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# Training needs assessment for noncommunicable disease management in refugee health centres in Turkey

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## Preface

The conflict in the Syrian Arab Republic has caused one of the world's largest and most dynamic displacement crises, affecting millions of lives. WHO is supporting the response to the crisis through its operations in Turkey, which comprise a cross-border response from the field office in Gaziantep and a health response to refugees in Turkey, coordinated from the WHO Country Office in Ankara. In north-western Syria, WHO is implementing interventions such as the delivery of vital medicines and medical supplies and providing support for the operational costs of health facilities and capacity-building of health staff. Through the Refugee Health programme in Turkey, efforts have been made to strengthen the national health system through integrating Syrian health workers and translators, build capacity for mental health care, provide linguistic and culturally sensitive health services, and support home care for older refugees and those with disabilities.

Activities of the programme are defined within the scope of the Regional Refugee and Resilience Plan (3RP), a broad partnership platform for over 270 development and humanitarian partners to provide coordinated support in countries bordering Syria that are heavily impacted by the influx of refugees. This platform capitalizes on the knowledge, capacities and resources of humanitarian and development actors to provide a single strategic, multisectoral and resilience-based response. Supported by several donors, WHO's activities are complementary to the SIHHAT (Improving the health status of the Syrian population under temporary protection and related services provided by Turkish authorities) health and well-being project, a joint initiative by the European Union and Ministry of Health of Turkey that aims to improve health-care services for Syrian refugees in the country. This project operates under the European Union's Facility for Refugees in Turkey and focuses on strengthening the provision of primary and secondary health-care services to Syrian refugees, building and supporting a network of refugee health centres across the country, and employing additional health personnel, including Syrian doctors and nurses.

In November 2018 the Refugee Health programme conducted the Workshop on Refugee and Migrant Health in Turkey: Survey and Research Consultation to identify gaps in the information and evidence required for programme development and adaptation and for informing policies on migrant health in Turkey. The Workshop brought together more than 57 national and international experts from academia, Ministry of Health, United Nations agencies and WHO collaborating centres and led to the formulation of the programme's research framework. Within this framework, a series of studies were implemented in the fields of mental health, health literacy, women and child health, health workforce and noncommunicable diseases. This study, Training needs assessment for noncommunicable disease management in refugee health centres in Turkey, is one of the studies implemented within the RHP research framework.

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## Abbreviations

CVD	cardiovascular disease
FGD	focus group discussion
MBYS	Medical Examination Information System (Muayene Bilgi Yönetim Sistemi)
MERNIS	Central Population Registration System (database)
NCD	noncommunicable Disease
RHC	refugee health centre
RHTC	refugee health training center
SD	standard deviation
SIHHAT	Improving the health status of the Syrian population under temporary protection and related services provided by Turkish authorities (project)
UNHCR	Office of the United Nations High Commissioner for Refugees

## Executive summary

Turkey hosts about 3.6 million Syrian refugees, who are given access to free primary health-care services through the refugee health centre (RHC) mechanism. The RHC mechanism is implemented through the Ministry of Health's Improving the health status of the Syrian population under temporary protection and related services provided by Turkish authorities (SIHHAT) project. As of March 2020, the SIHHAT project employed 708 Syrian physicians and 956 Syrian nurses to provide language and culturally appropriate services to Syrian refugees. In collaboration with the Turkish Ministry of Health, WHO implemented tailored adaptation training programme for Syrian health professionals to prepare them for employment in the Turkish health system. Through this programme, 638 doctors, 806 nurses, 927 translators and 337 auxiliary staff have now been trained and are providing services in 184 RHCs located in 29 provinces. RHCs provide basic primary health care services free of charge to Syrian refugees. All doctors and nurses in RHCs are Syrian nationals and translators are available to help the refugees to access services. In addition, there are extended RHCs, where, in addition to basic primary health-care services, Syrians can obtain selected laboratory services and specialized health-care services. Finally, in seven provinces there are refugee health training centers (RHTCs) where Syrian patients can receive the full range of extended health care services and selected imaging services. These centers are also used as a training centers for health-care personnel.

The survey aimed to improve noncommunicable disease (NCD) monitoring and management services by identifying the training and service needs to provide effective and sustainable health services in RHCs. The specific objectives were to:

- determine the training needs and service gaps for NCD monitoring and management
- develop recommendations to improve NCD monitoring and management.

This mixed-methods framework of this study included both quantitative and qualitative surveys. For the quantitative component, a needs assessment survey was conducted of all Syrian physicians and nurses employed through the "Improving the health status of the Syrian population under temporary protection and related services provided by Turkish authorities" project (SIHHAT project). Of the 1531 Syrian health-care personnel working in RHCs, the response rate was 54.3%: 334 physicians (50.8%) and 498 nurses (57.0%). For the qualitative component, structured focus group discussions (FGDs) with groups of either patients or health-care providers were conducted to obtain information on their perceptions of needs related to NCD management and monitoring. A total of 220 health-care personnel participated in 20 FGDs and 98 patients participated in nine FGDs in the provinces of Adana, Ankara, Bursa, Hatay, İstanbul, Izmir, Konya, Mardin and Şanlıurfa.

Of the participants of the quantitative study, 19.2% of Syrian physicians and 42.6% of Syrian nurses were women. The mean ( $\pm$  standard deviation (SD)) age of physicians was  $41.7 \pm 11.1$  years (median: 40.0; range: 19.0–84.0) and the mean ( $\pm$  SD) age of nurses was  $36.0 \pm 9.2$  years (median: 33.0; range: 19.0–84.0).

Of the methods for NCD management, 61.7% of physicians and 69.5% of nurses reported that they always measured blood pressure; 27.8% of physicians and 43.2% of nurses reported they always measured blood glucose; and 38.9% of physicians and 37.8% of nurses reported that they always use cardiovascular risk scoring. Of the body measurements (height, weight and waist circumference), 44.0% of both physicians and nurses used weight measurement as an NCD management tool. Across health-care institutions, a higher proportion of health-care personnel used these tools to manage NCDs at extended RHCs compared with RHCs and RHTCs. In FGDs, both health-care personnel and patients said that that blood pressure measurement was used most often used for NCD management and cardiovascular risk scoring was used

least often. It was apparent that Syrian health-care personnel are not sure how to score for cardiovascular risk.

Regarding risk factors for NCDs, most physicians and nurses reported that they always ask patients about their regularly used medications (93.7% and 89.2%, respectively) and tobacco consumption (85.0% and 76.1%, respectively) and the lowest proportions always asked patients about their physical activity (67.1% and 61.2%, respectively) and alcohol consumption (48.2% and 59.0%, respectively). In all, 76.0% of health-care personnel reported that they always advise patients on healthy lifestyle choices. However, in FGDs findings were different. Health-care personnel said that they only enquire about NCD risk factors related to specific health problems; otherwise, they do not regularly consider NCD risk factors in NCD management. They also said that they advise patients on selected healthy lifestyle choices based on their condition and use them as a motivational tool to help patients adhere to medications, diet and other measures to improve their health status. In FGDs, patients requested more support personnel, such as dietitians, to advise them on healthy lifestyle choices.

Most physicians and nurses reported that they had received training in managing specific NCDs before they started working in RHCs: 55.7% of physicians and 57.0% of nurses had received training for managing hypertension (high blood pressure); 66.8% of physicians and 65.7% of nurses for diabetes mellitus; and 75.1% of physicians and 72.5% of nurses for cardiovascular diseases (CVDs). However, 18.0% of physicians and 17.9% of nurses did not feel competent to manage patients with hypertension; 21.0% of physicians and 30.1% of nurses to manage patients with diabetes mellitus; and 52.1% of physicians and 63.5% of nurses to manage patients with CVD. In survey participants, the most common reason for incompetency was reported as "lack of education"; in FGDs, the need for further training in NCD management was raised.

In all, 35.6% of physicians and 40.6% of nurses said that they do not regularly use a standard evidence-based guideline for NCD management. They reported using laboratory testing for making the initial diagnosis and then prescribe medication, but do not provide regular follow-up for their patients. Lack of follow-up was reported as a major problem by both health-care personnel and patients. Patients preferred to visit RHCs because they do not experience language barriers and do not need to wait in long queues. However, at RHCs they feel unable to fully explain their health problems and do not fully understand which health-care services are available to them. Furthermore, instead of prevention and promotion, their health-care expectations are for treatment and medication.

Syrian health-care personnel at RHCs considered that that 6–10 minutes is long enough for a patient consultation. Although they did not actually have a heavy workload, physicians considered their workload to be heavy. The MBYS (*Muayene Bilgi Yönetim Sistemi*) electronic medical recording system was not effectively utilized. Health-care personnel highlighted that a lack of patient compliance with follow-up is an important problems at RHCs. Mean ( $\pm$  SD) NCD management scores for physicians and nurses were 53 (0.757) and 57 (0.814), respectively (range: 14–70). Communication scores were 38 (0.844) and 39 (0.867), respectively (range: 9–45) and correlated with NCD management scores.

Syrian patients do not have satisfactory levels of knowledge or awareness about NCDs or healthy lifestyle choices. Patients do not know which health services they can obtain at RHCs. This needs assessment found that Syrian refugees would benefit from educational programmes on healthy lifestyle choices, NCDs and health-care services provided in RHCs.

For health-care personnel, NCD management scores and health communication scores were unsatisfactory; besides continuing medical their education with training on NCD management and healthy lifestyle choices, health-care personnel would benefit from training in health communication. This would raise their awareness and knowledge of the importance of healthy lifestyle choices as a prevention and promotion strategy for all patients. To improve NCD management, strengthened coordination between RHCs and



healthy living centres is needed. Physicians and nurses would significantly benefit from training programmes on the use of evidence-based guidance and diagnostic algorithms as a tool for NCD management. The effective use of electronic medical recording systems (i.e. MBYS), integrating MBYS with the consultation and follow-up scheduling system, and employing medical secretaries to manage the MBYS would significantly improve the effectiveness of the health-care system and eliminate its current shortcomings. The focus of Syrian health-care personnel and patients towards treatment and medication is a major obstacle to establishing effective primary health-care services in RHCs. Community-wide programmes should aim to refocus perceptions of health care towards prevention and promotion in the Syrian community and Syrian health-care providers. Establishing effective primary health-care services should be the principle strategy for NCD management.

## Introduction

### Background

Turkey has received migrants throughout history (1). Owing to integrative factors such as religion and language, the flow of migration has mostly been from central Asia, the Caucasus and the Middle East (2). Since 2011 Turkey has faced one of the largest refugee crises[influx?]. According to the Office of the United Nations High Commissioner for Refugees (UNHCR), as of December 2019 5 634 791 Syrians had left their country as refugees, with Turkey hosting an estimated 65.1% of this refugee population (3 667 435 Syrians). This is the largest number of refugees/migrants hosted by a single country since the Second World War (3).

Although there is no internationally agreed definition, migration is defined as the movement of individuals or groups, either internationally or within their own country, regardless of the underlying cause. The United Nations Population Fund states that migration may occur for natural, social, economic or political reasons (4–6). On the other hand, refugees are defined as people who have been forced to leave their home country due to oppression, violence or war (7). The first United Nations conference on refugees was held in 1951, and its Final Act (resolution 2545) is the foundation of the international regulations on refugees (8,9). Based on this resolution, UNHCR defined refugees as people who are in justifiable fear of being abused due to their race, religion, nationality, or connection to a specific social or political group and are unable or unwilling to return to their own country (7). An asylum-seeker is a person who has requested international protection for similar reasons, and whose refugee status is yet to be assessed and approved (2). After evaluation of the legal requirements, eligible asylum-seekers are given international refugee status, through which they can benefit from all of the associated rights and freedoms (10). Syrians, who have usually arrived under mass-imposed migration, can apply to the Government of Turkey for temporary protection under the 2014 Temporary Protection Regulation (11).

The Turkish Constitution guarantees every person the right to live in a healthy and stable environment (12), and Turkish laws concerning refugees are highly compatible with United Nations regulations (13). WHO considers it necessary to protect and promote health in societies (especially for vulnerable groups, such as migrants), treat diseases, and build and maintain a healthy society (14). Consistent with these principles of responsibility and social equality, all Syrian refugees are entitled to receive comprehensive health services in Turkey. In this regard, Turkey has shown exemplary openness and made considerable efforts to support Syrian refugees despite the strain placed on its social services. In this regard, Turkish Government has facilitated their access to vital public services, including health, housing, education and social assistance (15). For Syrians who have registered temporary protection status, health services are offered within the framework of the Principles regarding Health Services to be Granted to those under Temporary Protection, dated 25 March 2015, enacted with the Approval of the Ministry of Health (No. 2875).<sup>1</sup> The large influx of refugees has seriously challenged the national health-care system, resulting in overloaded capacity at all levels. Further, the cultural and linguistic barriers faced by Syrians in accessing health-care services have limited health-system responsiveness (16). In order to provide more efficient and qualified primary health-care services to Syrians under temporary protection in Turkey, RHCs have been opened based on the 2015 Regulation on Community Health and Affiliated Units (11). The Government of Turkey, through the Ministry of Health, established the RHC mechanism to meet the health-care needs of registered refugees.<sup>2</sup> Managed under the SIHHAT project, RHCs provide free primary health-care services in 29 provinces with

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<sup>1</sup> This document is not publicly available.

