

Physical examination performed by general practitioners in 5 community health service institutions in Beijing: an observational study

Yun Wei

Capital Medical University <https://orcid.org/0000-0002-4468-5596>

Feiyue Wang

Capital Medical University

Zhaolu Pan

Capital Medical University

Meirong Wang

Capital Medical University

Guanghai Jin

Capital Medical University

Xiaoqin Lu (✉ luxiaoqinlaoshi@126.com)

Capital Medical University <https://orcid.org/0000-0001-6045-3421>

Research article

Keywords: Beijing, consultation, community health service, general practitioner, physical examination

Posted Date: March 11th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-303949/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Version of Record: A version of this preprint was published at BMC Primary Care on January 14th, 2022. See the published version at <https://doi.org/10.1186/s12875-021-01619-1>.

Abstract

Background

Physical examination is a central part of consultation. Evidence showed that clinical use of physical examination in hospital has decreased, but little is known about physical examination performed by general practitioners in community health service institutions.

Objective

This study aimed to investigate general practitioners' performance of physical examination in community health service institutions in Beijing.

Methods

An observational study was conducted in 5 community health service institutions in Beijing, China between November 2019 and January 2020. And 11 participated general practitioners were observed for one workday. Information was recorded including patient characteristics, patient reasons for encounter, physical examinations provided by general practitioners, the length of consultation and time spent on specific activities in consultations.

Results

A total of 682 consultations were recorded from 11 general practitioners. Physical examination occurred in 15.8% of the consultations. Among the recorded 126 examinations, most were distributed in "Head, face, and neck examination" (n = 54, 42.9%) and "Cardiovascular examination" (n = 55, 43.7%), and no physical examination was performed on skin, male genitalia, female breasts and genitalia, and neurological systems. A total of 2823 minutes of activities were recorded. general practitioners only spent 3.1% of their time on physical examination, less than the time spent on taking history (18.2%), test (4.9%), diagnosis (22.7%), therapy (38.4%), and health education (8.6%). The mean length of time spent on physical examination portions was 0.8 ± 0.4 minutes.

Conclusion

Physical examination was infrequently performed by general practitioners in community health service institutions in Beijing. More time and attention were needed for general practitioners performing a careful and appropriate physical examination in primary care.

Introduction

Physical examination (PE) is a key skill for medical diagnosis and a central part of consultation [1], which obtains findings via observation, palpation, percussion, and auscultation [2]. Previous evidence indicated that obtaining a good patient history could result in reaching the correct diagnosis in 70% of the cases, and combined with a thorough physical examination, the correct diagnosis could be identified in 90% of cases [3]. However, with the rapid extension of laboratory tests of greater accuracy, there was a tendency for some clinicians reaching a diagnosis to rely more on laboratory reports and less on PE and clinical judgment [4–6]. It was reported in America that physicians spend less than 18% of their on-duty time on PE for patients admitted to the hospital service [7].

Primary care is an essential component of a high-performing health care system. In recent years, in view of the dilapidated primary care infrastructure and healthcare inequity in China, promoting community health service has become a prioritized policy agenda [8]. Primary care network is being re-strengthened based on the development of community health service institution (CHSI), comprising community health centre (CHC) and community health station (CHS), where general practitioners (GPs) provide medical care, preventive care, health promotion, rehabilitation, health education and family

planning for the citizens [9]. According to statistics in 2019, there were currently 35,013 CHSIs across China, and the number of patient visits in that year was 860 million [10], more than twice the number in 2009 [11].

As more patients visiting to CHSIs, the practice of clinic skills, especially PE, in disease diagnosis and management by GPs becomes more important. Performing PE in general practice not only helps to collect diagnostic information but brings forth various dimensions of humanity [12], which is a form of patient centered care - one of the basic principles of general practice [13]. Considering the truth that the clinical use of PE in hospital has decreased [4–7], there is a concern about GPs' performance of PE in general practice consultations. A study in Australian general practice reported that PE was observed in 64.5% of consultations [2] and another study in Estonia showed that PE was performed in 79% of general practice consultations [14]. In China, the GPs' performance of PE was varied. For instance, a study in Guangzhou reported 72.8% patient visits involving PE [15], while another similar study in Beijing found that PE only took place in 28.0% consultations [16].

Although there were studies reporting the occurrence of PE as a component of work content of GPs, the information of details on the PE in general practice consultations was rarely reported. Moreover, considering the occurrence of PE in general practice consultations in Beijing was different from other countries and regions, we conducted this study to investigate occurrence of PE and explore more detailed information about GPs' performance of PE in general practice consultations in Beijing.

