Unveiling Non-Communicable Disease Risk Factors: Primary Health Care's Screening Efforts in Albania

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ABSTRACT

Introduction: Primary health care is an effective way to identify and screen the risk factors of non-communicable diseases (NCDs).

Methods: A cross-sectional study was conducted among a primary care population. 500 consecutively approached individuals, exiting the Primary Health Care (PHC) centers after attending the service, were interviewed face-to-face about their socio-demographic characteristics, the presence of NCDs, the presence of any NCDs risk factors, as well as if they had been asked, informed, or tested respectively about each risk factor by their PHC providers during the medical visit or after the check-up. An adapted World Health Organization STEPS questionnaire was used as a survey instrument.

Results: Within the sample, PHC providers had asked 71.7% of current smokers, 60.6 % of current alcohol users, 42 % of individuals who eat inadequate servings of fruits and/or vegetables per day, 45.2% of excessive salt consumers, and 46.8% of individuals who engage in low physical activity, respectively, about each lifestyle risk factor. PHC users with at least one chronic condition were more likely than those without a chronic condition, to be asked by PHC providers about smoking (p<0.01), alcohol consumption (p<0.01), salt consumption (p<0.01) and any of the risk factors after the "check-up" control (p<0.001). 30% of subjects had done a "check-up" control last year.

Conclusions: Primary health care faces a large population with chronic conditions and associated risk factors. The role of primary health care providers in identifying NCD risk factors is moderate and should be increased until full coverage of screening all "at-risk" individuals

KEYWORDS: primary health care, non-communicable diseases, risk factors, identification, screening

INTRODUCTION

Primary health care (PHC) is an effective way of identifying risk factors that affect people's well-being and health and contribute to the occurrence of non-communicable diseases (NCDs).(1) Due to the progressive evolution of non-communicable diseases, individuals at-risk are often asymptomatic, so the first manifestation of a serious health event may be a heart attack or stroke.(2) Since PHC is the first link in the health care system, identifying and screening risk factors, even among asymptomatic persons, is a very important aspect of non-communicable diseases prevention.

Non-communicable diseases, mainly cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes constitute the largest burden of morbidity, accounting for approximately 63% of annual deaths worldwide and about 86% of these premature deaths mostly occur in low- and middle-income countries.(3) Albania, a former communist country in the Southeastern Europe region, has undergone an economic transition and, since 2009, is considered an upper-middle-income country.(4) At the same time, the epidemiological transition is characterized by a significant increase in the burden of NCDs with the major contributors some of the risk

factors such as tobacco use, heavy alcohol consumption, physical inactivity (PA), and unhealthy diet.(5)

Simultaneously, there are differences in socio-demographic risk factors of NCDs, which serve to guide preventive and intervention measures, integrated into health services.(6) The identification of modifiable risk factors for non-communicable diseases, at the PHC level, is the first step towards the adoption of additional counseling and preventive measures for NCDs, in the framework of primordial and primary prevention. Population health risk management, NCDs prevention, identification of NCDs risk factors, informing and educating on these factors are the responsibility of primary health care providers, integrated into the duties of the primary care physician or nurse.(7) In this context, at the end of 2014, a national check-up program, which aims to screen the population for the most prevalent risk factors and morbidity, was launched for people 40–65 years and later extended to people 35–70 years old in 2017.(8) As a result, there has been noticed an increase in population attendance in PHC and a positive approach to the use of preventive services, by marking a large number of visits to health centers, an average of 3 contacts per person per year in 2018, and more than 1.4 million health checks performed up to the end of 2019.(9,10)

