 patiënten en 150 Vietnamese huisartsen (PCPs).

De resultaten toonden aan dat zowel de uitgebreide Vietnamese volwassen versie van PCAT voor volwassen gebruikers (VN PCAT-AE) als de Vietnamese versie van PCAT voor zorgverstrekkers (VN PCAT-PE) de negen originele schalen van het instrument behouden. Dit impliceert enerzijds zes schalen die vier kerndomeinen van de eerstelijnszorg omvatten en anderzijds drie bijkomende schalen die drie afgeleide domeinen ervan voorstellen. De VN PCAT-AE bevatte 70 items en de schalen hadden een waarde van Cronbach's alpha hoger dan 0,70 met uitzondering van de subschaal Family Centeredness. De VN PCAT-PE daarentegen, telde 116 items. Hierbij hadden de schalen een waarde van Cronbach's alpha hoger dan 0,80, behalve de coördinatieschaal. Ook deze schaal kwam boven de grenswaarde van 0,70 uit.

Uit deze resultaten kunnen we concluderen dat zowel VN PCAT-AE als VN PCAT-PE voldoende interne consistentie en validiteit vertonen om te worden gebruikt als een effectief instrument voor het meten van de kwaliteit van de eerstelijnszorg in Vietnam vanuit het perspectief van de gebruikers als van de zorgverstrekkers.

Fase 2: Beoordeling van de kwaliteit van de eerstelijnszorg in Centraal-Vietnam vanuit het standpunt van patiënten en zorgverstrekkers

De Vietnamese regering heeft reeds onderzoek verricht om de kwaliteit van de eerstelijnszorg en het gezondheidszorgsysteem in het algemeen te bevorderen. Om deze onderzoeken effectief te ondersteunen en te begeleiden, maar ook om de voortgang en de impact ervan te evalueren, is het noodzakelijk om een meting van de eerstelijnszorg in Vietnam als bron van basisgegevens te hebben. Fase 2 van dit proefschrift stelt de beoordeling van de kwaliteit van de eerstelijnszorg in Centraal-Vietnam voor vanuit de visie van gebruikers en zorgverleners (**Paper 3 en Paper 4**).

In **Paper 3** hebben we met behulp van de VN PCAT-AE nagegaan of er verschillen zijn in de kwaliteit van de eerstelijnszorg die wordt verleend naargelang het type gezondheidsinstelling volgens de opinie van Vietnamese gebruikers. Analyses werden uitgevoerd op een steekproef van 1662 patiënten die de afgelopen twee jaar minstens één keer gebruik hebben gemaakt van eerstelijnsgezondheidszorg in verschillende soorten faciliteiten in Centraal-Vietnam. Onze resultaten toonden bij een vergelijking van de voorzieningen aan dat de ‘community health centers’ (CHCs) geassocieerd waren met de hoogste algemene kwaliteit van de eerstelijnszorg en met hoge scores in bijna alle individuele domeinen van de eerstelijnszorg die door gebruikers worden ervaren. Verder kenden privévoorzieningen zoals privéklinieken en apotheken over het algemeen de laagste beoordeling. Districts- en andere overheidsziekenhuizen behaalden de beste score in de kwaliteit qua omvang van de beschikbare diensten. Poliklinieken presteerden vrij goed wat betreft de omvang van de beschikbare diensten en de toegang tot het eerste contact, maar minder in andere domeinen voornamelijk in kader van culturele competenties.

Uit deze bevindingen kunnen we besluiten dat de hoge kwaliteit van de eerstelijnszorg die gebruikers in CHCs ervaren in vergelijking met andere voorzieningen, voldoende argumenten voorziet voor een hoger gebruik van gemeenschapsgerichte eerstelijnsvoorzieningen in Vietnam. De bevolking kan het meeste baat hebben in het opbouwen en het versterken van basisnetwerken van dergelijke gemeenschapsgerichte gezondheidscentra als een effectieve oplossing voor de overbevolking in ziekenhuizen en tegelijkertijd betere algemene gezondheidsresultaten opleveren.

In **Paper 4** hebben we onderzocht hoe Vietnamese PCPs die in CHCs werken hun prestaties evalueren en hoe ze de situatie kunnen verbeteren. Hiervoor werd een ‘mixed-method study’ uitgevoerd. Dit impliceert enerzijds een kwantitatieve studie met behulp van de VN PCAT-PE bij 150 PCPs en anderzijds een kwalitatieve studie bestaande uit diepte-interviews met 22 PCPs ter verdieping om de resultaten van het kwantitatieve luik beter te begrijpen en meer inzicht te verkrijgen in de belemmeringen van eerstelijnszorg en hoe deze kunnen worden overwonnen. De

resultaten toonden aan dat PCPs de kwaliteit van transmurale zorg en het eerste contact bij CHCs als het beste beoordeelden van de vier kerndomeinen van de eerstelijnszorg. Coördinatie daarentegen, kende een lage beoordeling. Omtrent de uitdagingen waarmee huisartsen in de dagelijkse praktijk worden geconfronteerd, kwamen drie centrale thema's naar voren: 1) patiëntgerelateerde factoren zoals attitude en kennis, 2) factoren gerelateerd aan de zorgverstreker zoals administratieve lasten en een gebrek aan opleidingsmogelijkheden, en 3) contextuele factoren zoals laag inkomen en gebrek aan middelen, waaronder medicijnen en diagnostiek. Deelnemers raadden onder meer meer gezondheidspromotiecampagnes in de media aan, het verhogen van het aantal beschikbare diensten bij CHCs (zoals het kunnen nemen van bloedstalen), het verlagen van de werkdruk met betrekking tot administratie voor CHC-leidinggevenden en tot slot het voorzien van meer overheidssubsidies en trainingscursussen voor PCPs.

Deze studie is de eerste die via een 'mixed-method' studie de perspectieven van zorgverstrekkers omtrent de kwaliteit van de eerstelijnszorg in Vietnam heeft onderzocht. Uit de resultaten van de huidige studie volgt dat het een waardevol beeld biedt vanuit het standpunt van gebruikers van de eerstelijnszorg en van de zorgverstrekkers. Aanvullend onderzoek naar de eerstelijnszorg en kwaliteit van zorg in Vietnam is essentieel om de motivatie voor verandering te versterken.

Conclusie

Dit proefschrift levert een degelijke en betrouwbare toolset op, de VN PCAT-AE en VN PCAT-PE, om de kwaliteit van de eerstelijnszorg te meten vanuit het perspectief van de gebruiker en zorgverstreker in Vietnam. Combinatie van beide instrumenten kan de prestaties van de eerstelijnszorg uitvoerig onderzoeken en mogelijk de kloof in opvattingen tussen patiënten ('vraagzijde') en zorgverstrekkers ('aanbodzijde') in Vietnam te identificeren.

Bovendien leverde dit onderzoeksproject als allereerste een waardevolle evaluatie op van de eerstelijnszorg in Centraal-Vietnam door de perceptie van beide perspectieven te onderzoeken. Opmerkelijke bevindingen van dit proefschrift

bevestigen de recente inspanningen van de regering om CHCs te promoten evenals het kwaliteitsvolle eerste zorgcontact voor de bevolking. In combinatie met de literatuur uit andere lage- en gemiddelde inkomenslanden bieden deze bevindingen nieuw bewijsmateriaal voor beleidsmakers om de kwaliteit van de eerstelijnszorg in Vietnam te verbeteren. Om een volledig beeld te krijgen van de prestaties van de eerstelijnszorg in Vietnam, moet toekomstig onderzoek gericht zijn op een nationale schaal en moeten andere belangrijke actoren van het gezondheidssysteem zoals de leiders en beleidsmakers op verschillende niveaus geïncorporeerd worden.

TÓM TẮT

Đánh giá chất lượng hệ thống chăm sóc ban đầu là một trong những bước quan trọng đầu tiên để xác định phạm vi cần cải thiện. Tuy nhiên, để đạt được một cái nhìn khách quan và toàn diện, cần có đánh giá từ nhiều phía của hệ thống: người sử dụng dịch vụ (bệnh nhân) và người cung cấp dịch vụ (bác sĩ, nhân viên y tế).

Mục tiêu chung của luận án là đưa ra một đánh giá toàn diện về chất lượng chăm sóc ban đầu của miền Trung Việt Nam. Luận án cung cấp đánh giá từ các quan điểm khác nhau về hệ thống chăm sóc ban đầu: người sử dụng dịch vụ và nhà cung cấp dịch vụ thông qua các công cụ đã được chuẩn hóa và đáng tin cậy để sử dụng tại Việt Nam. Nghiên cứu được tiến hành qua hai giai đoạn, áp dụng nhiều phương pháp nghiên cứu khác nhau: Giai đoạn 1: Phát triển và chuẩn hóa hai bộ công cụ đánh giá chất lượng chăm sóc ban đầu tại Việt Nam; và Giai đoạn 2: Đánh giá chất lượng chăm sóc ban đầu ở miền Trung Việt Nam từ quan điểm của khách hàng và người cung cấp dịch vụ.

Giai đoạn 1: Phát triển và chuẩn hóa hai bộ công cụ đánh giá chất lượng chăm sóc ban đầu tại Việt Nam

Sử dụng các công cụ đã được chuẩn hóa và đáng tin cậy trong việc đánh giá chất lượng chăm sóc ban đầu là một trong những điều quan trọng để đạt được phép đo chính xác nhất. Có nhiều bộ công cụ để đo lường các thành tố của chăm sóc ban đầu. Một trong số đó là bộ công cụ đánh giá chất lượng chăm sóc ban đầu (Primary Care Assessment Tool - PCAT) do Giáo sư Barbara Starfield, trung tâm Chính sách Chăm sóc Ban đầu Trường đại học Johns Hopkins phát triển. PCAT tập trung vào các nguyên tắc cốt lõi của chăm sóc ban đầu và là một trong số ít công cụ được thiết kế để đánh giá các đặc điểm cấu trúc và quy trình của chăm sóc ban đầu. Với việc được sử dụng rộng rãi trên toàn thế giới của bộ công cụ này, chúng tôi tin rằng PCAT sẽ là một bộ công cụ hữu ích để đánh giá chất lượng chăm sóc ban đầu ở Việt Nam. **Giai đoạn 1** của nghiên cứu này trình bày quá trình phát triển và chuẩn hóa phiên bản PCAT tiếng Việt cho người sử dụng và nhà cung cấp dịch vụ (**Bài báo 1 và Bài báo 2**).

Quy trình dịch và Việt hóa phiên bản Tiếng Việt của bộ công cụ tuân thủ chặt chẽ hướng dẫn sử dụng bộ công cụ đánh giá chất lượng chăm sóc ban đầu Primary care assessment tools (PCAT) của Trung tâm Chính sách Chăm sóc Ban đầu, Trường đại học Johns Hopkins. Tiếp theo đó, chúng tôi tiến hành các nghiên cứu chuẩn hóa trên dữ liệu của 3289 người sử dụng dịch vụ (bệnh nhân) và 150 bác sĩ đa khoa công tác tại Trạm y tế.

Kết quả nghiên cứu cho thấy phiên bản tiếng Việt dành cho người sử dụng (VN PCAT-AE) và dành cho nhà cung cấp dịch vụ (VN PCAT-PE) đều giữ nguyên được cả chín mục như bản gốc: 6 mục đại diện cho bốn thành tố cốt lõi của chăm sóc ban đầu, và ba mục bổ sung đại diện cho ba thành tố mở rộng của chăm sóc ban đầu. VN PCAT-AE bao gồm 70 tiểu mục và tất cả 9 mục đều có hệ số Cronbach's alpha trên 0,70 ngoại trừ mục Chăm sóc hướng gia đình 0.68. VN PCAT-PE bao gồm 116 tiểu mục và tất cả 9 mục đều có hệ số Cronbach's alpha trên 0.80, ngoại trừ mục Chăm sóc phối hợp 0.70 (nhưng vẫn trên mức tối thiểu).

Từ những kết quả này, chúng tôi có thể kết luận rằng cả VN PCAT-AE và VN PCAT-PE đều có độ nhất quán và chuẩn xác cao. Đây là hai bộ công cụ hiệu quả để đánh giá chất lượng chăm sóc ban đầu tại Việt Nam từ góc độ người sử dụng và nhà cung cấp.

Giai đoạn 2: Đánh giá chất lượng chăm sóc ban đầu ở miền Trung Việt Nam từ quan điểm của người sử dụng dịch vụ và nhà cung cấp dịch vụ

Chính phủ Việt Nam đã và đang ban hành nhiều chính sách quan trọng nhằm tăng cường chất lượng mạng lưới y tế cơ sở cũng như hệ thống chăm sóc sức khỏe nói chung. Để hỗ trợ và hướng dẫn các can thiệp này một cách hiệu quả cũng như đánh giá tiến độ và tác động của chúng, cần phải có một đo lường chất lượng của các dịch vụ chăm sóc ban đầu ở Việt Nam như một nguồn dữ liệu cơ bản. **Giai đoạn 2** của nghiên cứu này trình bày kết quả đánh giá chất lượng chăm sóc ban đầu ở miền Trung Việt Nam từ quan điểm của người sử dụng và nhà cung cấp dịch vụ (**Bài báo số 3 và Bài báo số 4**).