<sup>2</sup> Officially recorded by the Government of Turkey as Syrians under temporary protection.

a high Syrian population density; in September 2019 there were 165 RHCs throughout Turkey (17). As reported in the UNHCR Regional refugee resilience plan (3RP) 2018–2019 in response to the Syrian crisis (15), since 2017 more than 1500 nurses and physicians have completed adaptation training to work in the Turkish health system and most have been hired by the Ministry of Health to provide health care for Syrian refugees (17). The RHC structure was based on the structure of primary health-care services in Turkey and, therefore, RHCs and primary health-care centres have a similar organization. However, there are fundamental differences in how services are financed, the profile of health-care personnel and the target population. Primary health-care services, which are coordinated by the Ministry of Health and financed through the General Budget of Social Security and Health Personnel, are provided by Turkish nationals and foreigners that have accreditation. In contrast, RHCs are financed through the SIHHAT project (funded by the European Union and other donors) in addition to the Turkish Government and health-care services are primarily provided by Syrian nationals. Syrian health-care personnel are recruited from the refugee population via the SIHHAT project. Successful applicants work in RHCs and receive training to orient them to work within to the Turkish health system. In collaboration with the Ministry of Health, the WHO Refugee Health Programme is implementing a tailored adaptation training programme for Syrian health professionals to meet the additional need for human resources in the Turkish health system. WHO adaptation training is delivered in WHO supported refugee health training centres (RHTCs), which also provide health-care services. Syrian refugees register at and receive free health-care services from RHCs and family health centres and receive necessary medications free of charge from community pharmacies. The health-care services are delivered by trained Syrian physicians and nurses, with trained full-time Turkish–Arabic translators available to help them access the services. In addition, Syrians have the right to receive health services in their provinces of residence, from public hospitals operating under the Ministry of Health and from private hospitals such as Turkish citizens following referral from public hospitals..

Each year, approximately 41 million people worldwide die from NCDs, representing 71% of all deaths (16). Around 85% of all premature deaths in people aged between 30 and 69 years in low- and middle-income countries are due to NCDs. CVDs cause the most deaths of all NCDs, at 17.9 million deaths per year globally . In comparison, diabetes causes 1.6 million deaths each year.

While the traditional priorities in humanitarian assistance remain unchanged, the NCD burden of displaced populations is increasing (18). NCDs usually remain undiagnosed during migration but, their long morbidity periods, have long-lasting effects on society. During humanitarian crises, there may be an increased prevalence of chronic diseases such as diabetes mellitus, hypertension and cancer due to a lack of health-care services (13). In 2011 NCDs accounted for 77% of the total deaths in Syria, of which 44% were due to CVDs (19). A study in 2015 demonstrated that more than half (50.3%) of Syrian refugee households living in Jordan had a member with an NCD, and the caseload of Syrian refugees in Jordan with NCDs was estimated at more than 90 000 (20). In 2016 an investigation of the health condition of Syrian refugees in Turkey concluded that 6.4% had a CVD and 25.6% had hypertension (18). Another study in 2018 reported that 21.8% of adult Syrian refugees in northern Jordan suffer from at least one NCD: 14.0% from hypertension and 9.2% from diabetes (21). According to WHO, 40.5 million (71%) of the 56.9 million global deaths in 2016 were due to the four main NCDs: CVDs, cancer, diabetes and chronic lung diseases (16). Although NCDs are preventable diseases, they have serious public health and economic consequences. However, it is possible to reduce these adverse effects with evidence-based, cost-effective interventions, including methods for early detection and diagnosis of NCDs, along with nonpharmacological and pharmacological approaches to reducing risk factors. Efficient use of limited health-care resources, sustainable health financing mechanisms, access to basic diagnostic tests and essential medicines, and well-organized medical information and referral systems are imperative to provide equitable care for people with or at risk of NCDs. In addition, NCD management requires long-term care that is proactive, patient-centred, community-based and sustainable, but can only be delivered equitably

through health systems based on primary health-care provision (18). The impact of NCDs on the health economics is as important as their impact on quality of life. It is much cheaper and more beneficial for national health systems to take preventive measures against NCDs than to treat patients once they have these diseases.

Within primary health care, NCD management can be improved through effective intervention programmes. During humanitarian emergencies, the methods of intervention depend on characteristics of the crisis, the impact of the crisis on the country, and the existing health system and its resources, including medical staff and accessibility of health services. The priority is to minimize levels of morbidity and mortality and address the most urgent needs. As such, NCD management is strongly focused on prevention (22). High-risk groups must be identified, including babies, children, pregnant and puerperal women, single women, disabled people, elderly people, people with chronic disease and people with language barriers. Interventions should be context specific and tailored to the target population to address the NCD burden and gaps in health-care provision in each setting. Rather than in emergencies only, WHO has prioritized tackling NCDs (CVDs – ischaemic heart disease and hypertension; cancer; diabetes; and chronic respiratory diseases – asthma and chronic obstructive pulmonary disease) in the global public health response in general (22).

The Turkish Ministry of Health aims to reduce the morbidity and mortality of NCDs and risk factors for NCDs. Through field evaluation visits to RHCs, WHO established that primary health-care services lack an active NCD management framework (23). To address the gaps in NCD monitoring and management in RHCs, the Ministry of Health requested WHO support to identify service and training needs for optimizing health-care service provision. The identified needs would guide the Ministry of Health and the SIHHAT project in implementing interventions to establish a sustainable NCD management framework for RHCs. NCD needs assessment is part of the research framework of the WHO Refugee Health Programme, which was developed in consultation with the Ministry of Health and is being implemented to fill knowledge gaps and generate evidence related to the health-care services provided to Syrian refugees within the framework of the Regional refugee and resilience plan (15). Although multiple causative and predisposing factors affect the quality of NCD services, this study did not aim to investigate these or to improve the quality of health-care services. Since 2015 the Ministry of Health has implemented planning and policy measures to improve the quality of health-care services focused on NCDs; in recognition of the success of these measures and the strategic approach, the Turkish Ministry of Health received the 2018 Service Award by the United Nations Interagency Task Force on the Prevention and Control of NCDs (24). However, RHCs have not benefited from these successes. Therefore, the Ministry of Health requested the SIHHAT project and WHO to identify training and service needs and priorities in order to improve NCD monitoring policies and the quality of NCD services at RHCs.

## Study aim and objectives

This survey aimed to improve noncommunicable disease (NCD) monitoring and management services by identifying the training and service needs to provide effective and sustainable health services in RHCs. Its specific objectives were to:

- determine the training needs and service gaps for NCD monitoring and management
- develop recommendations to improve NCD monitoring and management.

## Methodology

This study used a mixed-methods framework with quantitative and qualitative components. The quantitative component was a needs assessment survey of physicians and nurses and the qualitative component involved structured FGDs to learn the opinions of both patients and health-care providers on the needs for NCD management and monitoring.

### *Study population*

The study population included Syrian physicians and nurses working in RHCs established/supported under the SIHHAT project in Turkey and patients who receive services from the RHCs. Currently, the SIHHAT project covers 29 provinces of Turkey and employs a total of 1531 health-care personnel (658 physicians (534 general practitioners and 124 specialists) and 873 nurses) and treats 1.7 million patients each year. On average, 6733 patients per day receive health-care services at RHCs. Table 1 shows the distribution of health-care personnel across the provinces.

### *Sampling frame*

For the quantitative component, an online questionnaire was distributed to all 1531 doctors and nurses working at RHCs. Participants were not paid to take part in the study. For the qualitative component, 20 FGDs were held with health personnel and nine with patients in nine provinces with the largest refugee populations.

### *Data collection, cleaning and analysis*

Data were collected through collaboration between the Ministry of Health, Gazi University and WHO technical staff. Prior to commencing data collection, a one-day meeting for provincial health administrators took place to share basic information about the study's aim, objectives, methodology and data collection process, as well as to resolve any practical issues. The tools used in collecting and analysing data were:

1. a databook that included the data cleaning and analysis protocol
2. a needs assessment questionnaire on NCD management
3. guidelines and questions for FGDs.

For quantitative data collect, a self-administered electronic needs assessment questionnaire was based on a questionnaire used by the Ministry of Health to conduct a previous NCD needs assessment in the Turkish health system. The existing questionnaire was adapted following a literature review and pre-tested for finalization. The questionnaire was converted into an electronic form and shared via provincial health directorates. All responses were collected electronically and did not include personal identifiers or confidential data, in line with protection of personal information regulations.

Table 1. Syrian doctors and nurses working at RHCs, by province

Province	Physicians	Nurses
Adana	35	63
Adiyaman	6	10
Ankara	23	26

Batman	3	9
Burdur	1	3
Bursa	23	33
Denizli	2	3
Diyarbakir	3	6
Elazığ	2	3
Gaziantep	73	107
Hatay	107	130
Isparta	1	1
Istanbul	101	98
Izmir	25	34
Kahramanmaras	26	38
Kayseri	12	14
Kilis	31	38
Kocaeli	6	10
Konya	15	29
Malatya	9	13
Manisa	1	1
Mardin	6	16
Mersin	42	47
Muğla	1	2
Nevşehir	2	2
Osmaniye	16	21
Sakarya	1	4
Samsun	1	2
Şanlıurfa	84	110
<b>Total</b>	<b>658</b>	<b>873</b>

For FGDs, investigators from Gazi University developed a moderator's guide and adapted semi-structured questions from survey tools previously used by the Ministry of Health and pre-tested for finalization. All data collection tools were translated into Arabic. A total of 26 FGDs with health-care providers and patients were held in RHCs in nine provinces (Adana, Ankara, Bursa, Hatay, Istanbul, Izmir, Konya, Mardin and Sanliurfa): 20 for health-care providers and nine for patients. The number of FGDs for health workers was based on the total number of Syrian physicians and nurses in each province. FGDs for patients included individuals aged 18 years or older with a diagnosis of CVD, diabetes mellitus or hypertension. All FGDs were held in Arabic and coordinated by trained translators.

### *Data cleaning and analysis*

A research team from Gazi University used SPSS version 15.0 for data cleaning and statistical and thematic data analysis, with technical supervision from WHO. Participants' responses to five-point Likert scaled questions related to NCD management and NCD communication were scored as: always = 5, often = 4,

sometimes = 3, seldom = 2 and never = 1. The maximum score for NCD management was 70; to convert this to a 100-point scale, total scores were multiplied by 1.43 ( $= 100/70$ ). The maximum score for NCD communication was 45; to convert this to a 100-point scale, total scores were multiplied by 2.22 ( $= 100/45$ ). Total scores were summarized using descriptive statistics and examined using linear correlation analyses. A structural analysis approach was followed to analyse FGD reports and audio recordings.

### *Ethical approval*

Ethical approval for the study was received from the Gazi University institutional review board on 28 May 2019.

## Results

### Characteristics of participants and RHCs

Quantitative and qualitative data were analysed separately and then combined in the final analysis. Of the 1531 doctors and nurses working at RHCs who received the questionnaire, 832 responded (334 physicians and 498 nurses). The overall response rate was 54.3%, with a higher response rate from nurses (57.0%) than from physicians (50.8%).

FGDs were held in nine provinces: 20 for health-care professionals (three each in Istanbul and Hatay and two for the rest) and nine for patients (one in each province). On average, 10 participants took part in each FGD, with a total of 320 FGDs participants: 98 patients (59.2% female), 112 nurses (40.2% female) and 110 physicians (24.5% female).

A total of 334 physicians (80.2% male) and 498 nurses (57.4% male) responded to the survey. For the physicians, the mean ( $\pm$  SD) age was  $41.7 \pm 11.1$  years and the median age was 40.0 years (range: 19.0–84.0); for nurses, the mean ( $\pm$  SD) age was  $36.0 \pm 9.2$  years and the median age was 33.0 years (range: 19.0–84.0). Fig. 1 and Table 2 show the sociodemographic characteristics of each group.