METHODOLOGY

Type of study

This is a cross-sectional study conducted during August 2020-February 2021

Population study and sampling

The proposed target population of the study were primary health care users aged over 35. However, to support the objectives of the study, we included individuals over 18 years of age who still carry the potential of being exposed to one or more of the risk factors of non-communicable diseases. The study was conducted in the Tirana Region, which makes up about 1/3 of the Albanian population.(11) We randomly selected two health centres, in two different administrative units, respectively in Tirana, Health Centre No. 7 with urban characteristics and in Kamez, Health Centre Paskuqan with rural and peri-urban characteristics. Assuming the highest proportion (50%), 95% confidence interval (CI), and margin of error of 5%, an initial sample size of 384 individuals was calculated, but in order to adjust for the anticipated 20% non-response rate and to increase the power of the study, a sample size of 500 individuals was estimated. Inclusion criteria for individuals exiting the selected health centers after attending the service were: a) Individuals, either 18 years or older b) Written informed consent.

In total, 726 of the individuals were invited to partake in the study, 500 individuals were interviewed, (250 at urban HC Nr.7 Tirane, 250 at rural/periurban, HC Paskuqan, Kamez). There were no significant gender differences between responders and non-responders (p=0.7).

Data collection and data collection instrument

The survey instrument (questionnaire) was applied consecutively to individuals who attended the service and exit the health care facilities until the predefined number of questionnaires was reached. The data collection consisted of a face-to-face interview conducted through a 58-item structured questionnaire based on the World Health Organization (WHO) STEPS 1 questionnaire for surveillance of NCDs risk factors (12) and further extended in questions on the role of primary health care in identifying and screening these risk factors. The questionnaire contained key socio-demographic characteristics, such as age, gender, education, occupation, residence, economic status, marital status, questions about tobacco use, alcohol consumption, fruit and vegetable consumption, salt intake, physical activity, non-communicable diseases, and check-up performing. Another session of the questionnaire included questions on whether the individuals have been asked and/or informed, respectively, of all the above-mentioned lifestyle factors by PHC providers during the medical visit or after the check-up and whether blood pressure or glucose levels of individuals have been measured.

The WHO STEPS questionnaire was translated into Albanian and its adaption was done for several questions such as "if the population was asked or informed about respective NCDs risk factor **by a PHC doctor or nurse during the medical visit or after the check-up** (yes/no)", "whether the population had performed a check-up last year (yes/no)" and "if the population had their blood pressure or glucose test measured **by a PHC doctor or nurse** (yes/no)". The adapted questionnaire was reviewed by local experts and then pre-tested assuring face validity and content validity. Interviews were conducted by public health students, which were trained for two days prior to data collection.

Definitions and measurement of variables

The variables included socio-demographic characteristics: gender, age (categorized into: 18-34 years, 35-65 years and ≥66 years), education (categorized into: 0-9 years, 10-12 years and ≥13 years), employment status (categorized into: employed, unemployed, retired) place of residence (urban vs. rural areas), marital status (categorized into: never married, married, divorced/widowed/separated) and economic status (categorized into: very bad/bad, average, and good/very good). Smokers were categorized into smokers and non-smokers. Alcohol consumption was dichotomized into those who are current drinkers and have drunk at least 1 alcoholic beverage in the past month and otherwise. Consumption of fruits and vegetables was dichotomized in individuals who ate less than 5 servings of fruits and/or vegetables a day and those who ate 5 or more servings of fruits and/or vegetables a day. Salt consumption was dichotomized in individuals who always or often add salt or salty sauce to food before or during meals, and those who rarely or never add salt or salty sauce to food before or during meals.

Physical activity is categorized into low physical activity,

moderate physical activity and high physical activity, based on the recommendations of the WHO STEPS manual.(12) In order to meet all the definitions of the three categories of physical activity, the MET-minutes were calculated in advance, and then we selected the cases using the option "If conditional" in SPSS, according to the cut-offs of MET-minutes, cut-offs of the number of days per week and cut-offs of the number of minutes per day performed as intense, moderate physical activity or walking/ pedaling, respectively for each PA category. Variables related to the screening or informational role of PHC providers on non-communicable disease risk factors were dichotomized to "yes" or "no". Reporting of at least one chronic condition (cardiovascular disease, stroke, cancer, COPD, asthma, hypertension, diabetes, obesity, dyslipidemia) was dichotomized into "yes" vs. "no".