Methods

Ethics statement

Written informed consent was obtained from each participating GP in this study. Verbal consent was obtained from patient because acquisition of written consent could potentially interfere the consultation process. All participants' information was kept confidential and tracked anonymously with identification number only. The present study including the above informed consent was approved by the Medical Ethics Committee of Capital Medical University, Beijing, China.

Setting and participants

The study was conducted in 5 CHSIs in Beijing, which were selected using convenience sampling with the criteria of ensured accessibility and availability for the patients and stable amounts of visits. Purposive sampling was used to recruit the participated GPs with: (a) work experience in general practice clinics for over 2 years; (b) stable amounts of visits; (c) consent to participate in this research. GPs were excluded with less than one workday in general practice clinics each week or still in training period. All consecutive patients visiting the recruited GPs on the observing workday were recruited in our study with oral agreement. Patients were excluded if they come for informal consultations (e.g. consultations with no patient registration or consultations for a illness certificate).

Observation form

The observation form in this study was designed based on the regulations for GPs in CHSIs in Beijing and literature [14–17]. Prior to the study, two GPs were observed to test and modify the observation form. The form after modification included data about the patient characteristics (age, sex, insurance status, etc), patient reasons for encounter (RFEs), PEs provided by GPs, the length of consultation and time spent on specific activities (including history taking, PE, test, diagnosis, therapy, and etc) performed by GPs.

Data collection

Three postgraduate students participated in this study as observers, with one full-time master candidate and two PhD candidates in general practice. A training session was conducted before the observation. During the observation, the observers were seated in the least intrusive corner of consulting room and will not talk to the GPs and patients.

Participating GPs were observed when providing medical care in the general practice consultations with each GP for one workday during November 2019 to January 2020. The observation started from the time of their workday began to the time of their workday ended (from 8 am to 5 pm), excluding time spent in other activities (e.g. lunch, meeting). The length of each consultation was recorded from the patient sitting down to the patient leaving the clinic with the phone timer. The detail PE items and time spent on specific activities were recorded when the GP performed them. When multiple activities were performed at the same time, all activities were recorded in the same interval. After the observation, the information about participated GPs was collected, including age, sex, education, working years, professional position, and training experience.

Data coding

The RFEs was coded using the International Classification of Primary Care, second edition (ICPC-2), which was usually used in primary care settings [18, 19]. This standardized classification is based on codes that are classified in 17 chapters representing body systems and problem areas [20].

Statistical analysis

Descriptive analysis was used to describe the characteristics of patients, GPs and medical activities. Means [with standard deviation (SD)] were used to report continuous variables, while frequencies (%) were used to report categorical variables. The minutes tallied for each activity were manually abstracted, for which summary statistics were converted to percentage of total minutes. The Data management and analysis were performed using Statistical Package for Social Science (SPSS), version 22.0.

Results

Characteristics of GPs

A total of 11 GPs participated in this study and the mean age (with SD) was 39.4 ± 4.3 years. Nine were female. Ten GPs had a bachelor's degree and nine GPs had over 10 years of work experience. There were 6 GPs with senior grade title, 4 GPs with intermediate grade title and one GPs with junior grade title. Nine GPs had the training experience in general practice, with 3 in the standardized residency training program and 6 in on-job training program. The number of patient visits for each GP on one workday was 62.0 ± 13.6 (ranged from 41 to 88). More than half GPs (6/11) saw 51-70 patients (Table 1).

Characteristics of Patients

A total of 682 consultations were observed in this study. Among them, 53.1% were female. The mean age (with SD) of patients was 61.9 ± 14.4 years. The age distribution of all patients (with 2 missing) was 2.1%, 9.8%, 44.6% and 43.3% for those aged 25 years or less, 26 years to 45 years, 46 years to 65 years and over 65 years, respectively. There were 96.2% patients were covered by Chinese basic medical insurance, 0.1% had a business insurance, and only 2.9% patients had no medical insurance. Nearly one third of patients come to GPs with only one problem and 44.1% patients come with three or more problems (table 2).