Table 2. Professional characteristics of health-care professionals

Characteristic	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Year of graduation from medical school				
1965–1974	5	1.5	7	1.4
1975–1984	23	6.9	13	2.6
1985–1994	47	14.1	100	20.1
1995–2004	81	24.3	87	17.5
2005–2014	127	38.0	231	46.4
2015–2019	51	15.3	60	12.0
Specialist physician				
No	156	46.7	–	–
Yes	178	53.3	–	–
Specialty ( <i>n</i> = 178)			–	–
Basic medical sciences	30	16.9	–	–
Internal medicine	34	19.1	–	–
Other areas in internal medicine	17	9.6	–	–
Obstetrics	13	7.3	–	–
Paediatrics	44	24.7	–	–
Surgery	40	22.5	–	–

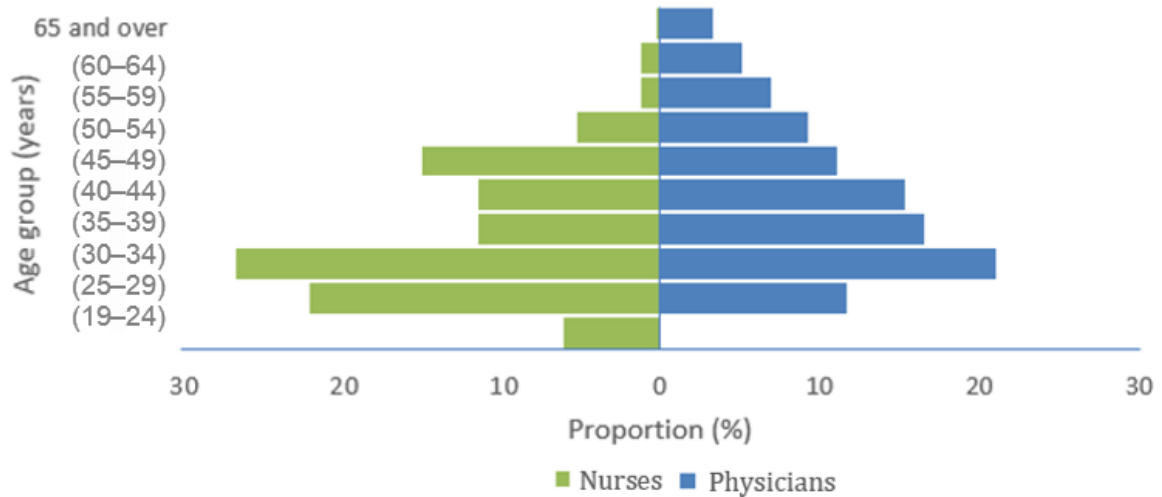
Note: percentages are given for each category.

Both physicians and nurses were in younger age groups but, in general, nurses were younger than doctors (Fig. 1). Notably, 80.8% of physicians were men. The highest proportion of both physicians and nurses had



between 4 and 14 years of work experience and over 50% of doctors had specialty training. In addition to Arabic, a small proportion of health-care professionals could speak Turkish (12.6% of physicians and 11.0% of nurses) and English (3.9% of physicians and 2.0% of nurses).

Fig. 1. Age distribution of physicians and nurses, by age group



In all, 79.0% of physicians and 56.3% of nurses said that they treat fewer than 25 patients per day. Most of the health-care professionals had worked in RHCs for less than one year (Table 3). When consultation workloads for physicians were broken down by the type of RHC, the mean number of consultations per day was 8.6 for RHTCs, 11.6 for extended RHCs and 10.3 for RHCs (the difference was not statistically significant).

Table 3. Work characteristics of health-care professionals

Characteristic	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Current workplace				
RHTCs	49	14.7	55	11.0
Extended RHCs	57	17.1	73	14.7
RHCs	228	68.3	370	74.3
Time working at current institution (years)				
0-1	205	61.4	334	67.1
1.1-2	121	36.2	141	28.3
>2	8	2.4	23	4.6

Note: percentages are given for each category.

### Clinical experience of health personnel related to NCDs

When asked which were the three most common health problems they encounter in patients, physicians said respiratory, endocrinological and haematological diseases and nurses said CVDs, endocrine diseases

and respiratory diseases. However, in FGDs both physicians and nurses said that the most common disease they encounter is hypertension.

Patients who participated in FGDs had a diagnosis of at least one of the following diseases: hypertension, diabetes and CVD. Most patients, especially those who had been diagnosed after moving to Turkey, claimed that the major contributors to their health problems were the humanitarian crisis in Syria, stress and harsh living conditions. The other causal/contributory factors given were having a family history of the disease, poor nutrition, lack of physical exercise and smoking. According to patients, the NCD symptoms most responsible for reducing their quality of life were fatigue, tiredness and headache.

Table 4 shows the frequency of use of basic NCD diagnostic tests in all three types of RHC. Most physicians and nurses reported including blood pressure and blood glucose measurements (an important tool in diabetes diagnosis and management) in patient consultations, but only 14.7% of physicians and 18.5% of nurses used cardiovascular risk scoring. This was confirmed in FGDs, where health-care personnel reported that the most common diagnostic test was blood pressure measurement and said they almost never used cardiovascular risk scoring.

Table 4. Frequency of use of basic NCD diagnostic tests in RHCs

Frequency of diagnostic testing	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Blood pressure measurement				
Never	2	0.6	2	0.4
Sometimes	126	37.7	150	30.1
Always	206	61.7	346	69.5
Blood glucose measurement				
Never	11	3.3	18	3.6
Sometimes	230	68.9	265	53.2
Always	93	27.8	215	43.2
Cardiovascular risk scoring				
Never	49	14.7	92	18.5
Sometimes	155	46.4	218	43.8
Always	130	38.9	188	37.8

Note: percentages are given for each category.

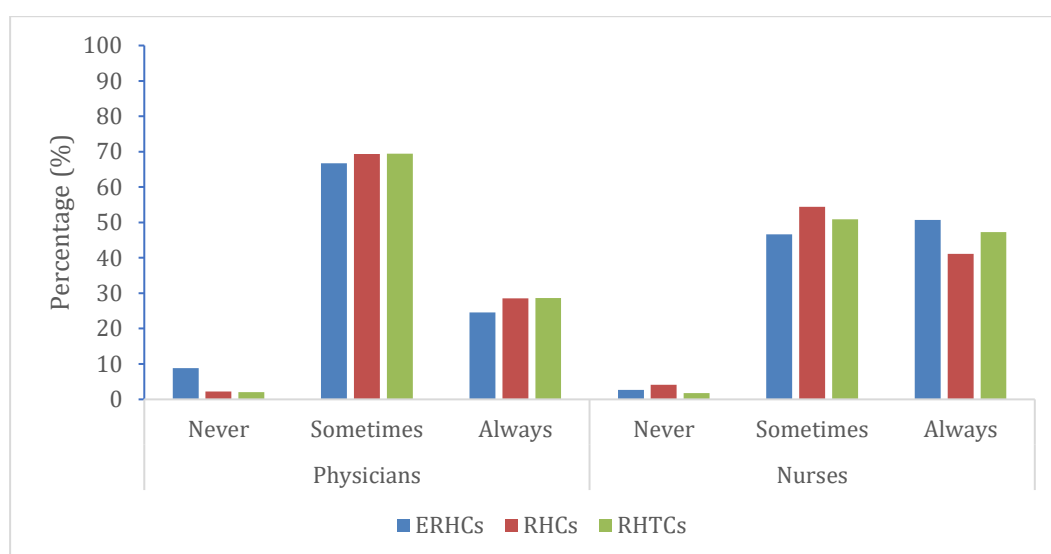
Of the health workers who said they always took these measurements, the highest proportion of doctors worked in RHTCs, while the highest proportion of nurses worked in extended RHCs (Figs 2–4). Of the three diagnostic tests, physicians used CVD risk scoring the least often. Of the physicians who do use this test (sometimes or always), the highest proportion work at RHTCs.

Fig. 2. Frequency of measuring blood pressure, by type of RHC



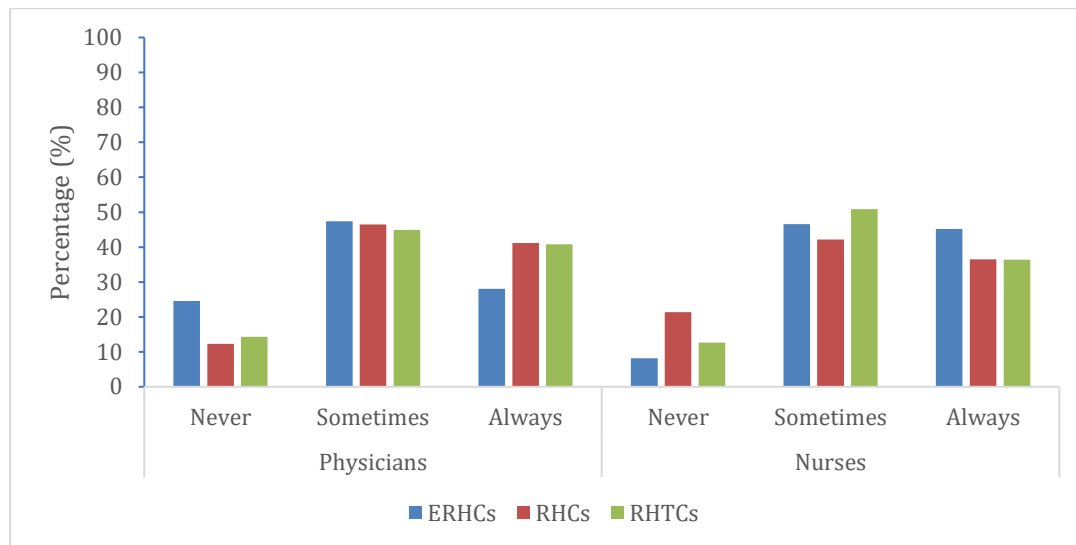
ERHC: extended RHC.

Fig. 3. Frequency of measuring blood glucose, by type of RHC



ERHC: extended RHC.

Fig. 4. Frequency of cardiovascular risk scoring, by type of RHC



ERHC: extended RHC.

In FGDs, doctors said that blood pressure measurement was the most commonly used diagnostic tool, and CVD risk scoring was seldomly used. Nurses also said they measure blood pressure, but only if physicians instructed them to.

In FGDs, physicians said that when they suspect that a patient has a NCD, they take the patient's medical history (anamnesis), ask about the signs and symptoms, and request diagnostic testing. However, they rarely make recommendations about healthy lifestyle choices. They provided only brief information about how they follow up NCD patients, which suggests that following up patients with NCDs is not among their priorities. Nurses said that they follow the physician's instructions regarding diagnostic testing and then return patients to the physician. Although both physicians and nurses talked about blood pressure and blood glucose measurements, they did not say much about cardiovascular risk scoring or the use of any kind of diagnostic algorithm. Instead, they used subjective judgement to evaluate the patient's risk level, as shown in the following quotations.

**FG.01.2.N5.** First of all, we should ask what is the complaint? When did it start? What medications they are on? At the initial visit, we should measure the blood pressure and refer them to the physician; we share the physician's decision with them.

**FG.01.1.N1-N4-N5.** We do not measure blood pressure for all patients unless the physician orders.

**FG.31.3.D3.** If there is no previous diagnosis, I focus on getting to know the patient better. I ask if they are on any medication and the duration of their complaints. I measure blood pressure and glucose levels. If these are high, I repeat the measurements and refer them to the specialist.

**FG.31.3.N9.** I measure height and weight for most of the patients. but I do not measure waist circumference.

**FG.42.2. D9.** I collect those measurements routinely for those patients above 35 years of age. For younger patients, I measure only if they request it or if they have certain complaints such as headache or vertigo.

**FG.42.2.D8.** Some patients visit us four times a month with different complaints; so, we do not collect their measurements each time.

At the FGDs, patients said that they are never followed up. They are usually followed up during visits for prescription refills or renewal of their NCD report, as shown in the following quotations.

**FG.34.1.P4.** At this RHC, the physician followed me up for three months; since my blood pressure was not reduced, (s)he prescribed a medication and explained to me. They do not do the same at the hospital.

**FG.35.1.P11:** Here we receive a great service. When I was initially suspected [of having hypertension], they gave me a blood pressure monitoring card and then I was diagnosed with hypertension within three days.

**FG.42.1.P4.** Because of the heavy workload, it is challenging to receive a consultation here. I cannot have my blood pressure measured here; I measure it at home.

**FG.63.1.P2.** They measure blood pressure here at the RHC; sometimes they request a laboratory test. Even if I am not a hypertension patient, it is OK to have high blood pressure occasionally. Therefore, sometimes I come to the RHC for having my blood pressure measured.

Table 5 shows how often health workers question patients about NCD risk factors. The risk factor asked about least often was alcohol use.

Table 5. Frequency of collecting information on NCD risk factors from patients

Frequency of questioning	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Use of tobacco & tobacco products				
Never	9	2.7	8	1.6
Sometimes	41	12.3	111	22.3
Always	284	85.0	379	76.1
Alcohol use				
Never	39	11.7	65	13.1
Sometimes	134	40.1	139	27.9
Always	161	48.2	294	59.0
Excess salt consumption				
Never	4	1.2	5	1.0
Sometimes	93	27.8	130	26.1
Always	237	71.0	363	72.9
Regular physical activity				
Never	3	0.9	11	2.2
Sometimes	107	32.0	182	36.5

Always	224	67.1	305	61.2
Regular use of medications				
Never	1	0.3	3	0.6
Sometimes	20	6.0	51	10.2
Always	313	93.7	444	89.2
Family history of chronic disease				
Never	1	0.3	5	1.0
Sometimes	64	19.2	112	22.5
Always	269	80.5	381	76.5

Note: percentages are given for each category.