Data analysis

To describe the categorical data, the frequencies and their respective percentages were calculated. Mean and standard deviation were calculated, to describe numerical data.

In order to compare groups of interest, the data obtained were analyzed statistically using chi-square test. In all cases, a P-value≤0.05 was considered statistically significant.

Statistical Package for Social Sciences (SPSS, version 26.0) and Microsoft Office Excel 2007 were used for all the statistical analyses.

Ethical considerations

All participants in the study were informed about the purpose and objectives of the study. Confidentiality and privacy of participation were assured. Written consent for participants was obtained confirming the voluntary participation and the right to withdraw from the study at any point in time. An approval letter from the Ethics Committee at the Ministry of Health and Social Protection was received on 16.10.2020.

RESULTS

Overall, the prevalence of primary care users aged over 18 years with at least one chronic condition was 49.6%. The average age of participants was 49.19 (SD=16.578).

The prevalence of chronic diseases was higher among men than women (55.8% versus 45.2%, respectively). Older age groups (≥66 years and 35-65 years) had a higher prevalence of chronic diseases compared to the younger age group (18-34 years old), respectively (93.7% vs 52.2% vs 6.9%). The prevalence of chronic diseases among primary care users in urban health centres was slightly higher than that of primary care users in rural health centres (51.2% vs 48%).

Retirees and the unemployed had a higher prevalence of chronic diseases compared to employees (92.2% vs. 42% vs. 25.6%, respectively). The prevalence of chronic disease was higher among divorced and widowed (80.5%) compared to married (53%) and never married (13.9%). Individuals in very bad/bad economic status had a higher prevalence of chronic conditions compared to average or good/very good economic level (69% vs. 49.7% vs 25.7%, respectively). (Table 1)

Table 1: Distribution of socio-demographic characteristics of primary health care users by the presence of chronic diseases. Absolute numbers and their respective row percentages

Variable	Chronic conditions Sample N(%)	No chronic conditions Sample N(%)	Total Sample N(%)
Sex:			
Men	115 (55.8)	91 (44.2)	206 (100)
Women	133 (45.2)	161 (54.8)	294 (100)
Total	248 (49.6)	252 (50.4)	500 (100)
Age group:			
18-34	8 (6.9)	108 (93.1)	116 (100)
35-65	151(52.2)	138 (47.8)	289 (100)
≥ 66	89 (93.7)	6 (6.3)	95 (100)
Residence:			
Urban	128 (51.2)	122 (48.8)	250 (100)
Rural	120 (48)	130 (52)	250 (100)
Employment:			
Yes	41 (25.6)	119 (74.4)	160 (100)
No	99 (42)	123 (58)	212 (100)
Retired	118 (92.2)	10 (7.8)	128 (100)
Education:			
0-9	152 (63.6)	87 (36.4)	239 (100)
10-12		85 (59)	144 (100)
Over 13		80 (68.4)	117 (100)

	59 (41)		
	37 (31.6)		
Marital status:			
Never married	10 (13.9)	62 (86.1)	72 (100)
Married	205 (53.0)	182 (47)	387(100)
Divorced/Widowed/Separated	33 (80.5)	8(19.5)	41(100)
Economic status			
Very bad/bad	58 (69)	26 (31)	84 (100)
Average	172 (49.7)	174 (50.3)	346 (100)
Good/very good	18 (25.7)	52 (74.3)	70 (100)