Trong **Bài báo số 3**, chúng tôi đã so sánh sự khác biệt về chất lượng chăm sóc ban đầu tại các loại cơ sở y tế khác nhau theo trải nghiệm của người dân Việt Nam. Nghiên cứu sử dụng bộ câu hỏi VN PCAT-AE, khảo sát và phân tích kết quả trên dữ liệu

của 1662 người đã sử dụng các dịch vụ chăm sóc sức khỏe ban đầu ít nhất một lần trong hai năm trước thời điểm nghiên cứu tại nhiều loại hình cơ sở khác nhau ở miền Trung Việt Nam. Kết quả của chúng tôi cho thấy người dân đánh giá chất lượng chăm sóc ban đầu tại trạm y tế xã (TYT) cao nhất so với các loại hình cơ sở y tế khác. Trạm y tế cũng được đánh giá thực hiện tốt trong hầu hết các thành tố chăm sóc ban đầu. Ngược lại, người dân đánh giá chất lượng chăm sóc ban đầu tại các cơ sở tư nhân như phòng khám tư và nhà thuốc ở mức kém nhất về tổng thể. Về hệ thống bệnh viện, chất lượng chăm sóc ban đầu của phòng khám ngoại trú của bệnh viện/ trung tâm y tế huyện và các loại hình bệnh viện công khác được đánh giá tốt nhất về tính toàn diện của các dịch vụ sẵn có. Phòng khám đa khoa khu vực thực hiện khá tốt đặc điểm chăm sóc toàn diện – dịch vụ sẵn có và chăm sóc tiếp xúc đầu tiên nhưng kém ở các đặc điểm khác, đặc biệt kém nhất về đặc điểm tiếp cận dựa trên phương diện văn hoá.

Từ những kết quả này, có thể kết luận rằng chất lượng chăm sóc ban đầu tại TYT được người dân đánh giá cao so với các cơ sở y tế khác một lần nữa khẳng định lý do để Việt Nam thúc đẩy mạnh mẽ hơn việc sử dụng các cơ sở chăm sóc ban đầu dựa vào cộng đồng – Trạm y tế. Người dân có thể được hưởng lợi nhiều nhất từ việc xây dựng và củng cố mạng y tế cơ sở như một giải pháp hiệu quả cho tình trạng quá tải tại các bệnh viện công lớn đồng thời mang lại kết quả sức khỏe người dân tốt hơn.

Trong **Bài báo số 4**, chúng tôi nghiên cứu các bác sĩ đa khoa (BSĐK) làm việc tại các TYT ở Việt Nam đánh giá chất lượng các dịch vụ chăm sóc ban đầu tại TYT và nhận thức của họ về cách cải thiện tình hình. Chúng tôi sử dụng 2 phương pháp nghiên cứu: một nghiên cứu định lượng sử dụng bộ câu hỏi VN PCAT-PE với 150 BSĐK và một nghiên cứu định tính bao gồm các cuộc phỏng vấn sâu với 22 BSĐK để hiểu rõ hơn kết quả của khảo sát định lượng; tìm hiểu về các rào cản của chăm sóc ban đầu và các giải pháp. Kết quả nghiên cứu chỉ ra rằng trong số bốn thành tố cốt lõi của chăm sóc ban đầu, các BSĐK đánh giá chất lượng của dịch vụ Chăm sóc liên tục và Chăm sóc tiếp xúc đầu tiên tại TYT xã là tốt nhất và Chăm sóc phối hợp là đặc điểm thực hiện kém nhất. Liên quan đến những thách thức mà các bác sĩ làm việc tại TYT đang đối mặt trong quá trình thực hành hàng ngày, có 3 nhóm yếu tố trọng tâm nổi bật: 1) Nhóm yếu tố liên quan đến bệnh nhân như thái độ và kiến thức của người dân, 2) Nhóm yếu tố liên

quan đến bác sĩ nhân viên y tế như gánh nặng công việc hành chính và thiếu cơ hội đào tạo, và 3) nhóm yếu tố liên quan đến bối cảnh như thu nhập thấp và thiếu nguồn lực bao gồm thuốc men và chẩn đoán. Các bác sĩ đề xuất nên thực hiện nhiều hơn các chiến dịch truyền thông nâng cao sức khỏe trên các phương tiện truyền thông, tăng số lượng dịch vụ có sẵn tại TYT xã (chẳng hạn như có thể lấy mẫu máu tại Trạm), giảm khối lượng công việc hành chính cho trưởng TYT, tăng mức trợ cấp và cung cấp nhiều khóa đào tạo liên tục cho bác sĩ tại TYT.

Đây là nghiên cứu đầu tiên sử dụng phương pháp hỗn hợp để khảo sát quan điểm của người cung cấp dịch vụ chăm sóc sức khỏe về chất lượng chăm sóc ban đầu ở Việt Nam, nghiên cứu này đưa ra đánh giá có giá trị từ phía cung của hệ thống chăm sóc ban đầu, tức là từ những người trực tiếp cung cấp các dịch vụ chăm sóc ban đầu. Cần có thêm nhiều nghiên cứu bổ sung về cung ứng dịch vụ và chất lượng chăm sóc ban đầu ở Việt Nam để tạo động lực thay đổi.

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my parents and my big family
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'Improving the Primary Health Care System in Vietnam through the National Expansion of Family Medicine Training Program', Project funded by Atlantic Philanthropies and in collaboration with Boston University, 2014 – 2016.

'A study on health insurance coverage and public health expenditures in Vietnam', Project funded by Kobe University and Keio University, 2013-2014, 2016-2017, 2019-2020.

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'Evaluate the implementation of the principles of primary care at Commune Health Centers in Thua Thien Hue Province', Research Grant funded by Hue University, 2012 - 2014.

'Improving the Primary Health Care System at the Rural Commune Level Through Development of an Innovative Medical Education Program', Project in collaboration with Boston University, funded by the Atlantic Philanthropies, 2008 - 2014.

- Oral Presentations

Hoa NT, Tam NM, Wim P, Anselme D, Jeffrey FM (2018), *Patient experiences of primary care quality amongst different types of health care facilities in central Vietnam*. Oral presentation at 22th WONCA World, Seoul.

Hoa NT, Tam NM, Wim P, Anselme D, Jeffrey FM (2018), *Apply the primary care assessment tool in Vietnam*. Oral presentation at 22th WONCA World, Seoul.

- Publications

Hoa NT, Derese A, Peersman W, Markuns JF, Willems S, Tam NM (2020) Primary care quality in Vietnam: Perceptions and opinions of primary care physicians in commune health centers – a mixed-methods study. PLoS ONE 15(10): e0241311.

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Thuy NN, **Hoa NT**, Tam NM, *Medical service utilization in Phu Loc District, Thua Thien Hue Province*. Journal of Medicine and Pharmacy – Hue University of Medicine and Pharmacy. 2014; 21: 105-115

Dieu VTN, **Hoa NT**, Dat NV, Tam NM. *At-home utilization of cardiovascular medicines among the elderly in Thua Thien Hue Province*. Journal of Medicine and Pharmacy – Hue University of Medicine and Pharmacy. 2014

Ha NX, Trung TD, Trang NTH, Yen NT, Ngoc CTB, **Hoa NT**, Tam NM. *Knowledge and attitude of doctor of preventive medicine students towards their careers in future*. Journal of Medicine and Pharmacy – Hue University of Medicine and Pharmacy. 2012.

IV. Awards and Honours

Second Prize, 19th National Youth Congress on Medicine and Pharmacy (Vietnam), 2018

First Prize, 20th Youth Congress on Medicine and Pharmacy, Hue University of Medicine and Pharmacy, 2019.

SUPPLEMENTARY MATERIAL

Supplementary Material 1:

The Vietnamese primary care assessment tool – consumer version VN PCAT AE

NGƯỜI LỚN
CÔNG CỤ ĐÁNH GIÁ CÔNG TÁC CHĂM SÓC SỨC KHỎE BAN ĐẦU
BẢN MỞ RỘNG
(Bản dành cho khách hàng **)

Người thiết kế bảng hỏi

Barbara Starfield, MD, MPH

*Chỉnh sửa phù hợp với điều kiện cụ thể ở Việt Nam bởi
Nhóm nghiên cứu Bộ môn YHGD – Trường ĐH Y Dược Huế và Khoa YHGD – ĐH Boston*

***Lưu ý: Trang đầu chỉ dành cho điều tra viên. Phần còn lại điều tra viên điền dựa trên trả lời của đối tượng điều tra hoặc để đối tượng điều tra tự điền.*

GPS Code (HHID)

THÔNG TIN HÀNH CHÍNH

1. Tỉnh _____ Mã : _____

2. Thành phố/ Huyện/ Thị xã _____ Mã : _____

3. Xã/ Phường/Thị trấn _____ Mã: _____

4. Tổ/Thôn/Làng _____ Mã : _____

5. Khu vực (Đô thị =1, Nông thôn = 2)

6. GPS: Vĩ độ: Bắc Kinh độ: Đông

Khoảng cách từ nhà đến Trạm y tế: _____ m

7. Tên chủ hộ:

8. Tên người được phỏng vấn: _____

9. Tên điều tra viên: _____

10. Thời gian bắt đầu phỏng vấn: : Thời gian kết thúc phỏng vấn: :

11. Ngày phỏng vấn :
D D M M Y Y

GIỚI THIỆU

MỤC ĐÍCH KHẢO SÁT

Điều tra viên: Xin chào, tên tôi là _____ . Tôi đại diện cho _____ .

Chúng tôi đang thực hiện một cuộc điều tra tại địa phương anh/chị để biết đánh giá của anh/chị về công tác chăm sóc sức khỏe ban đầu mà anh/chị đang được cung cấp.

11. Anh/chị bớt chút thời gian để nói chuyện với chúng tôi được không ạ? _____

1 Có (**Chuyển sang phần NỘI DUNG THỎA THUẬN ĐỀ XUẤT.**)

2 Không (đi đến người tiếp theo)

Tôi có thể quay lại vào lúc nào?

Cảm ơn anh/chị. Tạm biệt.

NỘI DUNG THỎA THUẬN ĐỀ XUẤT (nếu đối tượng tỏ vẻ quan tâm đến điều tra)

Phỏng vấn viên: Tôi xin phép giới thiệu đôi chút về cuộc điều tra. *Mục đích của cuộc điều tra này là tìm hiểu xem anh/chị có trải nghiệm tốt hay không với công tác chăm sóc sức khỏe ban đầu. Cuộc điều tra này sẽ giúp chúng tôi tìm ra được những dịch vụ nào cần được cải thiện.*

Tôi sẽ phỏng vấn anh/chị. **Cuộc phỏng vấn sẽ diễn ra trong khoảng 30 phút.**

Việc trả lời câu hỏi không đem lại lợi ích trực tiếp cho anh/chị nhưng kết quả cuộc điều tra đóng vai trò rất quan trọng trong việc cải thiện dịch vụ chăm sóc sức khỏe tại (địa điểm, tỉnh, thành phố)

Mặc dù cuộc điều tra này không gây ra rủi ro nào nhưng nó sẽ mất chút thời gian của anh/chị. Một số người có thể cho rằng cuộc điều tra này là một sự xâm phạm đời tư. Tuy nhiên, trong khuôn khổ pháp luật, các câu trả lời của anh/chị sẽ được giữ bí mật.

Thông tin từ cuộc điều tra sẽ chỉ được sử dụng như 1 phần cho nghiên cứu công tác chăm sóc sức khỏe ban đầu. Tên và địa chỉ của anh/chị không thể hiện trên bảng điều tra, do đó câu trả lời của anh/chị cũng được giữ bí mật. Vì các câu trả lời là riêng tư và bí mật nên chỉ nhóm nghiên cứu mới được đọc thông tin.

Anh/chị tham gia cuộc điều tra này hoàn toàn trên tinh thần tự nguyện. Anh/chị có quyền bỏ qua một số câu hỏi hoặc dừng cuộc phỏng vấn bất kì lúc nào. Dù anh/chị quyết định thế nào đi nữa cũng không làm ảnh hưởng đến dịch vụ chăm sóc sức khỏe ban đầu mà anh/chị đang được cung cấp cũng như đến công việc của anh/chị.

12. Anh/chị có sẵn lòng trả lời các câu hỏi về dịch vụ chăm sóc sức khỏe ban đầu không? _____

1 Có (**Chuyển sang câu A1.**)

2 Không (Kết thúc phỏng vấn bằng cách nói: Cảm ơn anh/chị đã dành thời gian cho chúng tôi. Tôi xin lỗi nếu đã làm phiền anh/chị. Chào anh/chị.)

A. MỨC ĐỘ GẮN BÓ VỚI MỘT BÁC SĨ/PHÒNG KHÁM

A1. Có bác sĩ hay phòng khám nào anh/chị **thường đến** khi bệnh hoặc cần tư vấn về sức khỏe không? _____

a Không

b Có (Vui lòng cho biết tên và địa chỉ.)

Tên của bác sĩ hay phòng khám: _____

Địa chỉ: _____

A2. Có bác sĩ hay phòng khám nào **hiểu rõ** về cá nhân con người anh/chị hay không? _____

a Không

b Có, chính là địa điểm trên

c Có nhưng không phải địa điểm trên (Vui lòng cho biết tên, địa chỉ.)

Tên của bác sĩ hay phòng khám: _____

Địa chỉ: _____

A3. Có bác sĩ hay phòng khám nào **có trách nhiệm lớn nhất** trong công tác chăm sóc sức khỏe của anh/chị hay không? _____

a Không

b Có, câu trả lời trùng với A1, A2

c Có, câu trả lời giống A1

d Có, câu trả lời giống A2

e Có, câu trả lời khác A1 & A2 (Vui lòng cho biết tên, địa chỉ.)