Both physicians and nurses reported that they often make recommendations to patients about healthy lifestyle choices (Table 6).

Table 6. Frequency of advice on healthy lifestyle choices

Frequency of advice	Physicians (n = 334)		Nurses (n = 498)	
	n	%	n	%
Cessation of tobacco and tobacco products				
Never	11	3.3	28	5.6
Sometimes	41	12.3	63	12.7
Always	282	84.4	407	81.7
Cessation of alcohol use				
Never	30	9.0	40	8.0
Sometimes	50	15.0	49	9.8
Always	254	76.0	409	82.1
Regular physical activity				
Never	4	1.2	5	1.0
Sometimes	50	15.0	99	19.9
Always	280	83.8	394	79.1
Healthy diet				
Never	3	0.9	7	1.4
Sometimes	35	10.5	60	12.0
Always	296	88.6	431	86.5

Note: percentages are given for each category.

Some highlights from FGDs on questions on NCD risk factors are as follows.

**FG.06.2.D4.** First, I collect the anamnesis. I ask when the complaints began and what are the current complaints and what the chronic complaints are. I ask about the current medications (s)he uses. Then I examine the patient and request lab tests and make my decision accordingly.

**FG.42.1.D1.** First, I ask about the natural history of the disease: how did it start and progress, when the symptoms began, if there is any family history, medications and previous lab results.

**FG.47.1.D1.** I ask about the patient's lifestyle and living conditions with the family; and I ask about genetic predisposition, such as does any family member have hypertension or diabetes. I also ask about their lifestyle, nutritional habits and any sports activities. Overall, we try to ask everything to learn whether this problem occurs because of genetic predisposition or lack of disease control.

**FG.01.1.D5.** First, we provide information to our patients about sport, exercise, diet and sleep. We also ask about their family history; if there are family members with similar health problems. Unfortunately, primary health-care services are not prioritized or there is not enough time for that.

On the other hand, in FGDs patients said that although health-care personnel make recommendations about nutrition, physical exercise and medication use, they do not consider their current life challenges.

**FG.42.1.P9.** The physician tells me that the major risk factor for heart disease is smoking. Every time I come to visit, the physician asks me if I smoke or if I quit smoking. They share recommendations about risk factors and explain everything. I cannot follow their recommendations; maybe I follow 60% of the recommendations.

In FGDs, health-care personnel said that they generally make recommendations on healthy lifestyle choices only to high-risk patients. Nurses usually follow the physician's example and make similar recommendations. Both groups said that the main problems is the lack of response to their recommendations from patients. We also observed that health-care personnel could not provide details about these recommendations, but just made basic statements.

**FG.31.3.D8.** When I see excess levels [of test measurements], first of all I share recommendations on exercise and diet; however, they do not always respond to or follow up my recommendation. This depends on the patient: some do some don't. It is obvious who has followed the recommendations.

**FG.34.3.D1-D2-D3-D5.** We make recommendations on diet, walking, quitting smoking, losing weight, reducing stress, staying away from bread and consuming more vegetables.

**FG.47.1.D3.** First, we try to fix their diet. If the patient is obese, we recommend sport. They need to reduce their weight. We explain physical activity in detail. We even plan their diet: what they should eat for breakfast, lunch, etc. Obese patients especially request information about diet.

**FG.31.2.N2.** If I recognize a cardiovascular risk, I recommend sport, diet and lifestyle changes.

**FG.31.2.N1.** Syrians smoke a lot and their diet is heavy on fat; I see these as the main risk factors.

In FGDs, some patients said that they had received advice on healthy lifestyle choices, while others said they had not the contrary. There was no consensus on this issue. The patients said that most of the recommendations were general statements on quitting smoking, healthy diet, reducing salt intake and walking, without taking into consideration the patient's current life situation.

**FG.01.1.P7.** When my blood pressure is high, the physician only advises me to stay away from salt, nothing else.

**FG.06.1.P4.** If (the recommendations) suit us, we follow them; if they say walk, we walk. However, sometimes the recommendations they make are impossible to follow. For example, they recommend us to eat red meat, but we often cannot even see red meat for 2–3 months. For instance, they recommend us to change our environment, have vacation; if we cannot find enough to eat, it is impossible for us to have a vacation.

**FG.35.1.P6.** They give us lots of recommendations; but, we cannot follow them up [laughing]. I walk regularly and watch my diet, but I cannot quit smoking.

**FG.42.1.P1.** My physician does not explain in detail – just makes general recommendations.

Table 7 shows how often health workers measure patients' height, weight and waist circumference. The most common measurement that both physicians and nurses take for high-risk patients is weight measurement. Almost one third of health-care professionals do not measure their patients' height and two thirds do not measure the waist circumference.



Table 7. Frequency of measuring height, weight and waist circumference

Frequency of measurement	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Height measurement				
Never	58	17.4	101	20.3
Sometimes	201	60.2	265	53.2
Always	75	22.5	132	26.5
Weight measurement				
Never	25	7.5	33	6.6
Sometimes	172	51.5	244	49.0
Always	137	41.0	221	44.4
Waist circumference measurement				
Never	187	56.0	289	58.0
Sometimes	64	19.2	62	12.4
Always	83	24.9	147	29.5

Note: percentages are given for each category.

In FGDs, we observed differences between general practitioners and specialist physicians. General practitioners did not measure every patient's blood pressure and preferred to refer high-risk patients to specialists, whereas specialist physicians were more likely to request blood pressure measurements. On the other hand, if a patient's blood pressure is high, nurses refer the patient to a physician and follow the physicians' instructions; nurses also sometimes make recommendations on healthy lifestyle choices. Nurses said they measured patients' weight, but they did not say anything about measuring the height or waist circumference.

**FG.06.2.D1.** I don't measure blood pressure for each patient. I only measure it in those aged over 40. If I suspect a risk factor, then I measure it for those younger than 40 as well. If patients suspect something serious, they visit a specialist directly; we also refer them to a specialist if we suspect a serious illness.

**FG.16.1.D1–5–7.** We don't measure blood pressure for all patients; we only measure for pregnant, elderly and overweight people, and those with NCDs.

**FG.16.2.N2.** We usually measure blood pressure and glucose levels in those aged over 40.

**FG.34.1.D6.** We follow up with lab tests and measurements in diseases such as diabetes, hypertension and hyperlipidemia. We also use electrocardiography and refer patients to hospital, if needed.

In FGDs, patients said that although physicians do not invite them for follow-up checks, when they come to RHCs they enquire about their diet and physical activity and ask their weight. They said that they do not receive routine advice on smoking cessation or routine height and weight measurements. Although physicians make detailed recommendations on what to do for their diabetes and they understand them clearly, they cannot always incorporate them into their lives.

Patients complained that the heavy workload of health workers at RHCs was an obstacle to receiving health-care services because, instead of making the necessary examination and measurements, health-care personnel preferred to ask questions only. The most common question they received was "what medications are you taking?"

**FG.01.1.P15.** I have been a diabetes patient for the last 10 years; the physician only asks what medication you use and requests blood and urine tests.

**FG.06.1.P7.** Physicians at the hospital do not talk at all. Here [at the RHC] my physician wrote one full page on what should I do; they take care of us.

## Health personnel training on NCD management and communication skills

Health-care personnel self-evaluated their competency in NCD diagnosis, treatment and follow-up (Table 8) and in NCD counselling, rehabilitation and health education (Table 9).

Table 8. Self-evaluation of health-care personnel on competency in NCD diagnosis, treatment and follow-up

Competency	Hypertension (%)		Diabetes mellitus (%)		CVD (%)	
	Physicians	Nurses	Physicians	Nurses	Physicians	Nurses
Sufficient <sup>a</sup>						
No	18.0	17.9	21.0	69.9	52.1	63.5
Yes	82.0	82.1	79.0	30.1	47.9	36.5
Reason(s) for inadequacy <sup>b</sup>						
Lack of education	51.7	50.6	52.9	31.0	59.8	62.3
Working conditions	50.0	43.8	55.7	33.6	60.2	41.5
Limited knowledge of prescribed medications and diagnostic tools	38.3	21.3	51.4	26.7	52.9	27.2
Time	30.0	19.1	31.4	23.3	40.8	15.2
Communication with patients	16.7	22.5	25.7	27.0	19.5	17.7

<sup>a</sup> Percentages are given for each category.

<sup>b</sup> Multiple responses were possible.

Table 9. Self-evaluation of health-care personnel on competency in NCD counselling, rehabilitation and health education

Competency	Hypertension (%)		Diabetes mellitus (%)		CVD (%)	
	Physicians	Nurses	Physicians	Nurses	Physicians	Nurses
Sufficient <sup>a</sup>						
No	9.3	9.8	29.9	29.1	42.5	52.2
Yes	90.7	90.2	70.1	70.9	57.5	47.8
Reason(s) for inadequacy <sup>b</sup>						
Education	58.1	67.3	59.0	62.1	69.7	70.4
Work conditions	64.5	36.7	64.0	40.0	62.0	40.4
Time	45.2	30.6	44.0	26.9	43.0	17.7
Communication with patient	29.0	40.8	28.0	28.3	23.2	25.2

<sup>a</sup> Percentages are for each category.

<sup>b</sup> Multiple responses were possible.

Most physicians and nurses felt competent in the diagnosis, treatment and follow-up of hypertension. For diabetes, most physicians felt competent but nurses did not. However, over half of physician and most nurses did not feel competent in the diagnosis, treatment and follow-up of CVDs. Both physicians and nurses felt more competent regarding counselling, rehabilitation and health education for all three NCDs, but self-perceptions of competency were lowest for CVDs.

In FGDs, health-care personnel said they need up-to-date training and education on NCDs, especially on healthy life choices and that education programmes were needed for both community members and health-care personnel. There is a lack of follow-up checks for NCD patients; instead of following up their patients and assessing potential medical complications, physicians prefer to refer them to hospitals. Health-care personnel also said that NCD follow-up within the current family medicine system is very good and suggested implementing a similar system in RHCs.

**FG.01.2.D9.** We did not receive up-to-date training on NCDs; we only have our out-of-date knowledge and it would be good to have training in Turkey.

**FG.06.2.D4.** We would like updates for everything; we want continuous education.

**FG.35.1.D1.** We should get training to maintain better communication with patients.

**FG.35.1.N6.** Health literacy levels among Syrians are too low; patients should also be considered for training.

**FG.42.1.N8.** We do not have anybody here [at the RHC] to explain nutrition or provide training. Besides that, although as a physician I know about blood glucose measurement and insulin administration, I do not feel competent enough; I need training. I also would like to have a training on cardiovascular risk scoring.

**FG.47.1.N6.** I have mentioned this many time before; we lack the necessary training. When we receive a question from a patient, we answer it; however, our answers are hardly sufficient (sadly). We feel guilty and we need better training.

**FG.63.2.(all participants).** It would be great to have training for patients, physicians and nurses.

In FGDs, patients said that since only Syrian health-care personnel work in RHCs, they can communicate well and understand each other. This is why they are very satisfied with the health services and prefer to go to RHCs. They said that they visit RHCs for prescription refills, blood pressure checks and physical examinations. Overall, they were happy with the service they receive; however, they complained about the heavy workload of physicians, shortage of specialist physicians and difficulty of securing an appointment. They also said that some of the medications prescribed by general practitioners are not covered by health insurance.

**FG.42.1.P2.** There is only one specialist and only (s)he can write my prescription. Because of that, I visited the RHC two to three times before and waited for three to four hours, but still didn't see the physician.

**FG.06.1.P7.** I came to ask the physician to prescribe my hypertension medication, but he said he doesn't have the authority to write the prescription. This is frustrating; we had to go to the hospital and get a report to fill the prescription. This is a torture for us. They treat us really bad at the hospital; every time I leave the hospital in tears. I can speak English and try to communicate in English, but the physician ignores me.

For both physicians and nurses, the most common completed training on NCDs was on hypertension; almost three quarters of all Syrian health workers said they had received training for this disease in Syria (Figs 5 and 6). For both physicians and nurses, the second most common training was on diabetes mellitus and the least common was on CVDs. Almost two thirds of physicians and nurses said that they had received training on these NCDs in Syria. However, most health-care personnel had not received training on any specific NCD. Among those who had received post-graduate training, only one third said they had received training on NCDs in Turkey. In FGDs, both physicians and nurses said they used the knowledge they had gained in medical or nursing school, but needed more up-to-date knowledge.