In total, only 3.4% of participants were completely free from one of the 5 established NCD risk factors (smoking, alcohol consumption, insufficient physical activity, poor fruit and vegetable consumption and excessive salt consumption). Reports by primary health care users found that: 36.7% of current smokers, 51.4 % of individuals who currently drink, 61.4% of individuals who perform low physical activity, 49.4% of individuals who consume less than 5 fruits and/or vegetables per day, 51.1% of individuals who always or often add salt to food before or during meals, referred to at least one chronic condition. (Figure 1)
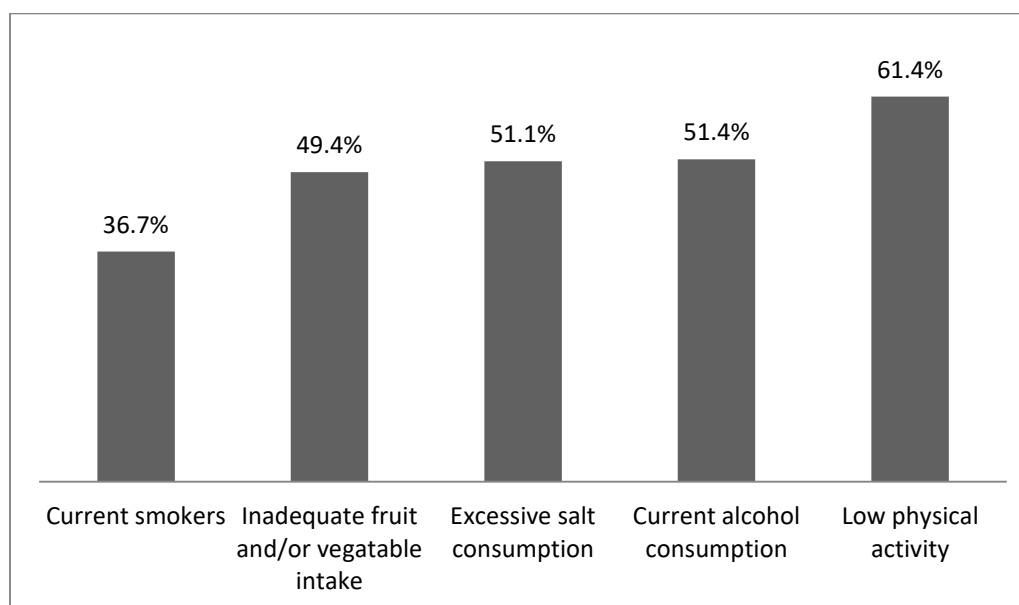

Figure 1: Prevalence of NCDs risk factors in individuals with at least one chronic condition

67.8% of study participants and 71.7% of current smokers were asked by their PHC doctor or nurse if they smoked, while 69% of study participants and 75% of smokers were informed by their PHC doctor or nurse about the risks of smoking. 62.2% of study participants and 60.6 % of current alcohol users were asked by their PHC provider if they drink alcohol, while 62.6% of subjects and 64% of current alcohol users were informed by their PHC providers about the risk of alcohol consumption. 44% of participants and 42 % of individuals who eat inadequate fruit and/or vegetable servings per day, were asked about fruit and/or vegetable consumption. 51% of subjects and 45.2% of excessive salt consumers were asked by their PHC provider about salt consumption, while 57.6% of subjects and 53.4% of excessive salt consumers were informed by their PHC provider about the risk of excessive salt consumption. 44.2%

of participants and 46.8% of individuals who perform low physical activity were asked about physical activity, while 52% of participants and 55.1% of individuals who perform low physical activity were informed about the risk of performing low physical activity. (Table 2) (Figure 2)

30% of the subjects, 16.7% of smokers, 29.1% of alcohol users, 30,1% of individuals who eat inadequate fruit and/or vegetable servings per day, 25.6% of excessive salt consumers and 29.1% of subjects who perform low physical activity, have done a check-up control.