Patient reasons for encounter

There were 1608 RFEs (2.4 per encounter) were recorded from 682 consultations. Among them, 42.8% were new symptoms for encounter and 53.1% were prior chronic conditions. The top three RFEs in general practice visits were prescriptions for cardiovascular diseases (n=441, 27.5%), respiratory symptoms (n=339, 21.2%) and prescriptions for endocrine diseases (n=320, 20.0%) (table3). The top three RFEs of patients with new symptoms were "R5 cough" (n=111, 16.2%), "R21 throat symptoms" (n = 89, 13.0%) and "R25 sputum/sputum abnormalities" (n=66, 9.6%). The top three health problems in chronic patients were "K86 K87 hypertension" (n=237, 27.9%), "K74 K76 ischemic heart disease" (n=199, 23.4%) and "T93 lipid metabolism disorder" (n=153, 18.0%). Details of these data are shown in supplementary file 1.

Physical examinations provided by GPs

Among the 682 consultations, PE occurred in 108 (15.8%) consultations. In this study, GPs in CHCs and CHSs performed PE at the same frequency (15.8% of consultations in CHCs and 15.9% in CHSs). PE was performed in 17.5% female GPs' consultations and 9.9% male GPs' consultations. GPs with bachelor's degree, more than 10 years working experience, and senior grade title performed PE in a similar frequency (16.1%, 16.8%, and 17.2% of their consultations, respectively). The frequencies of PE performed by GPs with low (≤ 50 visits), medium (50-70 visits), and high (>70 visits) level number of patient visits were 9.2%, 19.7%, and 12.3% of their consultations, respectively (Table 4).

A total of 126 examinations were recorded in the 108 consultations with PE. No patients were provided a general PE. The examinations performed by GPs were mainly distributed in "Head, face, and neck examination" (n=54, 42.9%) and "Cardiovascular examination" (n=55, 43.7%). PE was less performed on the respiratory system (n=7, 5.6%), musculoskeletal system (n=8, 6.4%), and abdominal organs (n=2, 1.6%). No PE was performed on the skin, male genitalia, female breasts and genitalia, and neurological systems. Among the 126 examinations, the blood pressure measurement accounted for the most (n=49, 38.9%), followed by pharynx inspection (n=43, 34.1%). The frequency of rest PEs were less than 10 (Table 5).

A total of 2615 minutes of general practice consultations were recorded with the mean length of consultation was 3.8 ± 3.4 minutes (ranged from 1.0 to 37.0 minutes, n=682). Because simultaneous activities were recorded, a total of 2823 minutes of activities were recorded. GPs only spent 3.1% of their time on PE, which was less than the time spent on taking history (18.2%), test (ordering tests or discussing test results with patients) (4.9%), and health education (8.6%). Most of GPs' time in consultations was spent on diagnosis (entering the diagnosis information into electronic medical record system or informing patients about the diagnosis) (22.7%) and therapy (providing therapy strategies or prescription to patients) (38.4%) (Figure 1). The mean length of time spent in PE portions was 0.8 ± 0.4 minutes (ranged from 0.5 to 2.0 minutes, n=108).

Discussion

Main finding

In this study, we described GPs' performance of PE in general practice consultation through a direct observation in Beijing. The results showed that PE occurred in only 15.8% of general practice consultations. The frequency of PEs in each system varied with most of which distributing in "Head, face, and neck examination" (42.9%) and "Cardiovascular examination" (43.7%) and no PE being performed on the skin, male genitalia, female breasts and genitalia, and neurological systems. In addition, GPs only spent 3.1% of their time on PE, which was less than the time spent on taking history (18.2%), test (4.9%), diagnosis (22.7%), therapy (38.4%), and health education (8.6%).

Comparisons with existing literature

The results obtained during this study demonstrated widespread deficiencies in completeness of PE. Although PE was a fundamental skill of GP in disease diagnosis and health promotion, it was performed by GPs in only 15.8% consultations in this study, which was less than the study in Beijing in 2013 (28.0%) [16]. More than this, comparing with findings in other countries and regions, which showed that PE was observed in 64.5% of general practice consultations in Australia [2], 79.0% in Estonia [14], and 72.8% in Guangzhou, China [15], the GPs in Beijing performed PE infrequently in general practice consultations. This situation may be mainly due to the fact that most encounters in general practice clinics in Beijing were chronic patients coming for regular medication. In Beijing, the patients with chronic diseases are usually managed in CHCs, where a long term of medication refill up to one month is accessible for chronic patients [21]. And there were more chronic patients shifted to CHSs from hospitals for medication refill with the implementation of comprehensive reform of clinic-pharmacy separation in Beijing in 2017 [22]. In this condition, there is no need for PE to help with diagnosis, as their information about disease is already in the electronic medical record system. For patients coming with new symptoms, most were common conditions. In this case, GPs usually diagnose through a history taking.