Tên của bác sĩ hay phòng khám: _____

Địa chỉ: _____

Nếu cả **3 địa điểm trên trùng nhau**, vui lòng trả lời tất cả các câu hỏi liên quan đến bác sĩ hay phòng khám đó (tiếp tục trang sau) →

Nếu có **2 địa điểm bất kì trùng nhau**, vui lòng trả lời tất cả các câu hỏi liên quan đến bác sĩ hay phòng khám đó (tiếp tục trang sau) →

Nếu **3 điểm này hoàn toàn khác nhau**, vui lòng trả lời tất cả các câu hỏi liên quan đến bác sĩ hay phòng khám A1 (tiếp tục trang sau) →

Nếu có 2 câu trả lời **Không**, vui lòng trả lời tất cả các câu hỏi liên quan đến bác sĩ hay phòng khám mà anh/chị trả lời **Có**. (tiếp tục trang sau) →

Nếu cả 3 câu trả lời là **Không**, vui lòng cho biết tên bác sĩ anh/chị đến khám *gần đây nhất*:

Tên bác sĩ hay phòng khám: _____

Địa chỉ: _____

(tiếp tục trang sau) →

Vui lòng nghĩ đến phòng khám đa khoa/bác sĩ đa khoa mà anh/chị đã đề cập ở phần trên trong tất cả các câu hỏi tiếp theo

A4. Phòng khám đa khoa/Bác sĩ đa khoa mà anh/chị **đã đề cập** là:

- 1 Một phòng khám 2 Một bác sĩ nhất định 3 Một y sĩ/y tá nhất định 4 Không phải các đối tượng trên

A5. Phòng khám đa khoa/Bác sĩ đa khoa mà anh/chị đã đề cập là?

- 1 Trạm y tế xã
 2 Trạm y tế phường
 3 Phòng khám của bệnh viện huyện/thành phố
 4 Phòng khám của bệnh viện tỉnh
 5 Phòng khám của bệnh viện Trung ương
 6 Phòng khám tư ở nhà bác sĩ

7 Phòng khám tư của một nhóm bác sĩ

8 Khác(ghi cụ thể)

9 Không chắc/ Không nhớ

A6. Phòng khám đa khoa/Bác sĩ đa khoa của anh/chị **khám cho**:

- 1 Chỉ người lớn 2 Cả trẻ em và người lớn 9 Không chắc/ Không nhớ

A7. Phòng khám đa khoa/Bác sĩ đa khoa của anh/chị chuyên về

- 1 Một số bệnh nhất định 2 Hầu hết các loại bệnh 9 Không chắc/ Không nhớ

A8. Anh/chị đã ghé tới đó **tổng cộng bao nhiêu lần** trong thời gian qua? _____ lần

A9. Anh/chị khám tại đó được **bao lâu rồi**?

- 1 Chưa tới 6 tháng
 2 Từ 6 tháng tới 1 năm
 3 1 – 2 năm
 4 3 – 4 năm
 5 Hơn 5 năm
 6 Hay thay đổi quá nên không xác định được
 9 Không chắc/ không nhớ

A10. Anh/chị **tự chọn** phòng khám đa khoa/bác sĩ đa khoa này **hay anh/chị đến đó theo chỉ định**

- 1 Anh/chị hay gia đình tự chọn.
 2 Anh/chị được chỉ định đến đó.
 3 Nguyên nhân khác
 9 Không chắc/ Không nhớ

A11. Có phải anh/chị chủ yếu **đến đó vì một vấn đề sức khỏe đặc biệt** không?

- 1 Có 2 Không 9 Không chắc

B. TIẾP CẬN BAN ĐẦU – SỬ DỤNG DỊCH VỤ

Chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
B1.	Khi cần kiểm tra sức khỏe tổng quát định kỳ , anh/chị có tới phòng khám đa khoa/bác sĩ đa khoa trước khi tới nơi khác không?	4□	3□	2□	1□	9□
B2.	Khi xuất hiện vấn đề sức khỏe mới anh/chị có tới phòng khám đa khoa/bác sĩ đa khoa trước khi tới nơi khác không?	4□	3□	2□	1□	9□
B3.	Khi anh/chị phải gặp bác sĩ chuyên khoa , anh/chị có cần phòng khám đa khoa/bác sĩ đa khoa cho phép hay giới thiệu không?	4□	3□	2□	1□	9□

C. TIẾP CẬN BAN ĐẦU

Chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
C1.	Phòng khám đa khoa/bác sĩ đa khoa có mở cửa vào thứ 7 hay Chủ Nhật không?	4□	3□	2□	1□	9□
C2.	Phòng khám đa khoa/bác sĩ đa khoa có mở cửa tới 8h tối ít nhất một ngày từ thứ 2 đến thứ 6 không?	4□	3□	2□	1□	9□
C4.	Nếu phòng khám đa khoa/bác sĩ đa khoa mở cửa , anh/chị có được tư vấn nhanh chóng qua điện thoại nếu cần không?	4□	3□	2□	1□	9□
C5.	Khi Phòng khám đa khoa/bác sĩ đa khoa đóng cửa , có số điện thoại nào để anh/chị liên hệ khi bị ốm không?	4□	3□	2□	1□	9□
C6.	Khi Phòng khám đa khoa/bác sĩ đa khoa đóng cửa vào thứ 7 hay Chủ Nhật mà anh/chị bị ốm, có ai ở Phòng khám đa khoa/bác sĩ đa khoa đó khám bệnh và chăm sóc cho anh/chị trong ngày đó không?	4□	3□	2□	1□	9□
C7.	Khi Phòng khám đa khoa/bác sĩ đa khoa đóng cửa và đang đêm anh/chị bị ốm, có ai ở Phòng khám đa khoa/bác sĩ đa khoa đó khám bệnh và chăm sóc cho anh/chị trong đêm đó không?	4□	3□	2□	1□	9□

D. QUÁ TRÌNH CHĂM SÓC

Chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
D1.	Mỗi khi đến phòng khám đa khoa/bác sĩ đa khoa, anh/chị có được cùng một bác sĩ hoặc y tá quen chăm sóc không?	4□	3□	2□	1□	9□
D4.	Nếu anh/chị có một câu hỏi , anh/chị có thể gọi điện hay nói chuyện với người bác sĩ hoặc y tá biết anh/chị rõ nhất không?	4□	3□	2□	1□	9□
D5.	Phòng khám đa khoa/bác sĩ đa khoa có dành đủ thời gian để lắng nghe những lo lắng hay những vấn đề của anh/chị không?	4□	3□	2□	1□	9□
D6.	Anh/chị có thấy thoải mái khi kể cho phòng khám đa khoa/bác sĩ đa khoa nghe về các lo lắng hay vấn đề của anh/chị không?	4□	3□	2□	1□	9□
D7.	Ngoài bệnh tật của anh/chị thì phòng khám đa khoa/bác sĩ đa khoa có biết gì thêm về anh/ chị không?	4□	3□	2□	1□	9□
D8.	Phòng khám đa khoa/bác sĩ đa khoa có biết ai đang sống cùng anh/chị không?	4□	3□	2□	1□	9□
D9.	Phòng khám đa khoa/bác sĩ đa khoa có biết hiện tại vấn đề gì là quan trọng nhất đối với anh/chị không?	4□	3□	2□	1□	9□
D10.	Phòng khám đa khoa/bác sĩ đa khoa có biết tường tận bệnh sử của anh/chị không?	4□	3□	2□	1□	9□
D11.	Phòng khám đa khoa/bác sĩ đa khoa có biết công việc, nghề nghiệp của anh/chị không?	4□	3□	2□	1□	9□
D12.	Phòng khám đa khoa/bác sĩ đa khoa có biết nếu bạn gặp khó khăn trong việc tìm mua hay thanh toán tiền thuốc không?	4□	3□	2□	1□	9□
D13.	Phòng khám đa khoa/bác sĩ đa khoa có biết tất cả các loại thuốc anh/chị đang sử dụng không?	4□	3□	2□	1□	9□

E. PHỎI HỢP

Chọn một câu trả lời phù hợp nhất.	Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
E1. Anh/chị có biết kết quả các xét nghiệm của mình không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E2. Anh/chị đã từng đi khám bác sĩ chuyên khoa nào khác hay sử dụng dịch vụ đặc biệt nào ngoài chăm sóc ban đầu và khám chữa bệnh tại phòng khám này hay chưa?					
1 <input type="checkbox"/> Có					
2 <input type="checkbox"/> Không (chuyển tới câu F1.)					
9 <input type="checkbox"/> Không chắc/ không nhớ (chuyển tới câu F1.)					
E3. Lần cuối cùng anh/chị đến khám bác sĩ chuyên khoa khác (ngoài phòng khám này) là cách đây bao lâu?					
Tháng _____ Năm _____					
E4. Lần khám bệnh đó có phải vì một căn bệnh chưa dứt hay kéo dài hơn 1 năm không?	1 <input type="checkbox"/> Có	2 <input type="checkbox"/> Không			
E5. Anh/chị đã tới đó lần nào trước lần khám đó chưa?					
1 <input type="checkbox"/> Có 2 <input type="checkbox"/> Không					

Trong những câu hỏi sau, bạn nên trả lời về lần khám bệnh với bác sĩ chuyên khoa này

Chọn một câu trả lời phù hợp nhất.	Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
E6. Có phải phòng khám đa khoa/bác sĩ đa khoa của anh/chị đã giới thiệu anh/chị tới bác sĩ chuyên khoa không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E7. Phòng khám đa khoa/bác sĩ đa khoa của anh/chị có biết anh/chị tới gặp bác sĩ chuyên khoa hay dùng dịch vụ đặc biệt không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E8. Phòng khám đa khoa/bác sĩ đa khoa có tư vấn cho anh/chị những nơi mà anh/chị nên tới khi gặp vấn đề sức khỏe này không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E9. Phòng khám đa khoa/bác sĩ đa khoa của bạn hoặc đồng nghiệp của họ có giúp anh/chị hẹn khám chuyên khoa đó không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E10. Phòng khám đa khoa/bác sĩ đa khoa có viết giấy thông báo hay cung cấp thông tin gì cho bác sĩ chuyên khoa biết về lý do anh/chị phải tới khám không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E11. Phòng khám đa khoa/bác sĩ đa khoa của anh/chị có biết kết quả lần khám đó không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E12. Sau khi anh/chị gặp bác sĩ chuyên khoa hay sử dụng dịch vụ đặc biệt, phòng khám đa khoa/bác sĩ đa khoa của bạn có trao đổi với anh/chị về lần khám đó không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>
E13. Phòng khám đa khoa/bác sĩ đa khoa của anh/chị có quan tâm tới chất lượng dịch vụ anh/chị nhận được từ bác sĩ chuyên khoa hay dịch vụ đặc biệt không?	4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	9 <input type="checkbox"/>

F. PHỐI HỢP (HỆ THỐNG THÔNG TIN)

Chọn một câu trả lời phù hợp nhất.	Có	Có lẽ có	Có lẽ không	Không	Không chắc/ Không nhớ
F1. Khi tới gặp phòng khám đa khoa/bác sĩ đa khoa, anh/chị có mang theo sổ khám bệnh , ví dụ như những ghi chép về những dịch vụ y tế anh/chị từng sử dụng trong quá khứ hay không?	4□	3□	2□	1□	9□
F2. Nếu muốn, anh/chị có được xem hồ sơ bệnh án của mình không?	4□	3□	2□	1□	9□
F3. Khi tới gặp phòng khám đa khoa/bác sĩ đa khoa, hồ sơ bệnh án của anh/chị có luôn có sẵn tại đó không?	4□	3□	2□	1□	9□

G. CHĂM SÓC TOÀN DIỆN (DỊCH VỤ SẴN CÓ)

Chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
Dưới đây là danh sách dịch vụ mà anh/chị hoặc gia đình đôi khi có thể cần tới. Với mỗi dịch vụ, vui lòng cho biết văn phòng của phòng khám đa khoa/bác sĩ đa khoa có sẵn hay không có?						
G1.	Hướng dẫn về dinh dưỡng hoặc chế độ ăn uống	4□	3□	2□	1□	9□
G2.	Tiêm chủng	4□	3□	2□	1□	9□
G3.	Kiểm tra xem gia đình anh/chị có là đối tượng của các lợi ích hay các chương trình phúc lợi xã hội sẵn có, ví dụ như: hỗ trợ về kinh tế, y tế, lương thực	4□	3□	2□	1□	9□
G4.	Khám răng	4□	3□	2□	1□	9□
G5.	Chữa răng bởi 1 nha sĩ	4□	3□	2□	1□	9□
G6.	Các biện pháp kế hoạch hóa gia đình hay các phương pháp ngừa thai	4□	3□	2□	1□	9□
G7.	Tư vấn hay điều trị việc lạm dụng chất gây nghiện hoặc ma túy	4□	3□	2□	1□	9□
G8.	Tư vấn các vấn đề về sức khỏe tâm thần	4□	3□	2□	1□	9□
G9.	Tư vấn và điều trị nghiện rượu	4□	3□	2□	1□	9□
G10.	Khâu vết thương	4□	3□	2□	1□	9□
G11.	Tư vấn và xét nghiệm AIDS/HIV	4□	3□	2□	1□	9□
G12.	Khám tai	4□	3□	2□	1□	9□
G13.	Khám mắt	4□	3□	2□	1□	9□
G14.	Điều trị dị ứng	4□	3□	2□	1□	9□
G15.	Cố định tạm thời các trường hợp gãy xương	4□	3□	2□	1□	9□
G19.	Tư vấn về cai thuốc lá	4□	3□	2□	1□	9□
G20.	Chăm sóc trước khi sinh	4□	3□	2□	1□	9□
G23.	Tư vấn cho bệnh nhân về các thay đổi về thể chất và tinh thần do tuổi tác	4□	3□	2□	1□	9□
G24.	Chăm sóc rốn sau sinh	4□	3□	2□	1□	9□
G25.	Theo dõi và quản lý thai sản thường	4□	3□	2□	1□	9□

H. CHĂM SÓC TOÀN DIỆN (DỊCH VỤ CUNG CẤP)

Các câu hỏi sau liên quan đến một số dịch vụ chăm sóc sức khỏe mà đôi khi anh/chị cần tới. Vui lòng chọn **một** câu trả lời phù hợp nhất.

	Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
Khi tới phòng khám đa khoa/bác sĩ đa khoa, các chủ đề sau có được đưa ra trao đổi không?					
H1. Tư vấn về dinh dưỡng	4□	3□	2□	1□	9□
H2. An toàn tại nhà như: bảo quản thuốc an toàn, phòng chống các tai nạn, bỏng, điện giật...	4□	3□	2□	1□	9□
H3. Các lời khuyên về mũ bảo hiểm hay đai nịt an toàn (xe hơi)	4□	3□	2□	1□	9□
H4. Các cách xử lý xung đột có thể xảy ra trong gia đình	4□	3□	2□	1□	9□
H5. Các lời khuyên về chế độ tập thể dục phù hợp	4□	3□	2□	1□	9□
H6. Kiểm tra mỡ trong máu (cholesterol máu)	4□	3□	2□	1□	9□
H7. Kiểm tra và tư vấn về loại thuốc anh/chị đang dùng	4□	3□	2□	1□	9□
H8. Nguy cơ bị phơi nhiễm với các chất độc hại trong nhà, tại nơi làm việc hay ở khu vực anh/chị sinh sống không?	4□	3□	2□	1□	9□
H9. Tư vấn cất giữ dụng cụ lao động an toàn	4□	3□	2□	1□	9□
H10. Làm thế nào để ngừa bỏng nước sôi	4□	3□	2□	1□	9□
H11. Tránh té ngã cho người già	4□	3□	2□	1□	9□
H12. Với phụ nữ: Làm thế nào để tránh loãng xương	4□	3□	2□	1□	9□
H13. Với phụ nữ: Chăm sóc những vấn đề liên quan đến kinh nguyệt, mãn kinh, tiền mãn kinh	4□	3□	2□	1□	9□

I. TẬP TRUNG VÀO GIA ĐÌNH

Những câu hỏi sau là về quan hệ giữa gia đình anh/chị với cơ sở chăm sóc sức khỏe của anh/chị. Chọn **một** câu trả lời phù hợp nhất.

	Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
I1. Phòng khám đa khoa/bác sĩ đa khoa có bao giờ hỏi ý kiến anh/chị khi lập kế hoạch điều trị và chăm sóc anh/chị hay một thành viên trong gia đình anh/chị không?	4□	3□	2□	1□	9□
I2. Phòng khám đa khoa/bác sĩ đa khoa có hỏi anh/chị về bệnh lý hay những vấn đề sức khỏe mang tính di truyền trong gia đình anh/chị không?	4□	3□	2□	1□	9□
I3. Phòng khám đa khoa/bác sĩ đa khoa có gặp thành viên gia đình anh/chị nếu anh/chị nghĩ điều đó là cần thiết không?	4□	3□	2□	1□	9□

J. ĐỊNH HƯỚNG CỘNG ĐỒNG

Vui lòng chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
J1.	Có ai ở phòng khám đa khoa/bác sĩ đa khoa tới thăm nhà bệnh nhân không?	4□	3□	2□	1□	9□
J2.	Phòng khám đa khoa/bác sĩ đa khoa có biết những vấn đề sức khỏe quan trọng ở khu vực anh/chị sinh sống không?	4□	3□	2□	1□	9□
J3.	Phòng khám đa khoa/bác sĩ đa khoa có biết lắng nghe ý kiến của mọi người để có thể giúp dịch vụ chăm sóc sức khỏe trở nên tốt hơn không?	4□	3□	2□	1□	9□
Phòng khám đa khoa/bác sĩ đa khoa có thực hiện các phương pháp sau để xác định hiệu quả của chương trình/ dịch vụ chăm sóc sức khỏe không?						
J11.	Hỏi ý kiến bệnh nhân để xem họ có thoả mãn nhu cầu hay chưa?	4□	3□	2□	1□	9□
J18.	Thu thập ý kiến phản hồi của bệnh nhân về biểu hiện của nhân viên y tế tại phòng khám không?	4□	3□	2□	1□	9□

K. TIẾP CẬN TRÊN PHƯƠNG DIỆN VĂN HOÁ

Vui lòng chọn một câu trả lời phù hợp nhất.		Có	Có lẽ có	Có lẽ không	Không	Không biết/ Không nhớ
K1.	Anh/chị có định giới thiệu phòng khám đa khoa/bác sĩ đa khoa cho họ hàng hay anh/chị bè không?	4□	3□	2□	1□	9□
K2.	Anh/chị có định giới thiệu phòng khám đa khoa/bác sĩ đa khoa cho một người dân tộc thiểu số không thạo tiếng Việt không?	4□	3□	2□	1□	9□
K3.	Anh/chị có định giới thiệu phòng khám đa khoa/bác sĩ đa khoa cho người đang chữa bệnh theo phương pháp dân gian như sử dụng thảo dược, dược phẩm tự chế hay có niềm tin đặc biệt về chăm sóc sức khỏe không?	4□	3□	2□	1□	9□

L. BẢO HIỂM

Đây là một số câu hỏi về mức chi tiêu của anh/chị cho việc chăm sóc sức khỏe. Vui lòng chọn **một** câu trả lời phù hợp nhất.

	Có	Không	Không biết/ Không nhớ
Trong 12 tháng qua, chi phí chăm sóc sức khỏe của anh/chị được trả bởi:			
L3. Bảo hiểm nhà nước (bắt buộc, tự nguyện, chương trình 135 hay 139)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	9 <input type="checkbox"/>
L4. Bảo hiểm y tế tư nhân	1 <input type="checkbox"/>	2 <input type="checkbox"/>	9 <input type="checkbox"/>
L5. Được miễn giảm chi phí khám chữa bệnh	1 <input type="checkbox"/>	2 <input type="checkbox"/>	9 <input type="checkbox"/>
L6. Tự chi trả	1 <input type="checkbox"/>	2 <input type="checkbox"/>	9 <input type="checkbox"/>
L8. Cách khác (nêu rõ.) _____			
L9. Trong năm vừa qua, anh/chị có gặp khó khăn khi chi trả cho dịch vụ chăm sóc sức khỏe không? 1 <input type="checkbox"/> Có 2 <input type="checkbox"/> Không			
L10. Khi đến phòng khám đa khoa/bác sĩ đa khoa, anh/chị có phải trả khoản phí nào không? 4 <input type="checkbox"/> Luôn luôn 3 <input type="checkbox"/> Thường xuyên 2 <input type="checkbox"/> thỉnh thoảng 1 <input type="checkbox"/> Hiếm khi hoặc không bao giờ 9 <input type="checkbox"/> Không chắc/ không nhớ			
L11. Anh/chị có được hoàn một phần hay tất cả chi phí từ chương trình bảo hiểm nào không? 4 <input type="checkbox"/> Luôn luôn 3 <input type="checkbox"/> Thường xuyên 2 <input type="checkbox"/> thỉnh thoảng 1 <input type="checkbox"/> Hiếm khi hoặc không bao giờ 9 <input type="checkbox"/> Không chắc/ không nhớ			

M. ĐÁNH GIÁ SỨC KHỎE

Chọn **một** câu trả lời phù hợp nhất.

M1. Anh/chị có thể nói sức khỏe của anh/chị: 1 <input type="checkbox"/> Tuyệt vời 2 <input type="checkbox"/> Rất tốt 3 <input type="checkbox"/> Tốt 4 <input type="checkbox"/> Tạm ổn 5 <input type="checkbox"/> Kém	
M2. Anh/chị có gặp vấn đề gì về thể chất, tâm lý hay tình cảm từng kéo dài hoặc có thể kéo dài hơn 1 năm không? 1 <input type="checkbox"/> Có 2 <input type="checkbox"/> Không 9 <input type="checkbox"/> Không chắc/ không nhớ	

N. ĐẶC ĐIỂM NHÂN KHẨU/ KINH TẾ XÃ HỘI

Đây là một số câu hỏi về anh/chị và gia đình anh/chị.

N1. Anh/chị là: 1 Nam 2 Nữ _____

N2. Anh/chị bao nhiêu tuổi? _____

N3. Anh/chị sống ở đâu? _____

N4. Anh/chị là: _____

1 Người Kinh

2 Người Bru - Vân Kiều

3 Người Cơ Tu

4 Người Mường

5 Người Khmer

6 Người Hmông

7 Dân tộc khác (nêu rõ): _____

N5. Anh/chị sinh ra ở tỉnh/ thành phố nào? _____

N6. Ở nhà anh/chị sử dụng ngôn ngữ nào? _____

N7. Anh/chị là: _____

1 Người lao động toàn thời gian

2 Người lao động bán thời gian

3 Thất nghiệp

4 Nghỉ hưu/ còn đi học

5 Khác (nêu rõ): _____

N8. Bậc học cao nhất của anh/chị là? _____

1 Tốt nghiệp tiểu học

2 Tốt nghiệp cấp 2

3 Tốt nghiệp cấp 3

4 Tốt nghiệp đại học/cao đẳng

5 Khác

N10. Anh/chị có thể cho biết thu nhập của cả gia đình anh chị trong 1 năm vừa qua là bao nhiêu? _____

N11. Khoản thu nhập đó dùng để chi tiêu cho bao nhiêu người? _____

Cảm ơn anh/chị đã tham gia phỏng vấn. Kết quả của cuộc điều tra sẽ rất có giá trị trong việc nâng cao chất lượng dịch vụ chăm sóc sức khỏe trong cộng đồng nơi anh/chị sinh sống.

Nếu anh/chị có bất cứ gợi ý hay thắc mắc nào về cuộc nghiên cứu, vui lòng liên hệ:

Cô/anh ấy rất sẵn lòng trả lời anh/chị vào bất cứ lúc nào. Nếu anh/chị cần bản sao kết quả cuộc điều tra sau khi chúng tôi thực hiện xong thì chỉ cần vui lòng báo cho chúng tôi biết.

Người chịu trách nhiệm với cuộc nghiên cứu là _____.

Số điện thoại của văn phòng nghiên cứu là _____.

Supplementary Material 2:

The Vietnamese primary care assessment tool – provider version VN PCAT PE

BỘ CÔNG CỤ ĐÁNH GIÁ CHĂM SÓC SỨC KHOẺ BAN ĐẦU BẢN MỞ RỘNG

(Dành cho Bác sỹ)

Thiết kế bởi

Barbara Starfield, MD, MPH

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Bộ công cụ được thiết kế để đánh giá hoạt động của bác sỹ thực hành. Trong các câu hỏi, từ “Phòng khám” được dùng để chỉ bạn và những người làm việc trực tiếp cùng bạn, hãy coi đây là nơi bạn sử dụng nhiều thời gian thực hành nhất trong vòng 6 tháng qua. Cố gắng phản ánh một cách đầy đủ nhất hoạt động phòng khám của bạn và trả lời các câu hỏi một cách chính xác nhất theo khả năng. Không có câu trả lời nào là sai hay đúng. Nếu như bạn không biết hãy chọn đáp án “Không chắc/không biết”.

A. THÔNG TIN HÀNH CHÍNH

Ngày hoàn thành phiếu: ___/___/___ Ngày ___/___/___ Tháng ___/___/___ Năm

Ngày sinh: ___/___/___ Ngày ___/___/___ Tháng ___/___/___ Năm

Tên người trả lời phỏng vấn:

Nơi công tác:

Giới ___ Nữ ___ Nam

Tỉnh : _____ Mã bưu điện: _____

Quận/huyện (Viết đầy đủ): _____

Số năm thực hành lâm sàng: _____

B. THÔNG TIN CHUNG

1. Nơi nào được bạn sử dụng phần lớn thời gian để thực hành?

1 Trạm y tế xã

2 Trạm y tế phường

3 Phòng khám của bệnh viện huyện/thành phố

4 Phòng khám của bệnh viện tỉnh

5 Phòng khám của bệnh viện Trung ương

6 Phòng khám tư của riêng bạn

7 Phòng khám tư của một nhóm Bác sỹ

9 Khác (Ghi cụ thể) _____

2a. Bạn có phòng khám tư của riêng mình không?

1 Có

2 Không

2b. Nếu “Có” ở câu 2, trong 1 tuần, bao nhiêu giờ bạn có mặt và khám chữa bệnh tại phòng khám tư đó? _____

3a. Bạn có chứng chỉ chuyên khoa 1 hay các chứng chỉ sau đại học nào không?