Table 2: Percentages of individuals with a present risk factor asked or informed respectively about each risk factor by PHC providers or checked up at PHC center

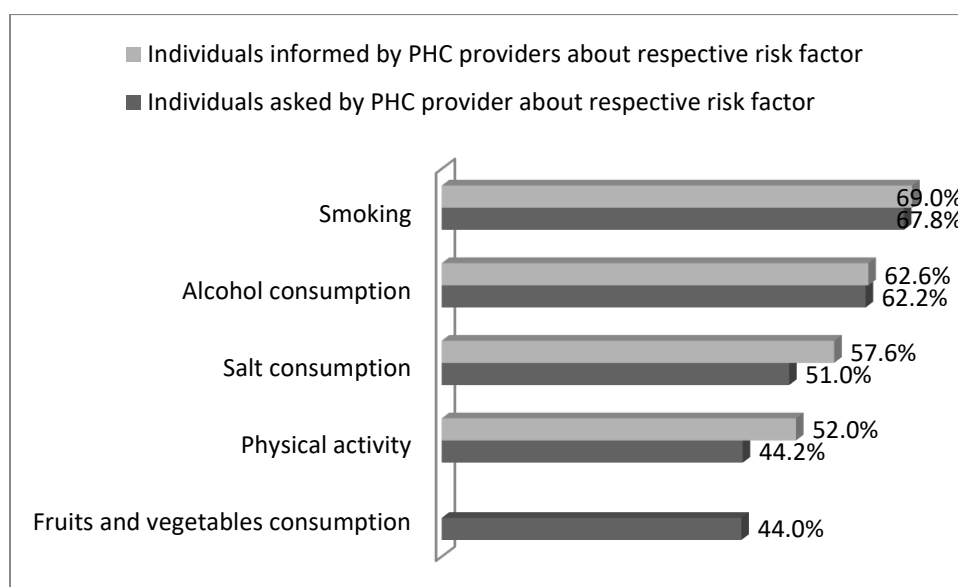| Present NCDs risk factors	Individuals at risk asked by PHC providers about respective risk factor	Individuals at risk informed by PHC providers about respective risk factors	Check up Control at PHC centers
Smoking	71.7%	75%	16.7%
Alcohol consumption	60.6%	64 %	29.1%
Inadequate FV intake (less then 5)	42 %		30.1%
Excessive Salt Consumption	45.2%	53.4%	25.6%
Low physical activity	46.8%	55.1%	29.1%

Figure 2: Percentages of PHC users asked or informed by PHC providers about respective risk factor

PHC users with at least one chronic condition were more likely than those without a chronic condition, to be asked by PHC providers about smoking status, χ^2 (1, N = 500) = 7, 04, p < .01, alcohol consumption, χ^2 (1, N = 500) = 7.4, p<0.01, salt consumption, χ^2 (1, N = 500) = 6,75 p<0.01, and any of the risk factors after the "check-up" control χ^2 (1, N = 500) =18.7 p<0.001.

There was no significant difference between individuals with at least 1 chronic condition and those who did not have any chronic condition, if they were asked or not by a PHC provider about fruit and vegetable consumption, χ^2 (2, N = 500) = 1,77, p>0.05, and physical activity χ^2 (1, N = 500) =2.28 p>0.05. (Table 3)

Table 3: Percentages of individuals with chronic conditions or without chronic conditions asked about each risk factor, respectively.

Presence of NCDs	Smoking	Alcohol consumption	Fruit and vegetable consumption	Salt Consumption	Physical activity	After Check up
Chronic condition	73.4%	68.1%	46.6%	56.9%	47.6%	51.2%
No chronic condition	62.3%	56.3%	41.3%	45.3%	40.9%	32.1%

77.2 % and 66.6% of individuals were tested for blood pressure and glucose, respectively.
PHC providers had tested 94.8% of subjects with chronic conditions and 59.9% of subjects without chronic conditions

for blood pressure and they had tested 83.1% of subjects with chronic conditions and 50.4% of subjects without chronic conditions for glucose level.

Individuals with at least one chronic condition were more likely than those who did not have any chronic condition, to have their blood pressure, χ^2 (1, N = 500) =86.18, p<0.001 and their glucose level measured χ^2 (2, N = 500) =59.97, p<0.001 by a PHC provider.