However, oversight in the PE is a type of medical error, which may be a major contributor to missed or delayed diagnosis, some errors may be remedied if several physicians examine the patients [23]. Even for patients with chronic diseases, PE is

also very important to check for complications. For instance, an analysis of SOLVD (Studies of Left Ventricular Dysfunction) showed that jugular venous distention (JVD) and a third heart sound (S3) were independently associated with progression of heart failure [24]. For patients with diabetes, several of diabetic foot ulceration risk factors (included neuropathy, foot deformity, minor trauma, previous ulceration or amputation) are evaluated during a complete lower extremity examination [25]. Therefore, as more patients with chronic diseases turn to community for long-term management, careful PE on a regular basis is one of the easiest, least expensive and most effective measures for preventing complications.

In addition, the performance of PE in each system is obviously varied. During the consultations, PEs in general practice consultations were mainly distributed in “Cardiovascular examination” and “Head, face, and neck examination”, with blood pressure measurement accounting for the most, followed by pharynx inspection. The completion rate for blood pressure measurement is likely because it is a standard procedure for a GP to give follow-up during the chronic disease management process. However, the performance rate for blood pressure measurement is different from a study on patients in the US, in which 100% patients recalled undergoing a blood pressure measurement at their visit [26]. The finding of high frequency of pharynx inspection was similar with the study in Turkey, in which mouth and pharynx inspection occurred most frequently in general practice clinics [27]. In this study, the most common symptoms of patients were from respiratory system, including “R5 cough”, “R21 throat symptoms”, and “R25 sputum/sputum abnormalities”, which may be the reason of high frequency of pharynx inspection. Many GPs conduct a focused examination based on symptoms, omitting those parts of the examination believed to be low yield. However, previous evidence suggested the possibility that a simple way of strengthening the therapeutic alliance is to perform a few additional components of the PE at every visit, even in the absence of relevant symptoms, additional maneuvers may improve the doctor–patient relationship [26]. Besides, PE was little performed on the musculoskeletal system and abdominal organs, hardly performed on the skin, male genitalia, female breasts and genitalia, and neurological systems. As indicated in previous study, many diseases involving the skin or the nervous system cannot easily be diagnosed except by the PE, and for others the appropriate diagnostic test is indicated by the PE [23]. Therefore, more attention should be paid in PEs in other systems when necessary.

Another finding in this study was that GPs only spent 3.1% of their time on PE, most of GPs’ time in consultation was spent on diagnosis and therapy. This indicated that GPs spent little of their time on PE, which was also reported in a precious study in the US, reporting that only 27.0% of physician time was spent on “direct clinical face time” (including asking history, performing PE and treatment procedure) [28]. The mean time spent in PE was 0.8 minutes in this study, which was a little bit longer than the finding in another study in Guangzhou (0.5 minutes) [15], but quite shorter compared with a study of Estonian family practices, which took 2.0 minutes in PE [14]. Previous study in Turkey indicated sufficient examination time for a first encounter was 20 minutes [27] and no GP spend that much time in this study. Comprehensive and appropriate PE for further investigation of elements about disease could lead to preventive and health promotion counseling [29] and would create opportunities for early diagnosis, in which sufficient time was undoubtedly necessary.

Strengths and limitations

Overall, the results of the present study show a preliminary data about occurrence of PE and detailed information about GPs’ performance of PE in general practice consultations in Beijing, demonstrating that PE was infrequently performed by GPs in Beijing. This may be a reference basis for GPs and managers in CHSIs to improve the quality of primary care.

Our study also has some limitations. First, the generalisability of these findings is uncertain. Our results involved only 11 participated GPs in 5 CHSIs, and a small (consecutive but not random) sample of patients. It is possible that the performance of PE vary with differences in variety of cases, characters of GPs at different work conditions, motivation, and time. This is a preliminary study researching in exploration of GPs performance of PE, investigations in other settings and larger sample are necessary in further researches. Second, the observer sitting in the consultation room may affect the GPs’ working process. Therefore, before the observation, we would explain to the GP that this research will not affect their annual performance appraisal. During the observation, the observers were seated in the least intrusive corner of the consultation room and not to disturb consultations. Third, observations might be influenced by observer bias. We developed a structured encounter form

for observation and modified it through a pilot study. We also provided careful training for observers about principles of observation and information recording to help overcome these limitations before the start of formal observations.