Fig. 5. Training received in NCD management before starting work at RHCs: physicians

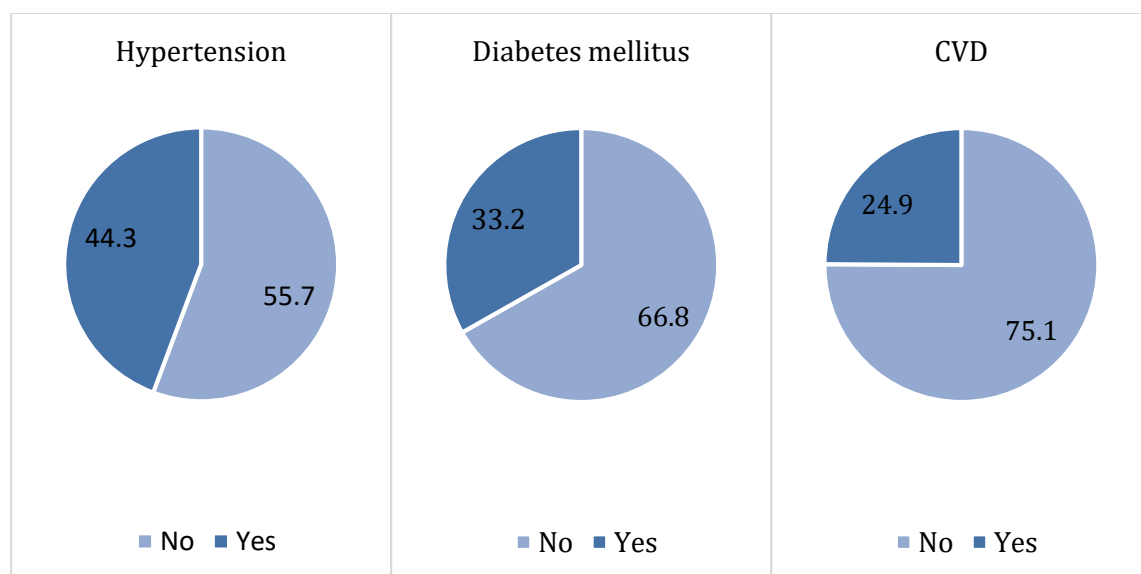
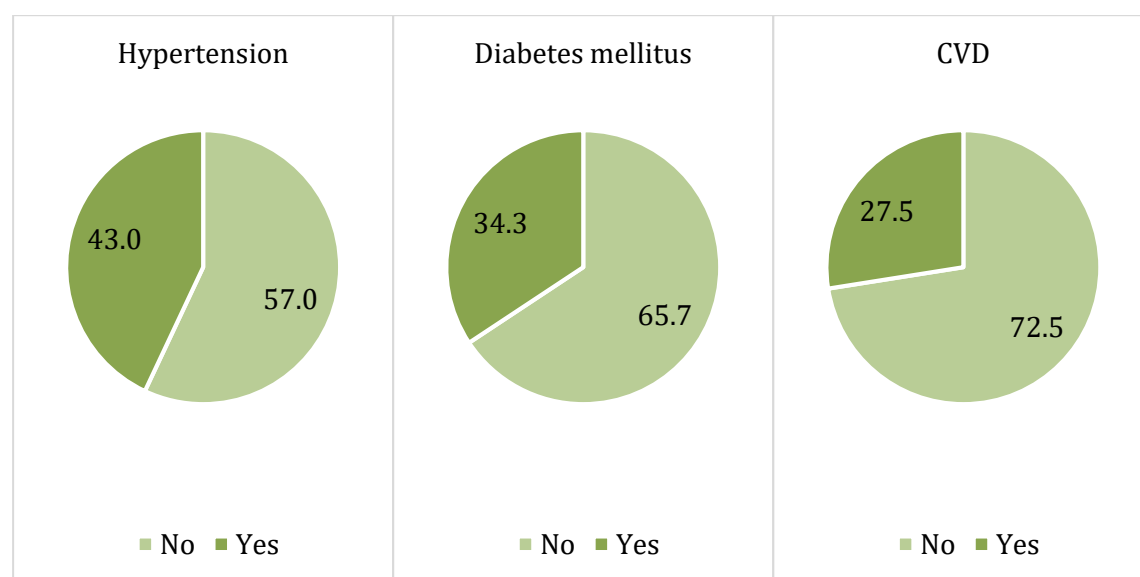


Fig. 6. Training received in NCD management before starting work at RHCs: nurses



**FG.01.2.D9.** We only have our old knowledge; we did not receive this kind of up-to-date information in Turkey. It would be great to have such training.

**FG.42.1.N9.** Furthermore, they should arrange training programmes for us; we do not have time to keep up-to-date with knowledge. A four- to five-day training programme would be great; we also need training on the health-care system in Turkey.

Table 10 shows data on the status of communication skills training and other training needs for physicians and nurses.

Table 10. Communication skills training and training needs

Training needs	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Communication skills training				
No	104	31.1	127	25.5
Yes	230	68.9	371	74.5
Where training was obtained				
Turkey	155	67.4	182	49.1
Syria	75	32.6	167	45.0
Other country	0	0	22	5.9
Topics for in-service training <sup>a</sup>				
Hypertension – diagnosis	138	41.3	287	57.6
Hypertension – treatment	179	53.6	–	–
Hypertension – monitoring	103	30.8	233	46.8

Diabetes mellitus – diagnosis	155	46.4	279	56.0
Diabetes mellitus – treatment	220	65.9	–	–
Diabetes mellitus – monitoring	154	46.1	237	47.6
CVDs – diagnosis	203	60.8	290	58.2
CVDs – treatment	218	65.3	–	–
CVDs – monitoring	170	50.9	273	54.8

<sup>a</sup> Multiple responses were possible.

Note: percentages are given for each category.

Overall, most health-care personnel said that they had received training in communication skills. However, most required up-to-date training on NCDs, especially on CVD diagnosis and treatment.

**FG.47.1.N6.** I mentioned various times that we lack training. When patients ask something, we cannot answer sufficiently; this is frustrating. We need more competent training.

**FG.42.1.D3.** I don't feel competent in reading an ECG [electrocardiogram], I need specialized training. We have families and we don't want to attend training programmes outside our province; if they organized a training programme in my province, I'd attend. I also want training on dosage adjustment for insulin.

**FG.42.1.D6.** I want training on reading an ECG [electrocardiogram]. NCD patients are usually too sick to come to RHCs; their relatives come to receive their prescriptions. If a specific portion of consultation hours were allocated to them and if the appointment process were made easier, we could see those patients as well. I also need training on 0–1 year-old babies [pediatrics] on and asthma management. I found this discussion very helpful; I am very happy to see you paying attention to our problems.

**FG.42.1.N8.** There is nobody to provide training on diet and nutrition here [at the RHC]. We also need training on measuring blood glucose levels and insulin treatments. We know them, but we do not feel competent enough. We also need training on cardiovascular risk scoring.

**FG.35.1.D4.** We need training on healthy life choices.

**FG.35.2.D1.** We received training previously, but it was not enough.

**FG.35.2.D1.** We want training on NCDs. We usually get confused with heart diseases; we are not sure when to refer patients to hospital.

**FG.35.1.D1.** We would like training to be able to communicate better with patients.

Table 11 shows the answers of health-care personnel to questions on treating NCDs.

Table 11. Health workers' responses to questions on NCD treatment

Question	Physicians ( <i>n</i> = 334)		Nurses ( <i>n</i> = 498)	
	<i>n</i>	%	<i>n</i>	%
Do you use evidence-based guides for NCD diagnosis, treatment and follow-up				

No	119	35.6	202	40.6
Yes	215	64.4	296	59.4
Reason(s) for not using evidence-based guidance <sup>a</sup>				
Don't know	8	6.7	52	25.7
Don't have a guide	74	62.2	137	67.8
Don't have time	49	41.2	31	15.3
Don't need	19	16.0	20	9.9

<sup>a</sup> Multiple responses were possible.

Note: percentages are given for each category.

Although most health workers said they use evidence-based guides on NCDs, some complained that there are not enough information resources available (e.g. guidelines, textbooks and articles).

In FGDs, health-care personnel said that due to their heavy workload, they cannot allocate sufficient time for patients and that the time allocated was often sufficient. They also mentioned that they do not use any diagnostic algorithms for NCDs.

**FG.34.3.D5.** We use our knowledge; we do not have any guidelines.

**FG.42.2.D9.** Based on the patient's glucose level, I recommend sports or diet. Also based on the glucose level, I include metformin or sulfonylurea in the treatment. If the HBA1c<sup>3</sup> level is high, I change to oral antidiabetic medications. When I cannot regulate patients' glucose levels, I refer them to hospital. There is no specific algorithm, my approach depends on each case.

**FG.06.2.D2.** There is no guidance or algorithm for CVDs.

**FG.31.3.D8.** We do not have a written algorithm to categorize NCD risks, but we have it in our memories.

**FG.42.2.D4.** I do not feel competent, and the time we allocate for each patient is not enough. There should be trainings organized for patients.

**FG.31.2.D5.** Patients cannot visit the same physician; this interferes with regular follow-up procedures.

**FG.42.1.D5.** Physicians do not have enough time to follow-up complications; the workload is too high.

**FG.63.2.D7-D9.** We cannot follow up patients after hospital visits. We can only see the date of the visit and the prescriptions. None of the lab test results, imaging or tests are visible in the system. It would be helpful to integrate the systems.

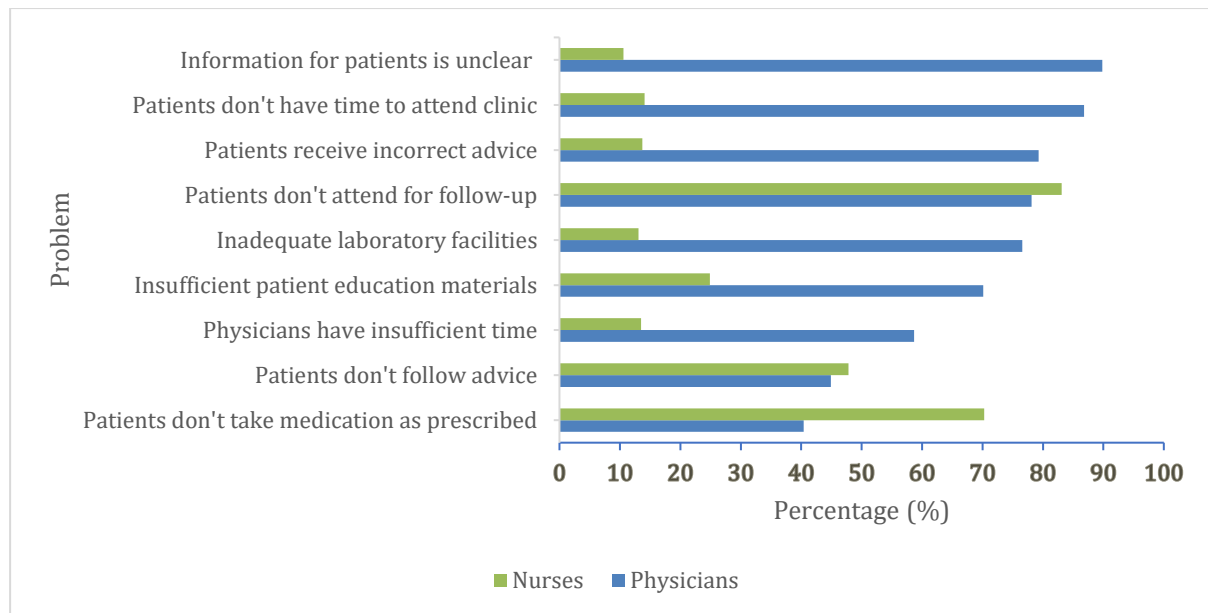
In FGDs, patients also said that physicians are too busy and cannot allocate enough time to fully examine each patient.

<sup>3</sup> Glycated haemoglobin, an indicator of the blood glucose level.

**FG.42.1.7.** We struggle too much to secure an appointment and see the physician; we came here early in the morning and waited for hours before seeing the physician. We lost the whole day and we felt tired when we returned home.

Fig. 7 shows the major problems face by health-care personnel in NCD management.

**Fig. 7. Problems reported in NCD management**



The most common problems reported by health-care personnel were patients not attending follow-up appointments, not using their medications regularly and not following recommendations.

In FGDs, health-care personnel said that most of the problems in NCD management are caused by patient behaviour. They suggested that patients need to be trained in NCD management. They also said that the most important problems in follow-up are that different physicians examine patients at each visit, lack of an integrated medical recording system and the heavy workload.

**FG.06.1.D3.** First of all, we'd like to highlight the importance of these diseases [NCDs]. That's why we say to our patients that if they neglect their diseases, complications may occur; therefore, they need exercise, walk regularly and stay away from unhealthy food. Patients do not take their medication regularly. Sometimes we need to scare patients in order to make them to take their medications – scaring them on one side and giving them hope on the other side.

**FG.34.3.D2.** I'd like to mention that our patients have problems adjusting [to the system]. They do not take their medications regularly; for instance, I prescribe medication three times a day, but the patient tells me he takes it whenever he has a headache.