1 Có

2 Không

3b. Nếu “Có” ở câu 3a, hãy chọn chuyên ngành đào tạo của bạn:

1 Nội khoa

2 Y học gia đình

3 Nhi khoa

4 Ngoại khoa

5 Sản phụ khoa

6 Y tế công cộng

7 Khác (ghi rõ) _____

4. Hãy cho biết bao nhiêu phần trăm bệnh nhân của bạn (trừ dưới 6t và trên 80t) chi trả chi phí khám chữa bệnh theo các nguồn tương ứng sau đây. Tổng cộng các dòng là 100%

Thứ tư (1-3)

4a Bảo hiểm Nhà nước (bắt buộc, tự nguyện, chương trình 135 hay 139) _____

4b Bảo hiểm y tế tư nhân _____

4c Được miễn giảm chi phí khám chữa bệnh _____

4d Tự chi trả _____

4e Khác _____

Tổng cộng 100% _____

Chọn câu trả lời đúng nhất		0-20%	21-40%	41-60%	61-80%	81-100%	Không biết/không chắc
5.	Có khoảng bao nhiêu % số bệnh nhân của bạn phải tự trả tiền khám bệnh?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	9 <input type="checkbox"/>
6.	Có khoảng bao nhiêu % số bệnh nhân của bạn có vấn đề về sức khỏe kéo dài, rối loạn hành vi hay khiếm khuyết?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	9 <input type="checkbox"/>
7.	Trung bình, các bệnh nhân đến khám bệnh tại cơ sở của bạn (với chức năng là bác sĩ chăm sóc sức khỏe ban đầu) thì họ sẽ tiếp tục đến khám tại phòng khám của bạn trong thời gian bao lâu trước khi thay đổi sang các phòng khám khác (nếu có)?						
	1 <input type="checkbox"/> Dưới 6 tháng						
	2 <input type="checkbox"/> 6 tháng đến 1 năm						
	3 <input type="checkbox"/> 1 – 2 năm						
	4 <input type="checkbox"/> 3 – 4 năm						
	5 <input type="checkbox"/> 5 hoặc trên 5 năm						
	6 <input type="checkbox"/> Thay đổi không xác định được						
	9 <input type="checkbox"/> Không biết						
8.	Phòng khám của bạn có phụ trách một khu vực dân cư cụ thể nào không?						
	1 <input type="checkbox"/> Có 2 <input type="checkbox"/> Không 9 <input type="checkbox"/> Không chắc/không biết						

Chọn câu trả lời đúng nhất.		0-20%	21-40%	41-60%	61-80%	81-100%	Không chắc/không biết
9.	Khoảng bao nhiêu % số bệnh nhân có tên trong danh sách hay bảng kê được xác định là bệnh nhân của bạn?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	9 <input type="checkbox"/>
10.	Bao nhiêu % bệnh nhân được coi là bệnh nhân thường xuyên của bạn? (ví dụ như thường xuyên đến khám khi gặp các vấn đề về sức khỏe)	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	9 <input type="checkbox"/>
11.	Bao nhiêu phần trăm bệnh nhân sử dụng dịch vụ chăm sóc sức khỏe của bạn cho mọi tình trạng sức khỏe lúc khỏe cũng như lúc ốm đau (ngoại trừ trường hợp cấp cứu hay cần phải chuyển viện).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	9 <input type="checkbox"/>

C. TIẾP CẬN BAN ĐẦU

Chọn câu trả lời đúng nhất. Hãy coi “**phòng khám**” ở đây là **nơi mà bạn chọn ở Câu 1**, nơi mà bạn sử dụng phần lớn thời gian của mình để thực hành khám chữa bệnh.

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không biết/không chắc
C1. Phòng khám có mở cửa vào thứ 7, Chủ nhật không?	4□	3□	2□	1□	9□
C2. Phòng khám có mở cửa tới tận 8h tối, ít nhất 1 ngày trong tuần không?	4□	3□	2□	1□	9□
C3. Khi phòng khám mở cửa, bệnh nhân đến thì có ai tiếp đón bệnh nhân không?	4□	3□	2□	1□	9□
C4. Khi phòng khám mở cửa, bệnh nhân có thể tham vấn nhanh chóng qua điện thoại nếu cần không?	4□	3□	2□	1□	9□
C5. Khi phòng khám đóng cửa, bệnh nhân có thể liên lạc với bác sĩ bằng điện thoại khi họ cần không?	4□	3□	2□	1□	9□
C6. Khi phòng khám đóng cửa vào thứ 7 hay Chủ nhật, có ai ở phòng khám có thể thăm khám cho họ trong hôm đó không?	4□	3□	2□	1□	9□
C7. Khi phòng khám đóng cửa vào buổi đêm, có ai ở phòng khám có thể thăm khám cho họ trong đêm không?	4□	3□	2□	1□	9□
C8. Bệnh nhân có thể dễ dàng hẹn khám tại phòng khám không?	4□	3□	2□	1□	9□

D. CHĂM SÓC LIÊN TỤC

Chọn câu trả lời đúng nhất. Hãy coi “**phòng khám**” ở đây là **nơi mà bạn chọn ở Câu 1**, nơi mà bạn sử dụng phần lớn thời gian để thực hành khám chữa bệnh.

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết
D2. Bạn có hiểu những câu hỏi mà bệnh nhân hỏi bạn không?	4□	3□	2□	1□	9□
D3. Bệnh nhân có hiểu những gì bạn hỏi hay nói cho bệnh nhân không?	4□	3□	2□	1□	9□
D4. Nếu bệnh nhân có vấn đề cần hỏi, họ có thể gọi điện hay nói chuyện với bác sĩ, điều dưỡng người mà biết họ rõ nhất không?	4□	3□	2□	1□	9□
D5. Bạn có dành cho bệnh nhân đủ thời gian để nói về những vấn đề về sức khỏe của họ không?	4□	3□	2□	1□	9□
D6. Bệnh nhân cảm thấy thoải mái khi kể cho bạn những lo lắng hoặc vấn đề sức khỏe của họ không?	4□	3□	2□	1□	9□
D7. Bạn có nghĩ là bạn biết rất rõ về bệnh nhân của mình không? (Cả về bệnh và cuộc sống của họ)	4□	3□	2□	1□	9□
D8. Bạn có biết ai đang sống cùng bệnh nhân tại gia đình không?	4□	3□	2□	1□	9□
D9. Bạn có biết vấn đề gì là quan trọng nhất đối với bệnh nhân hiện tại không?	4□	3□	2□	1□	9□
D10. Bạn có biết rõ toàn bộ bệnh sử của bệnh nhân không?	4□	3□	2□	1□	9□
D11. Bạn có biết rõ việc làm, công việc hiện tại của bệnh nhân không?	4□	3□	2□	1□	9□

D12. Bạn có biết khi bệnh nhân gặp vấn đề về tiếp nhận hay chi trả cho đơn thuốc không? 4□ 3□ 2□ 1□ 9□

D13. Bạn có biết tất cả các loại thuốc mà bệnh nhân đang dùng hiện tại không? 4□ 3□ 2□ 1□ 9□

E. CHĂM SÓC PHỐI HỢP

Chọn câu trả lời đúng nhất.

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết
E1. Phòng khám có thực hiện được tối thiểu một vài các xét nghiệm cận lâm sàng nào đó không?	4□	3□	2□	1□	9□
E2. Nếu “Có” thì có phòng khám có chia sẻ kết quả xét nghiệm với bệnh nhân không? (Qua điện thoại, email, máy tính hay trực tiếp).	4□	3□	2□	1□	9□
E3. Bạn có biết tất cả các lần khám chuyên khoa hay sử dụng dịch vụ đặc biệt khác của bệnh nhân không?	4□	3□	2□	1□	9□
E4. Khi bệnh nhân cần chuyển khám chuyên khoa, bạn có trao đổi với bệnh nhân về các lựa chọn hay khả năng có thể giúp họ giải quyết các vấn đề sức khỏe hiện tại không?	4□	3□	2□	1□	9□
E5. Có ai ở phòng khám giúp bệnh nhân hẹn khám ở các cơ sở chuyên khoa đó không?	4□	3□	2□	1□	9□
E6. Khi giới thiệu bệnh nhân đi khám chuyên khoa, bạn có đưa bệnh nhân cầm theo thông tin viết tay nào để đến gặp bác sĩ chuyên khoa không?	4□	3□	2□	1□	9□
E7. Bạn có nhận được thông tin phản hồi hữu ích từ phía các cơ sở chuyên khoa đó về tình trạng bệnh nhân không?	4□	3□	2□	1□	9□
E8. Bạn có tư vấn, giải đáp cho bệnh nhân về kết quả các lần khám chuyên khoa đó không?	4□	3□	2□	1□	9□

F. CHĂM SÓC PHỐI HỢP (HỆ THỐNG THÔNG TIN)

Chọn câu trả lời đúng nhất.

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết
F1. Tất cả các bệnh nhân đều có bệnh án riêng, được lưu tại phòng khám không?	4□	3□	2□	1□	9□
F2. Khi đến khám bệnh nhân có mang theo bệnh án hay sổ y bạ không?	4□	3□	2□	1□	9□
F3. Bạn có cho phép bệnh nhân xem hồ sơ bệnh án của họ khi họ yêu cầu không?	4□	3□	2□	1□	9□
F4. Bệnh án, sổ y bạ có được chuẩn bị sẵn sàng khi bệnh nhân đến khám bệnh không?	4□	3□	2□	1□	9□
Bạn có sử dụng cách nào sau đây để đảm bảo cho dịch vụ được cung cấp không?					
F5. Bảng theo dõi kết quả xét nghiệm của bệnh nhân	4□	3□	2□	1□	9□
F6. Lập các chỉ dẫn trong hồ sơ bệnh án	4□	3□	2□	1□	9□
F7. Kiểm tra định kỳ hồ sơ bệnh án của bệnh nhân	4□	3□	2□	1□	9□

F8.	Lập danh sách các vấn đề sức khoẻ lưu trong bệnh án	4□	3□	2□	1□	9□
F9.	Danh sách các thuốc mà bệnh nhân đang sử dụng	4□	3□	2□	1□	9□
F10.	Khác (Ghi cụ thể) _____					

G. CHĂM SÓC TOÀN DIỆN (DỊCH VỤ SẴN CÓ)

Chọn câu trả lời đúng nhất.

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết	
Khi bệnh nhân cần, họ có thể tìm được các dịch vụ sau đây tại phòng khám của bạn không?						
G1.	Hướng dẫn về dinh dưỡng	4□	3□	2□	1□	9□
G2.	Tiêm chủng	4□	3□	2□	1□	9□
G3.	Hỗ trợ đạt được các lợi ích hay chương trình phúc lợi xã hội sẵn có, ví dụ như: hỗ trợ về y tế, kinh tế, lương thực	4□	3□	2□	1□	9□
G4.	Khám răng, Điều trị răng	4□	3□	2□	1□	9□
G5.	Kế hoạch hoá gia đình và các biện pháp tránh thai	4□	3□	2□	1□	9□
G6.	Tư vấn, điều trị sử dụng thuốc hay hoá chất	4□	3□	2□	1□	9□
G7.	Tư vấn về rối loạn hành vi hay bệnh tâm thần	4□	3□	2□	1□	9□
G8.	Tư vấn và điều trị nghiện rượu	4□	3□	2□	1□	9□
G9.	Khâu vết thương nhỏ	4□	3□	2□	1□	9□
G10.	Tư vấn, xét nghiệm HIV/AIDS	4□	3□	2□	1□	9□
G11.	Hút mũi tại chỗ xét nghiệm viêm nhiễm	4□	3□	2□	1□	9□
G12.	Khám mắt	4□	3□	2□	1□	9□
G13.	Điều trị dị ứng	4□	3□	2□	1□	9□
G14.	Cố định tạm thời các trường hợp gãy xương	4□	3□	2□	1□	9□
G15.	Đặt ống thông dạ dày	4□	3□	2□	1□	9□
G16.	Xét nghiệm dịch cổ tử cung, sàng lọc ung thư cổ tử cung	4□	3□	2□	1□	9□
G17.	Khám sàng lọc ung thư ruột hay đại tràng	4□	3□	2□	1□	9□
G18.	Tư vấn về hút thuốc	4□	3□	2□	1□	9□
G19.	Chăm sóc trước sinh	4□	3□	2□	1□	9□
G20.	Nắn trật khớp vai	4□	3□	2□	1□	9□
G21.	Tư vấn chăm sóc cuối đời/kết thúc sự sống tự nguyện	4□	3□	2□	1□	9□
G22.	Tư vấn cho bệnh nhân chuẩn bị trước các thay đổi do tuổi tác	4□	3□	2□	1□	9□
G23.	Chăm sóc rốn sau sinh	4□	3□	2□	1□	9□
G24.	Theo dõi và quản lý thai sản thường	4□	3□	2□	1□	9□

H. CHĂM SÓC TOÀN DIỆN (DỊCH VỤ CUNG CẤP)

Nếu phòng khám của bạn khám cho tất cả các đối tượng thì trả lời tất cả câu hỏi từ H1 – H18

Nếu chỉ khám cho trẻ em thì bỏ qua câu hỏi từ H3 – H12.

Nếu chỉ khám cho người lớn thì bỏ qua câu hỏi từ H13 – H17.

Chọn câu trả lời đúng nhất.		Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không biết/không chắc
Bạn có trao đổi với bệnh nhân các chủ đề sau không?						
H1.	Thực phẩm dinh dưỡng/không dinh dưỡng hoặc ngủ không đủ giấc	4□	3□	2□	1□	9□
H2.	Bảo quản thuốc tốt tại nhà	4□	3□	2□	1□	9□

Câu hỏi H3 – H12 dành cho người lớn (từ 18 tuổi trở lên)

Chọn câu trả lời đúng nhất.		Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết
Bạn có trao đổi với bệnh nhân về các vấn đề sau không?						
H3.	Thất đại an toàn khi ngồi ô tô và đội mũ bảo hiểm khi đi xe máy	4□	3□	2□	1□	9□
H4.	Giải quyết mâu thuẫn gia đình	4□	3□	2□	1□	9□
H5.	Tư vấn tập thể dục thích hợp	4□	3□	2□	1□	9□
H6.	Mức cholesterol máu	4□	3□	2□	1□	9□
H7.	Tư vấn sử dụng thuốc hiện tại	4□	3□	2□	1□	9□
H8.	Tiếp xúc với các chất độc hại ở nhà, cơ quan hay khu dân cư	4□	3□	2□	1□	9□
H9.	Phòng ngừa bỏng nước sôi	4□	3□	2□	1□	9□
H10.	Tránh té ngã	4□	3□	2□	1□	9□
H11.	Phòng ngừa loãng xương ở phụ nữ	4□	3□	2□	1□	9□
H12.	Chăm sóc mãn kinh, tiền mãn kinh ở phụ nữ	4□	3□	2□	1□	9□

Câu hỏi H14 – H18 dành cho trẻ em dưới 18 tuổi.