Conclusion

In this study, we found that PE was infrequently performed by GPs in Beijing, China. The results underscore the need for more time and attention for GPs performing a careful and appropriate PE to patients in acute and chronic conditions in primary care. Further researches may concentrate on exploration of the influencing factors of GPs' performance of PE and give suggestions for improvement.

Abbreviations

PE, physical examination; GPs, General Practitioners; CHSI, community health service institution; CHC, community health centre; CHS, community health station; RFEs, reasons for encounter; ICPC-2, International Classification of Primary Care second edition; SD, standard deviation; SPSS, Statistical Package for Social Science; JVD, jugular venous distention; S3, third heart sound

Declarations

Ethics approval and consent to participate

The confidentiality of the study participants was guaranteed. With a full explanation of the purpose and procedure of the study, signed consent forms from general practitioners (GPs) and verbal consent from patients which was documented by recording with patients' permission were obtained prior to the study. The present study including the above informed consent was approved by the Medical Ethics Committee of Capital Medical University, Beijing, China.

Consent for publication

Not applicable.

Availability of data and materials

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

Competing interests

The authors declare that they have no competing interests.

Funding

This work was supported by the Capital General Practice Research Project (17QK06). The funding organization had no role in the design, conduct, analysis and interpretation or preparation of this study.

Authors' contributions

WY, JGH, and LXQ designed the study. LXQ obtained funding and ethical approval. WY collected and analyzed the data. WY, PZL and WMR were involved in data collection. WY drafted the manuscript. JGH and LXQ contributed to the interpretation of the results and critical revision of the manuscript for important intellectual content and approved the final version of the manuscript. All authors have read and approved the final manuscript.

Acknowledgements

The authors thank the Capital General Practice Research Project (17QK06) for the support. The authors also thank all of the participants for their support and help to our research.

References

1. Grüne S. Anamnese und körperliche Untersuchung [Anamnesis and clinical examination]. *Dtsch Med Wochenschr.* 2016;141(1):24-27. doi:10.1055/s-0041-106337
2. Kocaballi AB, Coiera E, Tong HL, White SJ, Quiroz JC, Rezazadegan F, et al. A network model of activities in primary care consultations. *J Am Med Inform Assoc.* 2019;26(10):1074-1082. doi:10.1093/jamia/ocz046
3. Coulehan JL, Block MR. *The medical interview. Introduction: The poor historian, third edition.* Philadelphia: F.A. Davis Company, 1997:xix.
4. Jauhar S. The demise of the physical exam. *N Engl J Med* 2006;354(6):548-551. doi:10.1056/NEJMp068013
5. Ende J, Fosnocht KM. Clinical examination: still a tool for our times? *Trans Am Clin Climatol Assoc.* 2002;113:137-150.
6. Feddock CA. The lost art of clinical skills. *Am J Med* 2007, 120:374-378. doi:10.1016/j.amjmed.2007.01.023
7. O'Leary KJ, Liebovitz DM, Baker DW. How hospitalists spend their time: insights on efficiency and safety. *J Hosp Med.* 2006;1(2):88-93. doi:10.1002/jhm.88
8. Wang HH, Wang JJ, Wong SY, Wong MC, Mercer SW, Griffiths SM. The development of urban community health centres for strengthening primary care in China: a systematic literature review. *Br Med Bull.* 2015;116:139-153. doi:10.1093/bmb/ldv043
9. Ministry of Health and National Administration of Chinese Traditional Medicine. Basic standards of urban community health center and station [in Chinese]. 2006. http://www.gov.cn/zwgk/2006-08/10/content_359200.htm. Accessed September 8, 2020.
10. National Health Commission of the People's Republic of China. Statistical Communique on the Development of Health and Family Planning in China in 2019 [in Chinese]. 2020. <http://www.nhc.gov.cn/guihuaxxs/s10748/202006/ebfe31f24cc145b198dd730603ec4442.shtml>. Accessed September 28, 2020.
11. Ministry of Health. Statistical Communique on the Development of Health in China in 2009 [in Chinese]. 2010. http://www.gov.cn/gzdt/2010-04/09/content_1576944.htm. Accessed September 28, 2020.
12. Kelly MA, Freeman LK, Dornan T. Family Physicians' Experiences of Physical Examination. *Ann Fam Med.* 2019;17(4):304-310. doi:10.1370/afm.2420
13. European Academy of Teachers in General Practice (Network within WONCA Europe). The European Definition of General Practice/Family Medicine. 2005. <http://www.woncaeurope.org/sites/default/files/documents/Definition%20EURACTshort%20version.pdf>. Accessed September 8, 2020.
14. Tähepold H, Maaros HI, Kalda R, van den Brink-Muinen A. Structure and duration of consultations in Estonian family practice. *Scand J Prim Health Care.* 2003;21(3):167-170. doi:10.1080/02813430310000708
15. Zhong C, Luo Z, Liang C, Zhou M, Kuang L. An overview of general practitioner consultations in China: a direct observational study. *Fam Pract.* 2020;37(5):682-688. doi:10.1093/fampra/cmaa039
16. Jin G, Zhao Y, Chen C, Wang W, Du J, Lu X. The length and content of general practice consultation in two urban districts of Beijing: a preliminary observation study. *PLoS One.* 2015;10(8):e0135121. doi:10.1371/journal.pone.0135121
17. Beijing Municipal Health Commission. Opinions on Accelerating the Development of Community Health Services (in Chinese). 2000. <http://wjw.beijing.gov.cn/> Accessed September 8, 2020.
18. Kaneko M, Van Boven K, Takayanagi H, Kusaba T, Yamada T, Matsushima M. Multicentre descriptive cross-sectional study of Japanese home visit patients: reasons for encounter, health problems and multimorbidity. *Fam Pract.* 2020;37(2):227-233. doi:10.1093/fampra/cmz056