**FG.06.1.D6.** They (patients) only come here to get a prescription. They are not aware enough about the importance of follow-up.

**FG.31.2.D5.** Patients cannot visit the same physician in each visit. This creates problems in follow-up.

**FG.47.2.D1.** I always recommend them to attend their regular follow-up visits, but still they come here only when they need a prescription refill.



**FG.01.2.D1.** I suggest training because I observe lack of knowledge in some patients. Sometimes, instead of taking the medication I prescribe, they might take medication another person gives to them. If their neighbour complains about a side-effect, they might stop taking the medication.

In FGDs, patients reported the several common problems in NCD management. Although they were mostly satisfied with the service they received, they often struggled to obtain an appointment due to the heavy workloads of physicians and the limited number of specialist physicians. In FGDs, health-care professionals complained about the heavy workload and suggested reducing the number of daily consultations, even though most treat fewer than 25 patients per day. Health workers also complained that some medications prescribed by general practitioners are not covered by health insurance and that high-risk patients cannot be prioritized in scheduling appointments. Since patients need to go to a hospital to obtain their NCD report, they sometimes face difficulties, such as not receiving all their medications or being asked to make an additional co-payment for some medications. They do not like going to hospital for consultations because they need to wait for hours there to see a physician. When patients were asked whether physicians at RHCs had requested them to come back for follow-up, they all said no. However, they admitted that they regularly do not take their medication as prescribed nor follow their physician's recommendations.

In FGDs, one physician made the following comment.

**FG.35.1.D5:** We cannot spend enough time with patients due to our heavy workload. However, we try to do our best to explain healthy life choices to our patients. On average, we provide 70 consultations daily, 45 to 50 in the morning and the rest during the afternoon.

In FGDs, patients made the following comments.

**FG.16.1.P1.** We receive a good service. We are happy to have physicians who speak the same language as us. Most of the time we come to fill our prescriptions; we don't come if we don't need medication.

**FG.31.1.P12.** Because of my heart disease, I come to the RHC three times a year. Since there is a shortage of translator at the hospital, I am happy with the service I receive here.

**FG.42.1.P1.** We have an electronic scheduling system in our RHC. In the early morning, you can find 50–60 people there. Even if we go there very early in the morning, we cannot get an appointment; if we can get an appointment, we sometimes wait for two to three hours and then go home without seeing the physician.

**FG.16.P7.** I go to the hospital because I use aspirin, coumadin and heart medication (Monopril). Physicians here [at the RHC] advise me not to expend too much physical effort and to come here for follow-up every month.

**FG.31.1.P11.** I come to the RHC for my blood tests; for my NCD report and medication, I go to the hospital. I have a report certifies me as 90% disabled. Although the physicians recommend me to walk, I cannot because I one of my feet has been amputated. I also cannot follow their dietary recommendations. I come to visit the internist here.

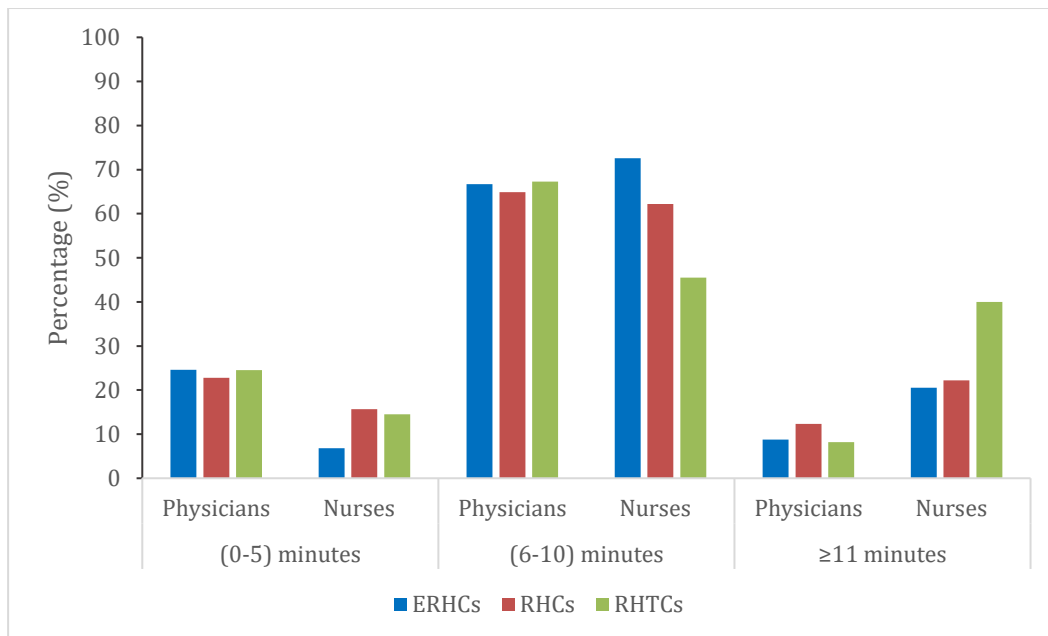
**FG.42.1.P9.** My physician tells me that the biggest risk factor for heart disease is smoking. Every time I come here, the physician asks me if I smoke or if I have quit smoking. They recommend a lot of things against risks but I cannot follow most of the recommendations; maybe only 60% of them.

**FG.42.1.P4.** They [physicians] don't make many recommendations other than prescriptions. They don't ask me to come back for follow-up [the group confirmed this]. It is very difficult for me to come here. Without a vehicle, it is impossible for me to come [obese patient].

Overall, most physicians allocate six to 10 minutes per patient consultation, but less than half felt that the allocated time was sufficient. However, specialists, physicians working at RHCs and those who had worked for over one year in the current institute allocated 11 minutes or more per patient (Figs 8 and 9).

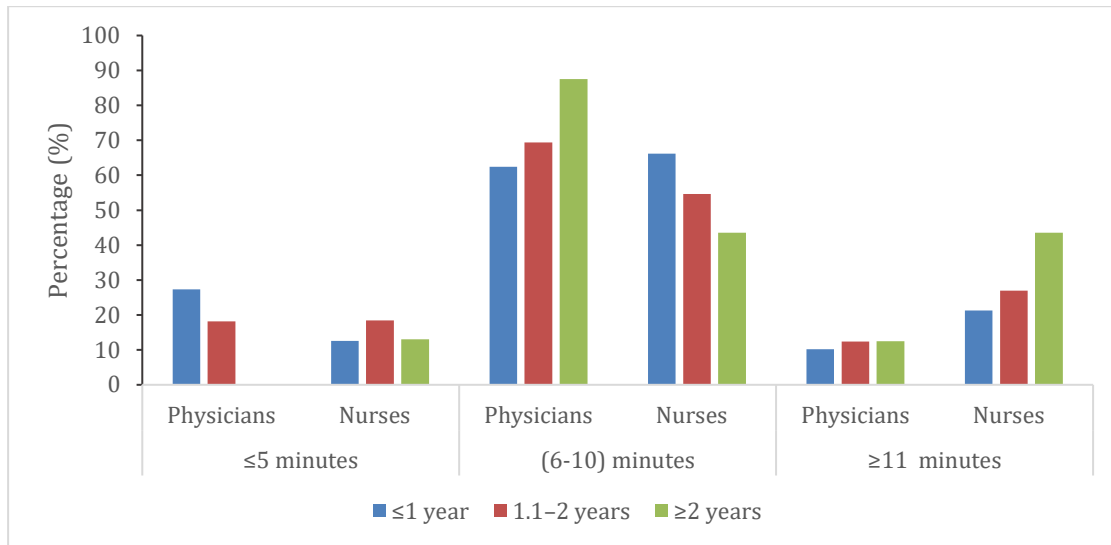
Overall, most nurses allocate between six and 10 minutes per patient; however, nurses working at RHTCs and those who had been working for over two years at their current institution allocated 11 minutes or more per patient ( $P < 0.05$ ; Figs 8 and 9).

Fig. 8. Time allocated for each patient, by current workplace



ERHC: extended RHC.

Fig. 9. Time allocated for each patient, by time working in current institution



General practitioners, doctors those working at RHCs or extended RHCs, and those who had started working less than two years previously used the MBYS more often than other physicians ( $P < 0.05$ ; Figs 10 and 11). Although most Syrian physicians and nurses used the MBYS system, over one third still did not know how to use it. The most common reason for not using the MBYS system was lack of time.

Fig. 10. Use of the MBYS system, by current workplace

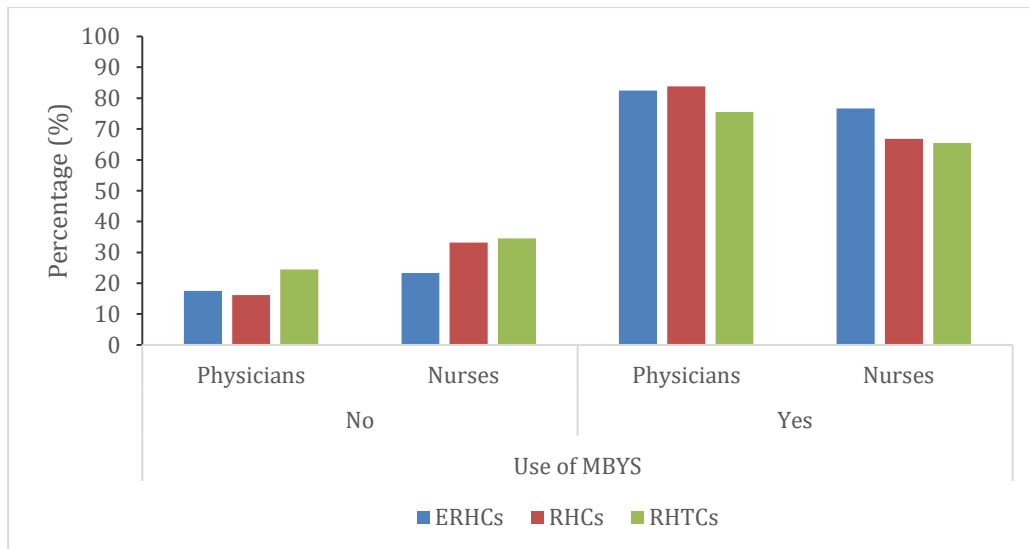
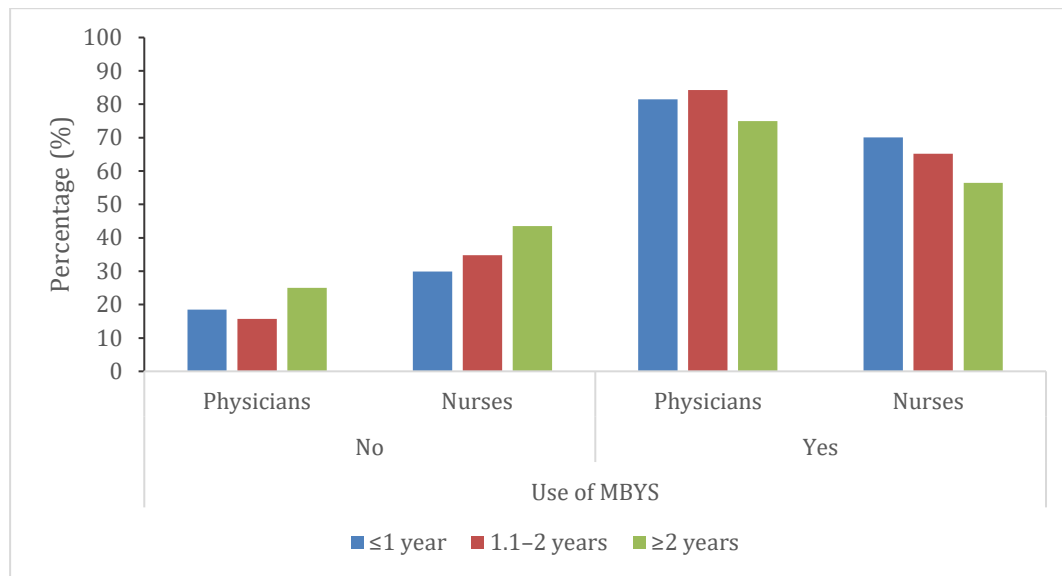


Fig. 11. Use of the MBYS system, by time working in current institution



The NCD management skills of physicians and nurses were evaluated based on their responses to 14 statements. Over half of the physicians said that they always enquire about the healthy behaviour of their patients and make recommendations on nutrition and physical activity. The response rate was the similar among nurses, but they also advised patients on how NCDs might affect their life course and how they could get further support from other referral services.

The actions undertaken least often by both physicians and nurses were referring patients to a dietitian or health education nurse, advising patients to participate in health programmes and giving written recommendations to their patients.

In FGDs, health-care personnel said that they do not have much time to use diagnostic tools or do not know how to use them.