Chọn câu trả lời đúng nhất.		Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/Không bao giờ	Không chắc/không biết
Bạn có trao đổi các vấn đề sau đây với trẻ, bố mẹ hay bảo mẫu của trẻ không?						
H13.	Các cách giải quyết vấn đề với hành vi của trẻ	4□	3□	2□	1□	9□
H14.	Sự phát triển về thể chất hay thay đổi hành vi theo lứa tuổi của trẻ mà bố mẹ cần biết	4□	3□	2□	1□	9□
H15.	Các vấn đề an toàn cho trẻ dưới 6: phòng chấn thương, tránh lửa hay điện giật, an toàn thực phẩm, đề phòng chết đuối	4□	3□	2□	1□	9□
H16.	Các vấn đề an toàn cho trẻ từ 6 đến 12: sử dụng mũ bảo hiểm và đai an toàn trên ô tô	4□	3□	2□	1□	9□
H17.	Các vấn đề an toàn cho trẻ trên 12: tình dục an toàn, không sử dụng thuốc gây nghiện, đua xe, uống rượu	4□	3□	2□	1□	9□

I. GIA ĐÌNH – CÁC MỐI QUAN HỆ LIÊN QUAN

Chọn câu trả lời đúng nhất.		Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/Không bao giờ	Không chắc/không biết
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11.	Bạn có hỏi ý kiến bệnh nhân về phương thức chăm sóc và điều trị mà bạn đang áp dụng cho họ hoặc người nhà của họ không?	4□	3□	2□	1□	9□
12.	Bạn có hỏi bệnh nhân về các vấn đề về sức khỏe đang xảy ra tại gia đình của bệnh nhân không?	4□	3□	2□	1□	9□
13.	Bạn có vui lòng và sẵn sàng tư vấn cho các thành viên trong gia đình bệnh nhân về các vấn đề sức khỏe không?	4□	3□	2□	1□	9□

Các yếu tố sau đây có được tiến hành thường qui khi bạn đánh giá sức khỏe bệnh nhân hay không?

14.	Trao đổi về các yếu tố nguy cơ sức khỏe của gia đình, ví dụ như vấn đề di truyền	4□	3□	2□	1□	9□
15.	Trao đổi về kinh tế hộ gia đình	4□	3□	2□	1□	9□
16.	Trao đổi về các yếu tố nguy cơ xã hội, ví dụ như thất nghiệp	4□	3□	2□	1□	9□
17.	Trao đổi về điều kiện sinh hoạt: nước sạch, vệ sinh/nhà vệ sinh, stress trong công việc/ở nhà	4□	3□	2□	1□	9□
18.	Trao đổi về tình trạng sức khỏe của các thành viên khác trong gia đình	4□	3□	2□	1□	9□
19.	Trao đổi về giáo dục con cái	4□	3□	2□	1□	9□
110.	Phát hiện các dấu hiệu lạm dụng trẻ em	4□	3□	2□	1□	9□
111.	Phát hiện các dấu hiệu về bất hoà gia đình	4□	3□	2□	1□	9□
112.	Đánh giá ảnh hưởng của sức khỏe bố mẹ lên gia đình	4□	3□	2□	1□	9□
113.	Đánh giá mức độ phát triển của trẻ em	4□	3□	2□	1□	9□

J. ĐỊNH HƯỚNG CỘNG ĐỒNG

Chọn câu trả lời đúng nhất

	Luôn luôn	Thường xuyên	Thỉnh thoảng	Hiếm khi/không bao giờ	Không chắc/không biết
J3. Phòng khám có thu thập ý kiến và nhận xét của người dân để giúp nâng cao chất lượng chăm sóc sức khỏe không?	4□	3□	2□	1□	9□

Phòng khám có sử dụng các nguồn dữ liệu sau đây để xác định chương trình/dịch vụ nào là cần thiết cho cộng đồng dân cư của mình không?

J5. Số liệu tử vong	4□	3□	2□	1□	9□
J6. Số liệu về các bệnh lây truyền trong cộng đồng (bệnh lây qua đường tình dục, lao...)	4□	3□	2□	1□	9□
J7. Tỷ lệ tiêm chủng	4□	3□	2□	1□	9□
J8. Số liệu về sức khỏe cộng đồng hay bệnh nghề nghiệp	4□	3□	2□	1□	9□
J9. Số liệu thực hành lâm sàng của phòng khám	4□	3□	2□	1□	9□
J10. Khác (ghi cụ thể)					

Phòng khám có sử dụng các phương pháp sau để giám sát và/hoặc đánh giá hiệu quả của các chương trình hay dịch vụ sức khoẻ không?

J11.	Điều tra trên bệnh nhân	4□	3□	2□	1□	9□
J12.	Điều tra cộng đồng	4□	3□	2□	1□	9□
J13.	Phản hồi từ các tổ chức cộng đồng hay nhóm tư vấn cộng đồng	4□	3□	2□	1□	9□
J14.	Phản hồi từ các nhân viên tại phòng khám	4□	3□	2□	1□	9□
J15.	Phân tích số liệu tại chỗ hay dữ liệu dân số	4□	3□	2□	1□	9□
J16.	Đánh giá có hệ thống các chương trình và dịch vụ mà bạn cung cấp	4□	3□	2□	1□	9□
J17.	Nhân viên y tế thôn bản	4□	3□	2□	1□	9□
J18.	Thu thập phản hồi của bệnh nhân về biểu hiện của nhân viên tại phòng khám	4□	3□	2□	1□	9□
J19.	Khác (Ghi cụ thể) _____					

Chọn câu trả lời đúng nhất

Luôn luôn Thường xuyên Thỉnh thoảng Hiếm khi/không bao giờ Không chắc/không biết

Phòng khám có sử dụng các phương pháp sau đây để tiếp cận với cộng đồng dân cư phụ trách hay không?

J20.	Thiết lập quan hệ với các tổ chức đoàn thể Trung Ương và địa phương quản lý các nhóm dân cư khác nhau về văn hóa	4□	3□	2□	1□	9□
J21.	Liên kết với các tổ chức tôn giáo khác nhau	4□	3□	2□	1□	9□
J22.	Tham gia của các nhóm cộng đồng và lãnh đạo cộng đồng	4□	3□	2□	1□	9□
J24.	Khác (Ghi cụ thể) _____					

K. TIẾP CẬN TRÊN PHƯƠNG DIỆN VĂN HOÁ

Chọn câu trả lời đúng nhất.

Luôn luôn Thường xuyên Thỉnh thoảng Hiếm khi/không bao giờ Không chắc/không biết

K1.	Có ai ở phòng khám có khả năng giao tiếp với bệnh nhân không cùng ngôn ngữ không? (như thuộc nhóm dân tộc thiểu số)	4□	3□	2□	1□	9□
K2.	Bạn có quan tâm đến niềm tin chăm sóc sức khoẻ đặc biệt hay thói quen sử dụng thuốc y học cổ truyền của bệnh nhân/gia đình họ như thảo mộc, thuốc tự chế không?	4□	3□	2□	1□	9□
K3.	Bạn có quan tâm đến yêu cầu của gia đình/bệnh nhân về sử dụng các điều trị thay thế như châm cứu hay điều trị vi lượng đồng cân không?	4□	3□	2□	1□	9□

Phòng khám của bạn có sử dụng cách nào sau đây để đáp ứng với sự đa dạng về văn hoá trong cộng đồng dân cư của mình hay không?

K4.	Tập huấn cho nhân viên bởi các chuyên gia	4□	3□	2□	1□	9□	_____
K5.	Đào tạo tại chức cho nhân viên y tế của phòng khám	4□	3□	2□	1□	9□	_____
K6.	Sử dụng các phương tiện truyền đạt văn hoá dễ tiếp nhận như ngôn ngữ, hình ảnh, tập quán văn hoá	4□	3□	2□	1□	9□	_____
K7.	Đội ngũ nhân viên đa dạng về văn hoá phản ánh thực tế cộng đồng dân cư	4□	3□	2□	1□	9□	_____
K8.	Thông dịch/phiên dịch viên	4□	3□	2□	1□	9□	_____
K9.	Thiết kế dịch vụ phù hợp với văn hoá từng khu vực dân cư	4□	3□	2□	1□	9□	_____
K10.	Khác (Ghi cụ thể) _____						_____

KHÁC

1. Phòng khám có áp dụng hình thức thanh toán linh động theo khả năng bệnh nhân hay trả dần đối với bệnh nhân có khó khăn về kinh tế không?

1 Có 2 Không 9 Không biết

2. Hãy xác định % thu nhập của bạn theo các nguồn tương ứng sau đây. Tổng cộng 4 dòng cần đủ 100%

_____ Lương nhà nước

_____ Phòng khám tư nhân

_____ Quà cáp (không phải tiền)

_____ Khác (ghi cụ thể): _____

100% Tổng cộng

3. Trong một ngày có bao nhiêu lượt bệnh nhân đến khám tại phòng khám của bạn? (ước đoán) _____ lượt

4. Trong một tuần có bao nhiêu lượt bệnh nhân đến khám tại phòng khám của bạn? (ước đoán) _____ lượt

5. Tỷ lệ % đến khám bệnh theo từng lứa tuổi là bao nhiêu? (ước đoán)

Phần trăm

Tuổi 0 - 6 _____

Tuổi 7 - 16 _____

Tuổi 17- 60 _____

Tuổi 60 - 80 _____

Tuổi 80 và trên 80 _____

Tổng 100%

6. Phòng khám của bạn có tiếp nhận bệnh nhân mới không?

1 Có

2 Không

3 Trường hợp khác (Ghi cụ thể)

7. Bạn có thể ước lượng được 1 năm có bao nhiêu bệnh nhân khác nhau đến phòng khám (không phải lượt khám)? _____

1 Có 2 Không 9 Không biết

8. Chúng tôi biết rằng nhân lực và tiền đầu tư hiện nay là vấn đề nổi cộm. Nhưng ngoài 2 yếu tố đó, theo bạn, còn có những yếu tố nào là cần thiết cho hoạt động chăm sóc sức khỏe ban đầu phù hợp với cộng đồng mà bạn đang cung cấp dịch vụ?

Kiểm tra chắc chắn rằng bạn không bỏ qua trang nào của bộ câu hỏi. Cảm ơn.

Đánh dấu vào ô dưới đây nếu bạn muốn nhận được bản copy kết quả cuối cùng của nghiên cứu này

Có

Không

Cảm ơn bạn đã dành thời gian hoàn thành bộ câu hỏi. Thông tin mà bạn cung cấp sẽ rất hữu ích trong việc hoạch định các chính sách phù hợp đáp ứng nhu cầu chăm sóc sức khỏe tại cộng đồng.

Supplementary Material 3:

Previous publication of PCAT work in Vietnam: Tam NM, **Hoa NT**, Derese A, Markuns JF. *The implementation of principles of primary care in practice at Commune Health Centers of Thua Thien Hue province*. Journal of Medicine and Pharmacy – Hue University of Medicine and Pharmacy. 2015; 30: 101-110

ĐÁNH GIÁ TÌNH HÌNH THỰC HIỆN CÁC NGUYÊN LÝ CHĂM SÓC BAN ĐẦU TẠI CÁC TRẠM Y TẾ XÃ, PHƯỜNG TỈNH THỪA THIÊN HUẾ

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Tóm tắt

Đặt vấn đề: Các bằng chứng trên thế giới trong thời gian qua đã khẳng định vai trò quan trọng của chăm sóc ban đầu trong dự phòng bệnh tật và giảm tỷ lệ tử vong. Năm 2008, Tổ chức Y tế Thế giới khuyến cáo rằng các nước nên tăng cường hệ thống chăm sóc ban đầu và sử dụng chăm sóc ban đầu như một mô hình để đảm bảo tính công bằng và hiệu quả. Việc đánh giá sự thực hiện và chất lượng của các dịch vụ chăm sóc ban đầu tại tuyến xã, phường trong bối cảnh hiện nay là rất cần thiết. **Mục tiêu:** Đánh giá việc thực hành các nguyên lý chăm sóc ban đầu tại các Trạm y tế xã, phường tỉnh Thừa Thiên Huế. **Đối tượng và phương pháp:** Nghiên cứu mô tả cắt ngang trên 860 người dân trên 18 tuổi có sử dụng dịch vụ y tế tại Trạm y tế trên địa bàn 4 huyện Phú Lộc, Nam Đông, Hương Thủy và Thành phố Huế. Nghiên cứu sử dụng bộ công cụ Đánh giá chăm sóc ban đầu PCAT (Primary Care assessment tools). **Kết quả:** Phần tiếp cận ban đầu - sử dụng dịch vụ có số điểm trung bình cao nhất ($3,25 \pm 0,93$), tiếp là mức độ gắn bó ($3,17 \pm 0,90$), quá trình chăm sóc ($2,87 \pm 0,50$), chăm sóc toàn diện - dịch vụ sẵn có ($2,75 \pm 0,52$); Các phần có số điểm thấp bao gồm: Phần chăm sóc phối hợp ($2,47 \pm 0,97$), tiếp cận trên phương diện văn hoá ($2,37 \pm 1,17$), định hướng cộng đồng ($2,35 \pm 0,82$), chăm sóc toàn diện - dịch vụ cung cấp ($2,22 \pm 0,84$), phối hợp hệ thống thông tin ($2,03 \pm 0,79$); Tổng điểm trung bình chăm sóc ban đầu là $19 \pm 3,46$, tổng điểm trung bình chăm sóc ban đầu mở rộng là $25,75 \pm 5,42$

Từ khóa: chăm sóc ban đầu, nguyên lý chăm sóc ban đầu, Trạm y tế.

Abstract

THE IMPLEMENTATION OF PRINCIPLES OF PRIMARY CARE IN PRACTICE AT COMMUNE HEALTH CENTERS OF THUA THIEN HUE PROVINCE.