19. Meynard A, Broers B, Lefebvre D, Narring F, Haller DM. Reasons for encounter in young people consulting a family doctor in the French speaking part of Switzerland: a cross sectional study. *BMC Fam Pract.* 2015;16:159. doi:10.1186/s12875-015-0375-x
20. Classification Committee of the World Organization of Family Doctors. ICPC-2: International Classification of Primary Care. 2nd ed. Oxford: Oxford University Press, 1998
21. Beijing municipal health commission. Measures to improve medical services in primary care institutions. 2019. http://wjw.beijing.gov.cn/zwgk_20040/ztl/fjzl/201912/t20191217_1244319.html. Accessed September 8, 2020.
22. The People's Government of Beijing Municipality. Implementation plan comprehensive reforms of clinic-pharmacy separation. 2017. http://www.beijing.gov.cn/zhengce/zhengcefagui/201905/t20190522_60088.html. Accessed September 8, 2020.
23. Vergheze A, Charlton B, Kassirer JP, Ramsey M, Ioannidis JP. Inadequacies of Physical Examination as a Cause of Medical Errors and Adverse Events: A Collection of Vignettes. *Am J Med.* 2015;128(12):1322-4.e3. doi:10.1016/j.amjmed.2015.06.004
24. Drazner MH, Rame JE, Stevenson LW, Dries DL. Prognostic importance of elevated jugular venous pressure and a third heart sound in patients with heart failure. *N Engl J Med.* 2001;345(8):574-581. doi:10.1056/NEJMoa010641
25. Johnson R, Osbourne A, Rispoli J, Verdin C. The Diabetic Foot Assessment. *Orthop Nurs.* 2018;37(1):13-21. doi:10.1097/NOR.0000000000000414
26. Duan L, Mukherjee EM, Federman DG. The physical examination: a survey of patient preferences and expectations during primary care visits. *Postgrad Med.* 2020;132(1):102-108. doi:10.1080/00325481.2020.1713618
27. Güldal D, Ulusel B, Ozçakar N, Yeniçeri N, Dontlu C. The challenge of clinical interviewing and physical examination performance for general practitioners in Turkey. *Fam Med.* 2005;37(5):354-359.
28. Toscano F, O'Donnell E, Broderick JE, May M, Tucker P, Unruh MA, et al. How Physicians Spend Their Work Time: an Ecological Momentary Assessment. *J Gen Intern Med.* 2020;35(11):3166-3172. doi:10.1007/s11606-020-06087-4
29. Fried LP. Health promotion and disease prevention in the care of older adults: preventive practice in primary care. *Md Med J*, 1989 Feb;38(2):121-123.