Overall, more than half of both physicians and nurses stated that they always ensure patient confidentiality at consultations; they also ask their patients to sit down, address their patients by their name, speak clearly and make sure that patients have understood their instructions. Health-care personnel made the least use of written instructions, leaflets and brochures. Most physicians and nurses did not make much use of educational materials and did not often provide written recommendations to their patients.

In FGDs, they said that they do not have enough time or do not know how to use these information and communication tools.

**FG.31.3.(all participants).** We have some material on healthy life choices; they might be helpful. But patients do not give us feedback on these materials.

**FG.34.3.D5.** We have a lot of leaflets; you can check them. But the translation is too bad and illogical as if they have been translated from another translation!

**FG.34.3.D3.** There are two television screens downstairs. Broadcasting information in Arabic on those screens would be better than giving leaflets.

**FG.35.1.D5.** With this heavy workload, we cannot allocate too much time for patients.

**FG.35.1.D5.** To inform patients, leaflets are distributed at reception. When we started distributing them, patients were not paying attention to them and were throwing them away.

Now we have found a solution: we started writing the appointment numbers on the leaflets.  
Now they take the leaflets read them more than they did before.

In FGDs, patients said that they have very good communication with the health-care personnel at RHCs. Health-care personnel respect patients' privacy, explain everything clearly and address patients respectfully. When patients go to hospital, they communicate with the help of a translator, and they are not confident that they translate everything correctly. Patients also complained of a shortage of translators. They think that leaflets might be helpful; even though they cannot read or write, they said that they would ask their children to read the leaflets to them. However, other participants said that most of the leaflets are not read and are thrown away, and that they are useless. Although most patients said that they obtain health information on topics they do not know about or understand from neighbours, friends and relatives, they also follow the recommendations of health-care personnel.

**FG.31.1.P1.** They give us leaflets at the hospital as well and they are helpful. I wish they had given us these leaflets earlier, so that I would have known about my disease earlier.

**FG.34.1.P3.** If the leaflet is about something I do not know, I read it. But if it is about something I already know, I don't pay attention.

**FG.34.1.P7.** It would be better if they provided video clips; there are elderly people who cannot read or write.

**FG.42.1.P10.** Since health-care personnel don't have much time, they don't give us special treatment but they treat us respectfully.

**FG.63.1.P8.** Physicians provide oral information. They also give us leaflets at reception and in the physician's office. There are no leaflets about vaccinations or heart diseases.

Table 12 summarizes the scores for self-assessed NCD management and communication skills based on a five-point Likert scale.

Table 12. Scores for NCD management and communication skills

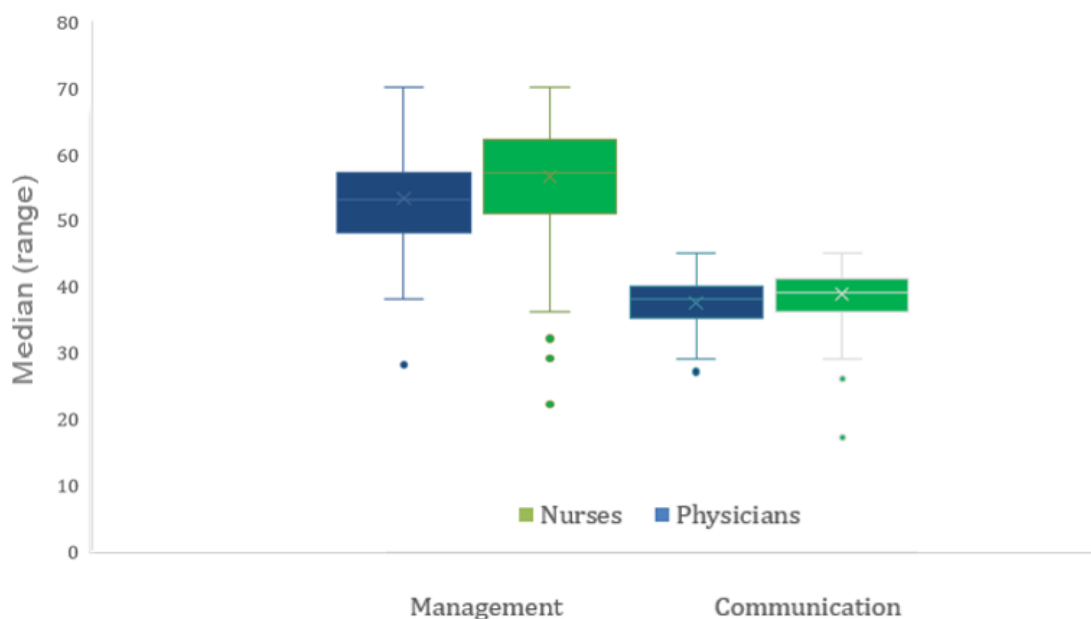
Value	NCD management score <sup>a</sup>		NCD communication score <sup>b</sup>	
	Physicians	Nurses	Physicians	Nurses
Mean $\pm$ SD	75.9 $\pm$ 9.5	80.7 $\pm$ 11.4	82.8 $\pm$ 7.5	86 $\pm$ 8.6
Median (range)	75.7 (40–100)	81.42 (31.4–100)	84.4 (60–100)	86.6 (37.7–100)

<sup>a</sup> Possible scores for NCD management were between 20 and 100.

<sup>b</sup> Possible scores for NCD communication skills were between 20 and 100.

Overall, nurses had slightly higher scores for both NCD management and communication compared with physicians (Fig. 12).

Fig. 12. Scores for NCD management and communication skills, physicians and nurses



There was a moderate positive and statistically significant correlation between NCD management scores and NCD communication scores for both physicians ( $r = 0.534$ ,  $P < 0.001$ ; Fig. 13) and nurses ( $r = 0.546$ ,  $P < 0.001$ ; Fig. 14).

Fig. 13. Correlation analyses of NCD management scores and communication scores: physicians

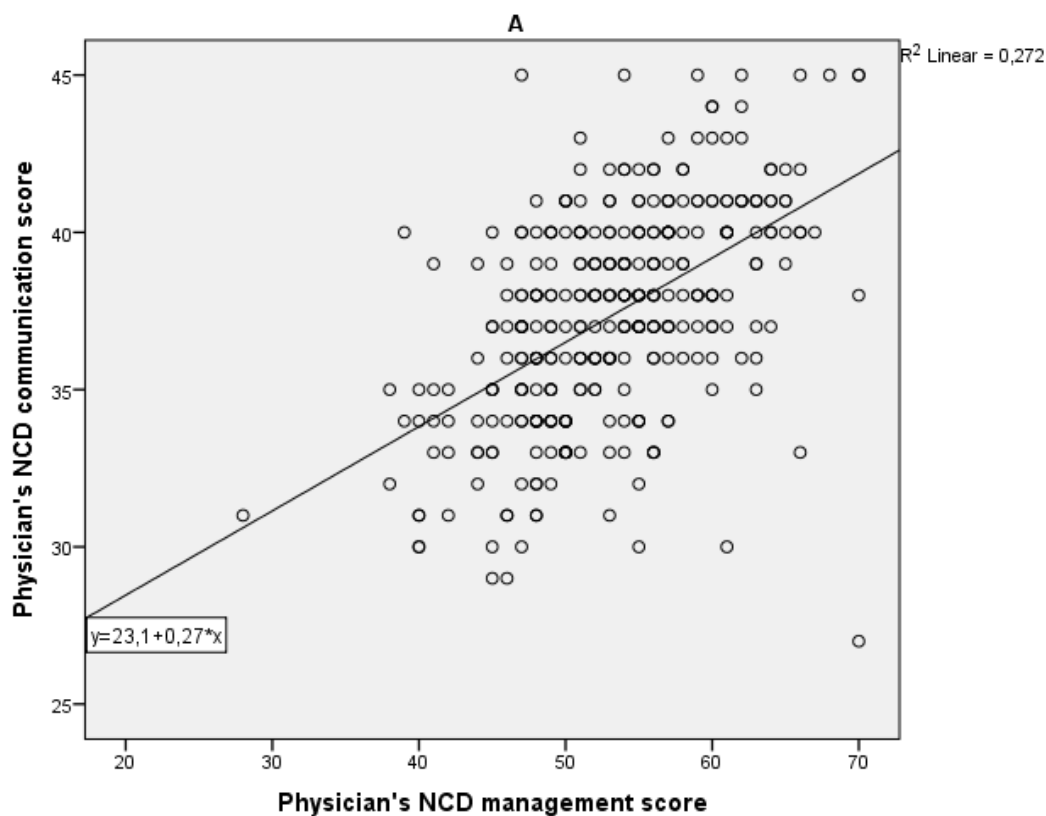
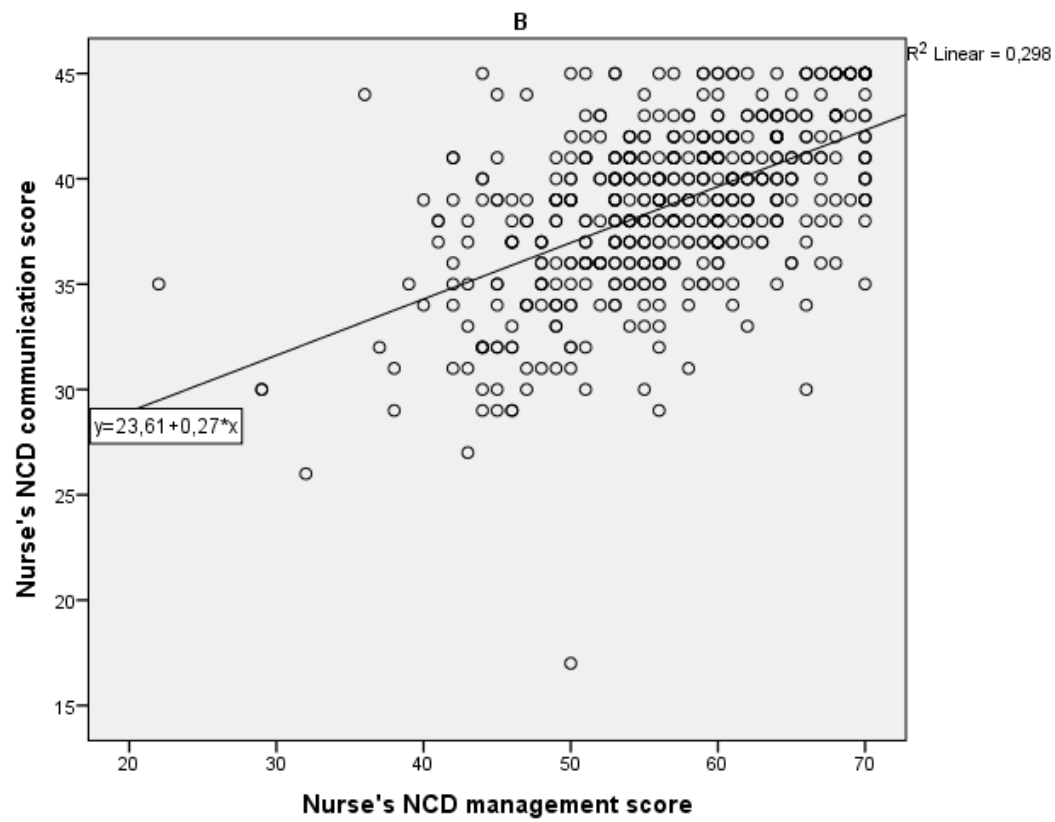


Fig. 14. Correlation analyses of NCD management scores and communication scores: nurses



## Discussion

A total of 832 health-care personnel participated in the quantitative part of the study. About half of physicians were specialists, and half of those were paediatricians and surgeons. For both physicians and nurses, over 60% had been working at RHCs for less than a year.

In the survey, physicians and nurses gave differing responses about the most common type of NCDs in patients attending RHCs: physicians said respiratory diseases, while nurses said CVDs. In contrast, a study among Syrian refugees in Jordan reported that hypertension (9.7%) was most common NCD in refugees, with lower prevalences for diabetes (5.3%) and respiratory diseases (3.1%) (20). This difference might have been caused by physicians in the present study including upper respiratory infections in their responses, even though infectious diseases were not being investigated.

However, in FGDs, both physicians and nurses reported that hypertension was the most common NCD among Syrian refugees, followed by diabetes mellitus and CVDs. Another qualitative study conducted in Istanbul reported the same findings (22), and another study of Syrian refugees and asylum-seekers (mainly in the Middle East) reported that the most common NCDs were musculoskeletal diseases, hypertension, CVDs, diabetes mellitus and chronic obstructive pulmonary disease (23). The 2015 study of Syrian refugees in Jordan reported that hypertension, arthritis, diabetes mellitus and CVDs were the most common diseases (20). High levels of risk factors for NCDs, such as obesity and smoking, have been reported among Iraqi refugees (23).