Background: Evidences around the world in the recent time have affirmed the key role in Disease prevention and mortality rate decreasing. WHO in 2008 recommended countries should improve the primary care system and use primary care as a model to achieve the effectiveness and equity in Health. Evaluation of the quality of primary care services at commune health centers has been very crucial. **Objectives:** To assess the practice of the principles of primary care at commune health centers of Thua Thien Hue province. **Subjects and Methods:** Cross-sectional descriptive study of 860 adult people used the health care services at commune health center at 4 districts in Thua Thien Hue province: Phu Loc, Nam Dong, Huong Thuy and Hue. The study used the Primary Care Assessment tools PCAT from John Hopkins University. **Results:** First Contact - Utilization was the highest score (3.25 ± 0.93), Affiliation (3.17 ± 0.90), Ongoing care (2.87 ± 0.50), Comprehensiveness – services available (2.75 ± 0.52);

The low scores included Coordination of care (2.47 ± 0.97), Culture - based access (2.37 ± 1.17), Community - based orientation (2.35 ± 0.82), Comprehensiveness – services provided (2.22 ± 0.84), Coordination of care - Information system (2.03 ± 0.79); Total average of primary care was 19.00 ± 3.46 , and the total average of expanded primary care was 25.75 ± 5.42 .

Key words: primary care, principles of primary care, commune health center.

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I. ĐẶT VẤN ĐỀ

Các bằng chứng trên thế giới trong thời gian qua đã khẳng định vai trò quan trọng của chăm sóc ban đầu trong dự phòng bệnh tật và giảm tỷ lệ tử vong [8,11,13,16]. Chăm sóc ban đầu tốt, trái ngược với các dịch vụ chăm sóc chuyên khoa, có mối tương quan chặt chẽ với tình trạng bình đẳng về sức khỏe và chăm sóc sức khỏe của một dân tộc và giữa các dân tộc khác nhau [3,4]. Nhìn chung, hầu hết các nghiên cứu đều cho thấy rằng chất lượng chăm sóc ban đầu càng được nâng cao thì sức khỏe người dân của vùng đó càng được tốt hơn [2,5,6]. Năm 2008, Tổ chức Y tế Thế giới khuyến cáo rằng các nước nên tăng cường hệ thống chăm sóc ban đầu và sử dụng chăm sóc ban đầu như một mô hình để đảm bảo tính công bằng và hiệu quả [9]. Những thay đổi gần đây của ngành y tế Việt Nam, đặc biệt là sự phát triển các loại hình bảo hiểm và sự đầu tư của chính phủ, đã tạo nên sự chuyển biến trong cung và cầu của hệ thống chăm sóc ban đầu, đặc biệt là ở tuyến xã. Những chính sách miễn giảm chi phí chăm sóc y tế của Chính phủ đã giúp làm tăng khả năng tiếp cận của đối tượng nghèo và dễ bị tổn thương với dịch vụ y tế tuyến xã, phùng đồng thời làm tăng khối lượng công việc của đội ngũ nhân viên y tế tuyến này. Các nghiên cứu gần đây cho thấy Trạm y tế vẫn tiếp tục là cơ sở y tế quan trọng của người dân, đặc biệt là người nghèo, khi tìm kiếm dịch vụ chăm sóc sức khỏe ban đầu. Việc đánh giá sự thực hiện và chất lượng của các dịch vụ chăm sóc ban đầu tại tuyến xã, phùng trong bối cảnh hiện nay là rất cần thiết. Tuy nhiên, các đề tài nghiên cứu về vấn đề này vẫn còn rất hạn chế. Việc thực hiện đề tài này nhằm cung cấp bằng chứng giúp ngành y tế có được cơ sở trong việc xây dựng chiến lược phát triển và lập kế hoạch hoạt động cho tuyến y tế cơ sở trong thời gian tới.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Thời gian và địa điểm nghiên cứu:

Nghiên cứu tiến hành từ tháng 6/2013 đến tháng 9/2014 tại 4 huyện tỉnh Thiên Huế (T.T. Huế): Phú Lộc, Hương Thủy, Nam Đông và thành phố Huế.

2.2. Đối tượng nghiên cứu: người dân từ 18 tuổi trở lên sinh sống tại địa bàn nghiên cứu tại thời điểm nghiên cứu có sử dụng dịch vụ y tế tại Trạm y tế trong 2 năm gần đây.

2.3. Phương pháp nghiên cứu:

2.3.1. Thiết kế nghiên cứu: Nghiên cứu cắt ngang mô tả.

2.3.2. Phương pháp chọn mẫu và cỡ mẫu:

Chọn mẫu nhiều giai đoạn, chọn 4 huyện của Tỉnh Thừa Thiên Huế, mỗi huyện chọn ngẫu nhiên 6 xã với Trạm y tế có Bác sỹ, tại mỗi xã chọn ngẫu nhiên 15 hộ có người có tên trong danh sách khám bệnh của Trạm và 15 hộ gia đình trong danh sách toàn xã. Tại mỗi hộ gia đình phỏng vấn ngẫu nhiên 2 người lớn. Nghiên cứu này chỉ sử dụng dữ liệu của người dân có đi khám tại Trạm y tế. Cỡ mẫu thu được: **N=860 người**.

2.3.3. Bộ công cụ và các biến nghiên cứu

Nghiên cứu sử dụng bộ công cụ Đánh giá Chăm sóc sức khỏe ban đầu PCAT (Primary Care Assessment tools) phiên bản dành cho khách hàng người lớn được phát triển bởi Trung tâm Chính sách Chăm sóc sức khỏe ban đầu, trường Đại học John Hopkins, Hoa Kỳ. bộ câu hỏi dành cho người cung cấp dịch vụ - bác sỹ) đều đánh giá chất lượng dịch vụ chăm sóc ban đầu thông qua các đặc tính của chăm sóc ban đầu: Điểm tiếp cận ban đầu (tính tiếp cận và sử dụng dịch vụ); Chăm sóc liên tục; Chăm sóc phối hợp; Chăm sóc toàn diện - dịch vụ sẵn có; Chăm sóc toàn diện - dịch vụ cung cấp và Chăm sóc hướng cộng đồng.

Để đảm bảo tính thống nhất cho bộ câu hỏi, tất cả các câu hỏi trong phần đặc điểm của chăm sóc ban đầu đều được tính điểm dựa vào thang điểm 5 Likert: 1 = Không; 2 = Có thể không; 3 = Có thể có; 4 = Có; 9 = Không biết/Không nhớ. Điểm của mỗi các nội dung chính (domain và subdomain) và tổng điểm chăm sóc ban đầu, chăm sóc ban đầu mở rộng đều được tính tuân theo hướng dẫn phân tích bộ câu hỏi PCAT (PCAT manual) do trường đại học John Hopkins biên soạn (www.jhsph.edu/pepc/pca_tools.html).

Cách tính điểm của mỗi phần (domain và subdomain):

Tổng điểm của mỗi phần là trung bình cộng của tất cả điểm số của câu hỏi trong phần đó (sau khi đã mã hóa lại ở một số câu hỏi phù hợp C9, C10, C11, C12, D15 mã hóa ngược (4=1), (3=2), (2=3), (1=4).

Không tính điểm tổng của phần (domain) nào có từ 50% câu trả lời là Không biết/không nhớ hoặc missing.

Đối với những phần còn lại có ít hơn 50% câu trả lời là không biết/không nhớ hoặc missing, mã hóa lại không biết/không nhớ (điểm 9) và missing thành 2. Ngoại trừ phần Chăm sóc toàn diện (dịch vụ cung cấp), mã hóa không biết/không nhớ (điểm 9) thành 0.

Cách tính điểm chỉ số chăm sóc ban đầu:

Điểm chỉ số chăm sóc ban đầu là tổng số giá trị

của 8 phần (subdomain) trong 4 nội dung cốt lõi: Tiếp cận ban đầu - sử dụng dịch vụ; Tiếp cận ban đầu; mức độ gắn bó với một bác sĩ/phòng khám; chăm sóc liên tục; chăm sóc phối hợp; chăm sóc phối hợp - hệ thống thông tin; Chăm sóc toàn diện - dịch vụ sẵn có, chăm sóc toàn diện - dịch vụ cung cấp.

Không tính điểm chỉ số chăm sóc ban đầu nếu có từ 4 phần cốt lõi (core subdomain) missing 50% trở lên.

Nếu 3 phần cốt lõi (core subdomain) hoặc ít hơn missing trên 50%, dùng giá trị trung bình của các phần còn lại để tính điểm chỉ số ban đầu.

Cách tính điểm chỉ số chăm sóc ban đầu mở rộng:

Điểm chỉ số chăm sóc ban đầu mở rộng là tổng số giá trị của tất cả 11 phần cốt lõi và phần phụ:

Tiếp cận ban đầu - sử dụng dịch vụ; Tiếp cận ban đầu; Mức độ gắn bó với một bác sĩ/phòng khám; Chăm sóc liên tục; Chăm sóc phối hợp; Chăm sóc phối hợp - hệ thống thông tin; Chăm sóc toàn diện - dịch vụ sẵn có; Chăm sóc toàn diện - dịch vụ cung cấp; Tập trung vào gia đình; Định hướng cộng đồng và Tiếp cận trên phương diện văn hóa.

Không tính điểm chỉ số chăm sóc ban đầu mở rộng nếu có từ 6 phần cốt lõi và phần phụ missing 50 % trở lên.

Nếu có 5 phần cốt lõi và phần phụ hoặc ít hơn missing trên 50%, dùng giá trị trung bình của các phần còn lại để tính điểm chỉ số ban đầu mở rộng.

2.4. Xử lý và phân tích số liệu: Số liệu được nhập qua phần mềm EpiData, xử lý bằng phần mềm SPSS phiên bản 18.0.

3. KẾT QUẢ

3.1. Đặc điểm của đối tượng nghiên cứu

3.1.1. Đặc điểm nhân khẩu học

Bảng 3.1. Đặc điểm nhân khẩu học

Đặc điểm		Số lượng (n)	Tỉ lệ (%)
Giới	Nam	380	44,2
	Nữ	480	55,8
Tuổi	18 đến 39 tuổi	272	31,6
	40 đến 59 tuổi	339	39,4
	Từ 60 tuổi trở lên	249	28,9
Tình trạng việc làm	Làm việc toàn thời gian	521	60,9
	Làm việc bán thời gian	123	14,4
	Thất nghiệp	143	16,7
	Đi học/ Nghỉ hưu	69	8,1
Trình độ học vấn	Tốt nghiệp tiểu học	281	32,9
	Tốt nghiệp trung học	169	19,8
	Tốt nghiệp phổ thông	116	13,6
	Tốt nghiệp trung cấp/cao đẳng/ đại học	57	6,7
	Chưa tốt nghiệp tiểu học	166	19,5
	Mù chữ	64	7,5
Bảo hiểm y tế	Có	706	82,6
	Không	149	17,4

3.1.2. Tình trạng sức khỏe

Bảng 3.2. Tình trạng sức khỏe người tham gia nghiên cứu

Đặc điểm		Số lượng (n)	Tỉ lệ (%)
Tình trạng sức khỏe tự đánh giá	Tuyệt vời	1	0,1
	Rất tốt	67	7,8
	Tốt	369	42,9
	Tạm ổn	342	39,8
	Kém	81	9,4
Bệnh mãn tính	Có	163	19,8
	Không	660	80,2

3.1.3. Mức độ gắn bó với Trạm y tế

Bảng 3.3. Mức độ gắn bó với Trạm y tế

Đặc điểm		Số lượng (n)	Tỉ lệ (%)
Khoảng thời gian gắn bó với TYT	Ít hơn 6 tháng	71	8,4
	Từ 6 tháng đến 1 năm	28	3,3
	1-2 năm	72	8,5
	3-4 năm	86	10,2
	Từ 5 trở lên	584	69,2
	Không xác định được	3	0,4
Mức độ gắn bó	Kém	36	4,2
	Vừa	181	21
	Chặt chẽ	245	28,5
	Rất chặt chẽ	398	46,3

3.2. Đánh giá về thực hành các nguyên lý chăm sóc ban đầu tại các Trạm y tế tỉnh Thừa Thiên Huế từ phía khách hàng sử dụng dịch vụ

Bảng 3.4: Đánh giá chung về thực hành các nguyên lý chăm sóc ban đầu tại các Trạm y tế tỉnh Thừa Thiên Huế từ phía khách hàng sử dụng dịch vụ

Nội dung (Domain) (n)	Điểm trung bình	SD
Mức độ gắn bó (860)	3,17	0,90
Tiếp cận ban đầu- sử dụng dịch vụ (852)	3,25	0,93
Tiếp cận ban đầu (846)	2,58	0,48
Quá trình chăm sóc (851)	2,87	0,50
Chăm sóc phối hợp (255)	2,47	0,97
Phối hợp (hệ thống thông tin) (649)	2,03	0,79
Chăm sóc toàn diện (dịch vụ sẵn có) (831)	2,75	0,52
Chăm sóc toàn diện (dịch vụ cung cấp) (845)	2,22	0,84
Tập trung vào gia đình (837)	2,27	1,03
Định hướng cộng đồng (801)	2,35	0,82
Tiếp cận trên phương diện văn hóa (840)	2,37	1,17
Chỉ số chăm sóc ban đầu (849)	19,00	3,46
Chỉ số chăm sóc ban đầu mở rộng (850)	25,75	5,42

4. BÀN LUẬN

Trong 860 người tham gia nghiên cứu có gần 2/3 người có thời gian gắn bó với Trạm y tế hơn 5 năm. Chỉ khoảng 10% là có thời gian gắn bó dưới 1 năm. Còn lại khoảng 1/5 người tham gia

nghiên cứu là từ 1 đến 4 năm gắn bó với Trạm y tế. Tương tự, chỉ có khoảng 1/5 người có bệnh mạn tính trong mẫu nghiên cứu.