Tables

Table 1. Demographic characteristics of participated GPs (n=11)

Characteristics	Frequency	Percentage (%)
Institution		
CHC	9	81.8
CHS	2	18.2
Gender		
Male	2	18.2
Female	9	81.8
Education		
Bachelor's degree	10	90.9
Master's degree	1	9.1
Working years		
≤10	2	18.2
>10	0	0
Professional positions		
Junior grade title	1	9.1
Intermediate grade title	4	36.4
Senior grade title	6	54.5
GP training		
Standardized training	3	27.3
On-job training	6	54.5
No training experience	2	18.2
Patient volume on the observation unit		
≤50	2	18.2
51-70	6	54.5
>70	3	27.3

Abbreviation: GP, general practitioner; CHC, community health centre; CHS, community health station

Table 2. Demographic characteristics of patients in the study (n=682)

Characteristics	Frequency	Percentage (%)
Gender		
Male	320	46.9
Female	362	53.1
Age (years)		
≤25	14	2.1
26-45	67	9.8
46-65	304	44.6
≥65	295	43.3
Missing	2	0.3
Social medical insurance		
Basic medical insurance	656	96.2
Business insurance	1	0.1
Other insurance	5	0.7
Without medical insurance	20	2.9
Number of problems discussed		
1	204	29.9
2	177	26.0
3 or over	301	44.1

Table 3. Frequency of reasons for encounter (classified based on the chapters in the ICPC- 2) (n=1608)

Reasons for encounter (ICPC- 2)	Symptoms, complaints	Prescription for chronic disease	Others (test, therapeutic consultation)
A general & unspecified	10 (0.6)	0 (0)	73 (4.5)
B blood, blood forming	0 (0)	1 (0.1)	0 (0)
D digestive	140 (8.7)	1 (0.1)	0 (0)
F eye	27 (1.7)	0 (0)	0 (0)
H ear	2 (0.1)	0 (0)	0 (0)
K circulatory	13 (0.8)	441 (27.4)	0 (0)
L musculoskeletal	40 (2.5)	58 (3.6)	0 (0)
N neurological	16 (1.0)	9 (0.6)	0 (0)
P psychological	42 (2.6)	1 (0.1)	0 (0)
R respiratory	339 (21.1)	5 (0.3)	0 (0)
S skin	36 (2.2)	0 (0)	0 (0)
T endocrine, metabolic and nutritional	3 (0.2)	320 (19.9)	0 (0)
U urology	16 (1.0)	0 (0)	0 (0)
W pregnancy, childbirth, family planning	1 (0.1)	0 (0)	0 (0)
X female genital system and breast	0 (0)	0 (0)	0 (0)
Y male genital system	0 (0)	14 (0.9)	0 (0)
Z social problems	0 (0)	0 (0)	0 (0)
Total	685 (42.6)	850 (52.9)	73 (4.5)

Abbreviation: ICPC- 2, International Classification of Primary Care, second edition.

Table 4. Performance frequency of physical examination by GPs and time length

Characteristics of GPs	Number of visits	Performance frequency of PE (percentage, %)
Institution		
CHC	518	82 (15.8)
CHS	164	26 (15.9)
Gender		
Male	151	15 (9.9)
Female	531	93 (17.5)
Education		
Bachelor's degree	628	101 (16.1)
Master's degree	54	7 (13.0)
Working years		
≤10	147	18 (12.2)
>10	535	90 (16.8)
Professional positions		
Junior grade title	88	11 (12.5)
Intermediate grade title	268	41 (15.3)
Senior grade title	326	56 (17.2)
GP training		
With training experience	490	82 (16.7)
No training experience	192	26 (13.5)
Patient visits		
≤50	87	8 (9.2)
51-70	360	71 (19.7)
>70	235	29 (12.3)
Total	682	108 (15.8)

Abbreviation: GP, general practitioner; PE, physical examination;

Table 5. Components of physical examination and frequency of observation in 108 encounter patients

Components of physical examination	Frequency	Percentage (%)
General examination	0	0.0
Skin examination	0	0.0
Head, face, and neck examination		
Head and face inspection	1	0.8
Corneal and conjunctival examination	3	2.4
Pupillary light responses	1	0.8
Visual fields	1	0.8
Ophthalmoscopic examination	1	0.8
Mouth inspection	3	2.4
Pharynx inspection	43	34.1
Thyroid palpation	1	0.8
Cardiovascular examination		
Blood pressure measurement	49	38.9
Pulse rate	1	0.8
Heart sounds auscultation	5	4.0
Respiratory examination		
Anterior chest percussion	2	1.6
Breath sounds auscultation of anterior chest	5	4.0
Abdominal examination		
Abdominal inspection	2	1.6
Musculoskeletal examination		
Lumbar percussion	1	0.8
Spine percussion	2	1.6
Inspection of hands	3	2.4
Inspection of lower limbs	2	1.6
Male genitalia examination	0	0.0
Female breasts and genitalia examination	0	0.0
Neurological examination	0	0.0
Total	126	100.0