Health-care professionals at RHCs said they prefer a symptom-based approach to diagnosis for patients with a suspected NCD. Since Syrian physicians working at RHCs gave little information on how they follow up patients with NCD, we interpreted this to mean that they prioritize the diagnosis and treatment of NCDs over follow-up. On the other hand, nurses do not make medical decisions but, in general, follow the physicians' instructions. After taking the requested measurements (i.e. of blood pressure or blood glucose), they return patients to the physician's care. Use of evidence-based guidelines on NCDs was notably low (64% among physicians and 59% among nurses). In FGDs, participants said that they generally relied on the knowledge they had gained in medical or nursing school. The main reason for this choice was a lack of evidence-based guidelines and diagnostic algorithms; however, they noted that they would use the guidelines if they were available. In contrast, 45% of Turkish physicians used such guidelines nationwide (24). Another small-scaled study found that 57.3% of family physicians and residency trainees used national and international guidelines (25). Evidence from both the quantitative survey and FGDs revealed that no standard approach is used for medical history taking, physical examination, treatment or consultations for NCD patients. The reliance of Syrian physicians on knowledge gained in their undergraduate medical education is problematic because the half-life of medical knowledge is rapidly decreasing: in 2020, the estimated half-life of medical knowledge is only 73 days, compared with 3.5 years in 2010 (26). In this context, Syrian physicians and nurses are unlikely to be able to cope with the increasing demand for health-care services without a systematic intervention, including a standardized NCD management algorithms, continuing medical education and effective organization of the primary health-care system.

In FGDs, most patients with NCDs said that they been diagnosed after arriving in Turkey. They speculated that the current humanitarian crisis in Syria, stress and harsh living conditions were the major contributory factors to their health problems. Therefore, besides the conventional risk factors (e.g. family history, poor nutrition, lack of exercise and smoking), war-induced stress might be a contributory risk factor for NCDs (27).

More than half of the health-care professionals said they regularly measured patients' blood pressure. Comparison of the three types of institutions included in the study showed that physicians working in extended RHCs took measured blood pressure least often and nurses working in extended RHCs measured



blood pressure most often. Physicians who reported measuring blood pressure most often appeared to be those with better training in measuring blood pressure. A study in Germany reported that among community members without hypertension, 62.5% of men and 78.1% of women had had their blood pressure measured by health-care personnel within the last year (28). Specialist physicians felt more competent than general practitioners in the diagnosis, treatment, follow-up, rehabilitation and education of hypertension patients. Furthermore, physicians working for RHTCs felt more competent in managing hypertension compared with those working in the other institutions. In FGDs, specialist physicians and other physicians working in RHTCs said that they routinely measure blood pressure in patients aged over 40 years; this supports their symptom-oriented approach. Compared with general practitioners, specialist physicians were more likely to measure blood pressure; on the other hand, general practitioners were more likely to refer patients suspected of having hypertension or other NCDs to specialists. A study of refugees in Istanbul reported that hypertension was the most common NCD among those aged over 45 years (29). The same study reported a lack of follow-up for hypertension patients and that a limitation in RHCs was a lack of blood pressure devices. However, it made an important observation: since most of physicians in RHCs are general practitioners and some hypertension medications require a written prescription from a specialist, patients sometimes struggle to obtain their medications. The same finding was made in the present study. Nurses usually measure patients' blood pressure at the physician's request, and direct patients with high blood pressure to the physician. Nurses said that they only sometimes make recommendations about healthy lifestyle choices to their patients (29). A study in Kenya reported similar findings (30).

Around a quarter of physicians and half of nurses said they regularly measure blood glucose levels. Similar to findings for blood pressure, doctors working in extended RHCs reported the lowest frequency of blood glucose measurement and nurses working in the same institutions reported the highest frequency of blood glucose measurement. Physicians who had received training on diabetes were most likely to measure blood glucose levels. Specialist physicians felt more competent than general practitioners in the diagnosis, treatment, follow-up and education of diabetes patients. A study on Syrian refugees reported that the frequency of blood glucose measurement was too low. In FGDs, participants said that the most common problems in diabetes management were the heavy workload of physicians, lack of an integrated medical record system and patients not being able to see the same physicians for follow-up visits. Most of the physicians did not use a standard diagnostic guideline for diabetes. A similar study of family physicians in the United States of America reported similar results, stating that physicians diagnose and manage diabetes by measuring only the blood glucose and HBA1c levels. Recommendations to eliminate deficiencies in chronic disease management and establish better follow-up practices include training patients and giving them responsibility for diabetes self-management (31,32).

The survey found that 70% of health-care professionals ask their patients about NCD risk factors, such as family medical history, obesity, smoking, salt consumption, physical activity, regular use of medications and alcohol consumption. Findings from FGDs supported this observation: most health-care professionals asked about risk factors when taking a patient's medical history. A large multicountry study including patients from 52 different countries reported that factors related to age, sex, smoking, alcohol consumption, hypertension, hyperlipidemia, diabetes, family history and obesity account for more than 90% of the attributable risk for myocardial infarction (33). The present study found that only high-risk patients are usually asked about risk factors. However, most NCDs are known to be prevented by the early implementation of risk reduction measures such as smoking cessation, reducing alcohol consumption, a healthy diet and increasing physical activity (18). A qualitative study reported that in many parts of the world the family physician's time is occupied with treatment-focused activities and addressing patients' priorities; therefore, there is insufficient time to focus on health promotion activities (34,35).

In the survey participants, the consensus was that patients have difficulty understanding and following the recommendations of physicians at RHCs. On the other hand, doctors failed to follow-up their patients to

monitor adherence. However, a people-centred approach incorporating good health communication is necessary to make a sustainable impact on health behaviours. Health-care providers should be good role models for their patients by using motivational communication techniques and standardized disease management algorithms (36). Patients said that they receive lots of leaflets and written material, but many cannot read. Even when they can read, they do not find the written material helpful.

In FGDs, some patients said they had received healthy life recommendations from health-care personnel and others said they had not. Patients said they had received generic recommendations on smoking cessation, health nutrition, limiting salt intake and physical activity rather than recommendations tailored to their own personal situation. In particular, physicians did not provide dietary recommendations and suggested that a dietitian should be available to provide support at RHCs. Although this would be a positive step, it reflects a need for a continuing medical education. In this regard, use of a systems approach to establish a coordinated partnership between RHCs and Healthy Life Centres in Turkey could improve the quality of health-care services and provide opportunities for continuing medical education and resource sharing. The most challenging recommendation for patients was physical exercise and walking: one amputee reported receiving recommendations for physical exercise and walking. Patients also emphasized that they do not read leaflets, brochures and other written material. However, a 2018 report by the European Cardiology Association stated that healthy life choices, such as smoking cessation, health nutrition, limiting salt intake, physical activity, can reduce hypertension and CVD risks (36–38). Therefore, it is critical to effectively convey these messages to patients to help them manage their NCD risk factors. Some refugee patients reported consulting family members, neighbours, the Internet and social media for health recommendations (22). However, in our FGDs, patients said they do not trust the recommendations they receive from these sources.

The survey found that most health-care personnel measure patients' height and weight, but only 44% measured waist circumference (mostly nurses). Participants in FGDs supported these practices. However, the United States National Heart, Lung, and Blood Institute's website states that "measuring waist circumference helps screen for possible health risks that come with overweight and obesity" (39). Waist circumference is also important to monitor diabetes risk. Therefore, health-care professionals should be encouraged to include this measurement in their work routine. The waist-to-height ratio is also another good tool to monitor health risk and obesity (24).

Both physicians and nurses felt competent to manage hypertension. In contrast, physicians felt competent to manage diabetes, but nurses did not, and neither physicians nor nurses felt competent to manage CVDs. Notably, a study on NCDs and risk factors in Turkey reported that 4.1% of Turkish primary care physicians rate their ability to manage NCDs as poor or very poor (24). In FGDs, both physicians and nurses said that they need more in-depth training on NCD management. They suggested that additional training programmes on healthy life choices would be beneficial for both health-care personnel and patients. Therefore, it is clear that both physicians and nurses at RHCs would significantly benefit from an in-depth training programme on NCD management.

The survey showed that a significant majority of physicians and nurses had not received specialized training in NCD management. In FGDs, health workers requested specialized training programmes to improve their NCD management skills. They also asked for training programmes to be developed on health communication skills and health life choices for both health-care personnel and community members. A study from South Africa reported that similar training programmes run by nurses had improved follow-up in 68% of hypertension patients, 82% of diabetes patients and 84% asthma patients, improved the health status of these patients and reduced related health-care costs (40). Furthermore, in a multidisciplinary coordinated approach, prevention-oriented health management programmes have effectively improved health outcomes at the community level (41–44). Based on the findings of this study, we strongly

recommend that the Turkish Ministry of Health and SIHHAT project should develop in-depth training and certification programmes for health-care professionals at RHCs.

Quantitative survey data showed that most health-care professionals at RHCs see fewer than 25 patients per day and that almost one third can allocate six to 10 minutes per patient consultation. The average number of consultations per day varied among the different centres, with 10.3 at RHCs, 11.6 at extended RHCs and 8.6 at RHTCs. These numbers were contradicted by physicians at FGDs, who said their heavy workloads prevented them from allocating enough time for their patients. This unfounded claim might reflect a lack of training or poor organization of health-care services at RHCs. More physicians reported using the electronic medical recording system (MBYS) compared with nurses. Those who did not use the MBYS said they lack the time and knowledge to do so. In addition to providing MBYS training programmes, employing professional medical secretaries to streamline the medical recording system would have a major impact on the time needed for, effectiveness and cost of health-care services in both RHCs and all primary health-care facilities.

The most common challenge reported by health-care personnel in NCD management was a lack of patient compliance in follow-up and medical recommendations, which was reported by 75% of survey participants. Other challenges were limited information resources and information materials and patients not reading the available information materials.

For each group, scores for NCD management and communication skills scores showed a significant correlation ( $r = 0.53$ ,  $P < 0.05$ ), and scores were higher among nurses than physicians.

## Conclusion and recommendations

Alongside the rising prevalence of NCDs worldwide, the prolonged civil war in Syria and the associated humanitarian crisis has created a significant additional workload for the Turkish health-care system, and a need for a long-term care and service provision. To investigate the needs, gaps and priorities of NCD management in primary health-care provision in RHCs, a needs assessment was conducted in RHCs, including both health-care providers and patients.

Patients were found to lack knowledge and information on healthy life choices and NCDs. Furthermore, they were uncertain about which services they can obtain at RHCs, and when and how they should visit RHCs. Therefore, patients would benefit from an educational programme informing them about healthy life choices, NCDs and the functions of RHCs.

Patients also lacked knowledge and information on NCD treatment and follow-up procedures, and did not comply with physicians' recommendations and instructions. Therefore, educational programmes emphasizing the importance of following the physician's guidance and recommendation would benefit patients.

Patients were found to be unaware of health life choices, NCD management and which primary health-care services they can obtain at RHCs. Therefore, they failed to comply with the physician's instructions, follow-up requests and recommendations. It is necessary to increase knowledge, awareness and skills among community members to improve patient compliance and NCD management, as well as primary health-care services.

For health-care personnel, scores for both NCD management scores and health communication scores were low and correlated significantly. This finding indicates the importance of incorporating health communication skills training into integrated NCD management training programmes.

When making healthy life choice recommendations, over half of health-care professionals (53.3% of physicians and 58.4% of nurses) focused on physical exercise and diet. Instead of providing every patient with tailored advice on healthy life choices, they tend to make generic recommendations on healthy nutrition, physical activity, alcohol consumption and smoking cessation and only for high-risk patients. Since healthy life choices are critically important for the prevention and management of NCD, training and intervention programmes should be developed to improve knowledge and raise awareness of NCDs in health-care professionals.

Neither nurses nor physicians used standardized guidelines and diagnostic algorithms in NCD management. Instead, physician made subjective assessments of the NCD risk based on their knowledge and professional judgement. Therefore, it is necessary to provide training on the prevention, early diagnoses and treatment of NCDs and to develop practical evidence-based guidelines and diagnostic algorithms.

Health-care personnel also reported that another challenge is that the current system does not enable NCD patients to be followed up by the same physician and that not all health-care personnel can access patients' medical records. These challenges could be resolved at the organizational level by effective use of the MBYS, integrating the MBYS into health-care service and appointment system, employing medical secretaries to handle MBYS.

The study found that most health-care services were focused on treatment and that preventive health-care services and health promotion were generally neglected. It was evident that the current structure of health-care service provision is not compatible with preventive health-care services and health promotion. Like all primary health-care facilities, RHCs need to prioritize health prevention and promotion instead of treatment-oriented services. We suggest that systematic interventions, continuing education and collaboration could improve the effectiveness of primary health-care services. To achieve this, it is

important to improve the knowledge and awareness of health-care professionals, community members, and health-care planners and administrators. Establishing well-functioning, integrated primary health-care services is necessary for effective NCD management. Requests from study participants demonstrated that training and educational programmes and interventions are urgently needed.

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