Với 3 câu hỏi về sự cần thiết đi khám ở TYT trước khi đi khám ở nơi khác khi có một vấn đề sức khỏe mới hoặc là khi cần đi khám sức khỏe tổng quát, phần Tiếp cận ban đầu- Sử dụng dịch vụ đã được khách hàng cho điểm cao nhất (3,25). Các nghiên cứu về đánh giá chăm sóc ban đầu tại một số nước Châu Á cũng cho kết quả tương tự với chúng tôi, nội dung Tiếp cận ban đầu- Sử dụng dịch vụ được đánh giá cao nhất (Tsai: 2,78) [17]. Điều này cũng phù hợp với thực tế. Trạm y tế là đơn vị kỹ thuật đầu tiên tiếp xúc với nhân dân, nằm trong hệ thống y tế Nhà nước, có nhiệm vụ thực hiện các dịch vụ kỹ thuật CSBD, phát hiện dịch sớm và phòng chống dịch bệnh, đỡ đỡ thông thường, cung ứng thuốc thiết yếu, vận động nhân dân thực hiện các biện pháp kế hoạch hóa gia đình, tăng cường sức khỏe.

Trong những năm gần đây, nhu cầu chăm sóc sức khỏe ở nước ta tăng cao và đa dạng. Trong bối cảnh đó, mô hình phân phối dịch vụ y tế ở Việt Nam đã có những biến động, một phần người bệnh có nhu cầu cao về dịch vụ khám chữa bệnh bắt đầu chuyển sang chọn lựa các cơ sở dịch vụ y tế tư nhân, nơi cung cấp dịch vụ y tế có chất lượng chức năng tốt hơn, một số người bệnh có điều kiện sẵn sàng ra nước ngoài để khám và điều trị, những người bệnh ở các vùng miền núi, hải đảo vẫn còn khó khăn để tiếp cận được các dịch vụ khám chữa bệnh chất lượng. Chính phủ đã thực hiện nhiều chính sách nhằm bảo đảm công bằng trong cung ứng DVYT, đặc biệt là chủ trương phát triển y tế cơ sở; đẩy mạnh CSSK ban đầu; ưu tiên miền núi, vùng sâu, vùng xa, vùng khó khăn; hỗ trợ tài chính cho người nghèo, cận nghèo, trẻ em dưới 6 tuổi, đồng bào dân tộc thiểu số khi đi KCB.

Hệ thống TYT xã phường tại tỉnh Thừa Thiên Huế trong thời gian qua tiếp tục được củng cố và hoàn thiện, bảo đảm 100% số xã có Trạm y tế phù hợp với điều kiện kinh tế-xã hội và nhu cầu khám chữa bệnh từng vùng. Do đó việc được đánh giá cao về Tiếp cận ban đầu- Sử dụng dịch vụ là hoàn toàn phù hợp.

Tương tự như vậy, trong nội dung về Chăm sóc toàn diện, đặc tính Chăm sóc toàn diện- dịch vụ sẵn có đạt được điểm trung bình khá cao (2,75), điểm số này cao hơn trong nghiên cứu của Tsai (2,52)[17]. Dịch vụ y tế bao gồm tất cả các dịch vụ liên quan đến chẩn đoán và điều trị bệnh hay dịch vụ khám chữa bệnh (DVKCB), phòng bệnh, phục hồi chức năng. Tỉnh Thừa Thiên Huế đã chú trọng đầu tư cả về cơ sở vật chất – trang thiết bị và năng lực cán bộ y tế, tăng cường đầu tư nâng cao chất lượng dịch vụ chăm sóc sức khỏe ban đầu; triển khai quản lý bệnh không lây nhiễm gắn với chăm sóc sức khỏe ban đầu và chăm sóc sức khỏe người cao tuổi tại cộng đồng, kết hợp hài hòa các hoạt động giữa các đơn vị y tế trong huyện; thực hiện tốt tiêu chí quốc gia về y tế xã giai đoạn 2011-2020. Do đó, việc được đánh giá cao về đặc tính Chăm sóc toàn diện - dịch vụ sẵn có là hoàn toàn phù hợp.

Trong khi đó, ngược lại, phần đặc tính chăm sóc toàn diện-dịch vụ cung cấp lại chỉ đạt được trung bình 2,22 điểm, thấp hơn mức trung bình chung (2,5). Điều này phản ánh đúng thực tế là mô hình bệnh tật đang thay đổi theo hướng tỷ lệ mắc bệnh mạn tính, không lây nhiễm, số người cao tuổi tăng nhanh với nhiều bệnh kèm theo, đặt ra yêu cầu cho tuyến y tế cơ sở phải cung cấp nhiều dịch vụ y tế hơn. Tuy nhiên, hệ thống khám chữa bệnh chưa được điều chỉnh cho phù hợp, bảo đảm cho tuyến y tế cơ sở có thể quản lý các bệnh mạn tính, bệnh nhân người cao tuổi, nhằm tăng hiệu lực của hệ thống y tế, giảm chi phí xã hội của những nhóm bệnh này. So sánh với kết quả nghiên cứu của Tsai, người dân Đài Loan đánh giá khá cao chất lượng của nội dung chăm sóc toàn diện- dịch vụ cung cấp này (điểm trung bình 2,69), là nội dung được đánh giá cao thứ hai chỉ sau nội dung tiếp cận ban đầu - sử dụng dịch vụ [17].

Nội dung chăm sóc phối hợp cũng không được người dân đánh giá cao, chỉ đạt được điểm trung bình 2,47, dưới ngưỡng trung bình chung. Điều này phản ánh đúng thực tế hiện nay là hệ thống chúng ta chưa có sự phối hợp tốt giữa Trạm y tế và bệnh viện, các cơ sở y tế công tư khác, dẫn đến chất lượng chăm sóc quản lý bệnh nhân chưa được hiệu quả. Phần lớn các bác sĩ khi được

phỏng vấn trả lời họ hiếm khi nhận được phản hồi khi chuyển bệnh nhận lên các cơ sở khác. Hệ thống chuyển viện cần được củng cố và hoàn thiện thêm.

Tính tổng cộng, chăm sóc ban đầu tại Trạm y tế đạt 19 điểm và điểm mở rộng là 25,75, xấp xỉ nghiên cứu của Tsai tại Đài Loan (điểm chăm sóc ban đầu mở rộng 25,47). [17]

Đối với từng nội dung chăm sóc ban đầu cụ thể, qua phân tích, có một số điểm đáng lưu ý:

- Tiếp cận ban đầu- khả năng tiếp cận dịch vụ: chỉ nhận được số điểm trung bình 2,58 từ phía khách hàng.

Khi được hỏi “Việc lấy hẹn để khám kiểm tra sức khỏe tổng quát tại Trạm y tế có dễ dàng không”, 91,6% người dân trả lời “Có lẽ không”, chỉ có 1,2% trả lời “Có”. Điều này hoàn toàn phù hợp với thực tế là Khám chữa bệnh ngoại trú ở Trạm y tế xã phường chưa có dịch vụ đặt lịch hẹn khám sức khỏe, kể cả khám tổng quát hay là khám vì một vấn đề sức khỏe đặc biệt.

- Chăm sóc liên tục: Thuộc tính này được người dân đánh giá số điểm tương đối cao (2,58). Trạm y tế là đơn vị kỹ thuật đầu tiên tiếp xúc với nhân dân, nằm trong hệ thống y tế Nhà nước. Nhiều nghiên cứu y khoa trên nhiều vùng miền, khu vực khác nhau (Tsai 2010) đều cho thấy rằng nếu càng hỗ trợ và cung cấp nhiều nhân viên y tế chuyên về chăm sóc ban đầu thì bối cảnh và tình hình sức khỏe của người dân càng được cải thiện như giảm tỉ lệ tử vong do các nguyên nhân, ung thư, bệnh tim mạch, đột quỵ và tử vong trẻ sơ sinh... và làm tăng tuổi thọ trung bình. Việc đầu tư cho chăm sóc ban đầu, đặc biệt là đảm bảo chăm sóc liên tục tốt sẽ giúp làm giảm tỉ lệ tử vong, đặc biệt là về những nguyên nhân gây tử vong cần can thiệp các chăm sóc ban đầu như hen suyễn, bệnh tim mạch và viêm phổi. Ngoài ra, chăm sóc liên tục tốt sẽ giúp kiểm soát một số tác động quan trọng khác đến sức khỏe và các yếu tố thuộc về hành vi nguy cơ như hút thuốc lá, sử dụng rượu bia.

- Chăm sóc phối hợp: Đạt số điểm rất thấp về chất lượng của thuộc tính này. Điều này có thể phản ánh thực tế là sự liên kết phối hợp giữa Trạm y tế và các cơ sở y tế khác như là phòng khám tư nhân, bác sĩ chuyên khoa rất lỏng lẻo, hệ thống chuyển viện chưa hoàn chỉnh, đặc biệt là trong hẹn khám chuyên khoa cho bệnh nhân hay là nhận được phản hồi về lần khám chuyên khoa/tư vấn về lần khám đó cho bệnh nhân.

- Chăm sóc phối hợp-hệ thống thông tin: đây là thuộc tính có chất lượng kém nhất theo đánh giá Khách hàng. Điều này cũng dễ hiểu vì hệ thống

khám chữa bệnh ngoại trú ở Việt Nam không lưu trữ hồ sơ bệnh án khám ngoại trú của bệnh nhân ngay cả tại Trạm y tế. Điều này dẫn tới Bác sĩ/nhân viên y tế không thể nắm vững được tiền sử bệnh cũng như các thuốc đã sử dụng của bệnh nhân, làm cho chẩn đoán kém chính xác kèm với có thể xảy ra sai sót, tai biến y khoa do không nắm rõ bệnh sử tiền sử, của bệnh nhân.

Đây là một trong những chức năng chính của chăm sóc ban đầu và đã được thực hiện tốt tại các quốc gia có hệ thống chăm sóc ban đầu mạnh. Sự phối hợp ở đây là phân phối dịch vụ chăm sóc sức khỏe cho người bệnh trong mối liên quan với những thành phần thuộc hệ thống chăm sóc sức khỏe. Để cung cấp những dịch vụ cơ bản và thiết yếu, các chuyên gia chăm sóc ban đầu, ở đây trực tiếp là Bác sĩ tại TYT phải được xem như là người cố vấn cho bệnh nhân, hướng cho bệnh nhân sử dụng các chăm sóc đặc biệt, các phương pháp chẩn đoán và điều trị khác nhau, hệ thống theo dõi liên tục các bệnh mạn tính. Sự phối hợp những nhu cầu chăm sóc sức khỏe của một cá nhân có nghĩa phải đảm bảo tính liên tục và toàn diện của dịch vụ. Những mục tiêu đáng mong đợi về chăm sóc ban đầu đề cập ở trên sẽ đạt được những kết quả tốt nhất nếu người bệnh và nhà cung cấp dịch vụ có mối quan hệ mật thiết lâu dài [10, 11, 15].

- Chăm sóc toàn diện - các dịch vụ cung cấp: Tuy rằng nội dung chăm sóc toàn diện các dịch vụ sẵn có đạt điểm khá cao nhưng nội dung các dịch vụ cung cấp lại không được đánh giá cao từ cả phía khách hàng, chỉ cao hơn nội dung chăm sóc phối hợp (hệ thống thông tin) trong tổng số các nội dung chính của chăm sóc ban đầu. Điều này có thể giải thích là do hiện nay tuy TYT đã được cho phép thực hiện và cung cấp nhiều dịch vụ chăm sóc y tế. Tuy nhiên do hạn chế nguồn lực để duy trì việc cung cấp dịch vụ như là nhân lực, kinh phí

duy trì và phát triển và danh mục thuốc bảo hiểm y tế cho nên không thể cung cấp một số các dịch vụ chăm sóc sức khỏe mặc dù vẫn có đủ năng lực để thực hiện.

Một yêu cầu chính yếu được đặt ra cho chăm sóc ban đầu là khả năng cung cấp tất cả những nhu cầu cần thiết, định hướng chăm sóc con người dù ở bất kì điều kiện khó khăn nào; phối hợp và lồng ghép chăm sóc sức khỏe bất kể dịch vụ được phân phối ở đâu và ai cung cấp chúng. Vì vậy, hai mục tiêu chính của hệ thống dịch vụ sức khỏe chính là sự tối ưu hóa và sự công bằng trong chăm sóc sức khỏe [10, 15, 19]. Tính toàn diện ở đây chính là tập trung vào khía cạnh con người hơn là bệnh tật và các vấn đề sức khỏe khác, từ đó giúp cung cấp các thành phần chăm sóc ban đầu cho cả từng cá nhân và cộng đồng cách thích hợp bất kể cho dù ở các cấp độ sức khỏe nào [10].

- Các đặc tính phụ tập trung vào gia đình, định hướng cộng đồng, tiếp cận trên phương diện văn hóa được đánh giá ở mức trung bình. Nội dung tập trung vào gia đình được đánh giá thấp (Khách hàng 2,27 điểm) vì thực hành chăm sóc ban đầu ở ta vẫn đơn thuần là tập trung vào cá nhân hơn là gia đình nên hiệu quả dịch vụ không cao. Tuy nhiên, với đặc điểm của TYT là phân bố ngay trong cộng đồng dân cư, gần gũi và hiểu rõ những vấn đề xảy ra trong cộng đồng nên nội dung định hướng cộng đồng được đánh giá tạm ổn với 2,79 điểm theo ý kiến khách hàng.

V. KẾT LUẬN

- Phần tiếp cận ban đầu-sử dụng dịch vụ có điểm cao nhất (3,25), tiếp theo lần lượt là mức độ gắn bó (3,17), quá trình chăm sóc (2,87), chăm sóc toàn diện - dịch vụ sẵn có (2,75), chăm sóc phối hợp (2,47), phối hợp thông tin (2,03).

- Tổng điểm chăm sóc ban đầu (19), tổng điểm chăm sóc ban đầu mở rộng (25,75).

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