Figures

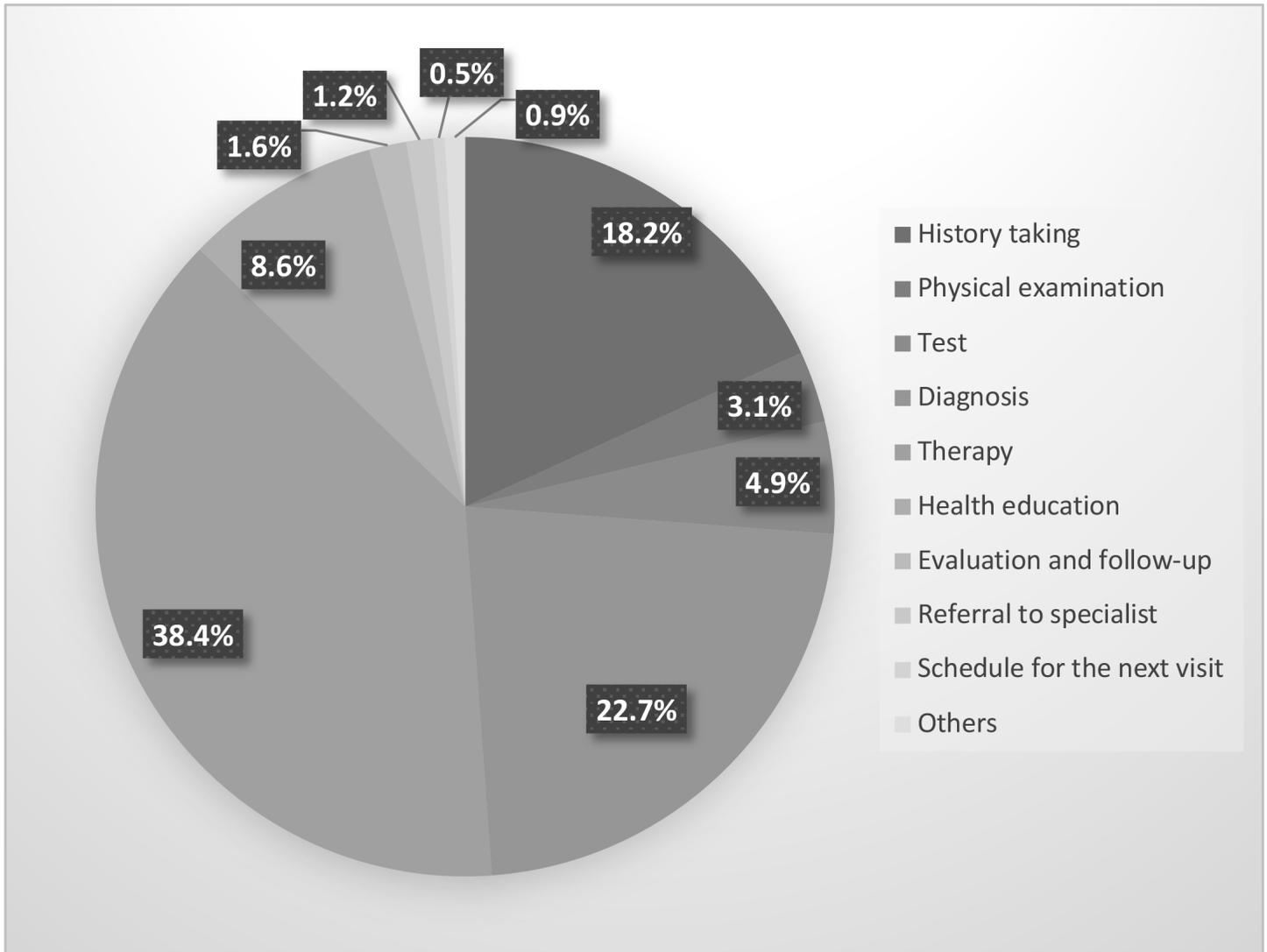


Figure 1

Time distribution of general practitioners' activities in general practice consultations (n=2823 minutes)

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Supplementaryfile1.The top 20 RFEs and health problems.docx](#)