DISCUSSION

Our results show that there is a high prevalence of 49.6% of patients with at least one chronic condition in primary health care. Similar reports in the United States indicate a slightly lower prevalence of 45.2% of patients with at least one chronic disease in primary health care. (13)

Chronic diseases were most prevalent at higher ages, among males, among those less educated, in poor/very poor economic status, among urban health care users, in divorced/widowed subjects and in retired subjects. The characteristics associated with age, education, economic status, employment status, residence and marital status of subjects with at least one chronic condition correspond to similar previous studies.(14) Despite the predominance of women attending PHC services, men had a higher prevalence of chronic conditions.

Socio-demographic implications are important in the design of interventions, such as the 40-60 age group extended to 35-75 age group of the target subjects for basic health control in Albania.(8) Self-reported prevalence of smoking in chronic patients is 36.7% and it corresponded with previous study results in Albania.(6)

The results of our study indicate a high prevalence of some NCDs risk factors in chronic patients, such as insufficient consumption of fruits and vegetables, excessive salt consumption, alcohol consumption and low physical activity varying approximately between 50% and 60%.

A proposed global framework targets 90% of patients using PHC should be assessed and screened for major modifiable risk factors such as tobacco use, alcohol consumption, hypertension or diabetes (using simple tests) etc, to improve the primary care response to NCDs. (15) The assessment of PHC users about the major risk factors for NCDS, ranged from 44% for fruit and vegetable consumption to 69% for smoking.

Assessment of tobacco consumption by PHC providers is more common than the assessment of other risk factors. In a study conducted in four Midwest states in the US, 81% of patients who used primary care and 93% of patients who smoked in the last two years reported being asked about smoking, while 78% of the latter were advised to quit smoking.(16) In our study, 69% of study participants, 73.4% of chronic patients and 71.7% of smokers were asked about tobacco consumption, while 67.8% of subjects and 75% of smokers were informed about the potential risk of smoking. However, these percentages are below the target goal or previous similar reports. In a 2016 retrospective study in the U.S., 76.5% of subjects who accessed primary health care were asked by PHC providers if they had consumed alcohol in the last year and 5.5% of them had been advised to stop using alcohol.(17) In terms of alcohol consumption in our sample, PHC providers asked 62.2% of individuals, while 16 individuals attempted to give up alcohol, none of them attribute quitting alcohol consumption to PHC providers. In addition, the results of our study showed 44% of subjects were asked about fruit and vegetable consumption. However, there are no significant differences between chronic patients and individuals who do not have chronic diseases whether PHC providers asked them if they consumed fruits and vegetables. In a study conducted in Nova Scotia, the percentage of patients who were screened and received dietary advice from their primary physician was 38% and the patients most likely to be advised were those with non-communicable diseases.(18) A promotional health intervention in Catalonia increased PA screening coverage from 14.4% (2008) to 69.6% (2015) in PHC, whereas 42% of patients reported receiving physical activity counseling (Nova Scotia's study), and those most likely to be counseled were men, seniors, and patients with chronic conditions.(18,19) Similar results were obtained in our study, 44.2% of participants were asked by PHC providers regarding physical activity and 52% of participants were advised about physical activity. A study in China found that 60.4% of individuals over the age of 18 who received primary health care were screened for hypertension.(20) In our study, 59.9 % of individuals without any chronic condition reported that PHC providers measured their blood pressure.

Subjects who have NCDs risk factors and who performed the "Check-up" vary between 16.7% of smokers to 30.1% of those who do not consume enough fruits and vegetables. These low percentages are due to the fact that the target age group performing the check-up excludes a large younger age population with NCD risk factors.

LIMITATION

The period of data collection (November 2020-Janauary2021) corresponded to the progression of the COVID-19 epidemic in Albania, during the while, PHC centers attended COVID-19 positive patients and there was a risk of virus transmission. Although this fact may have affected the non-response rate, on the other hand, there were no significant differences in terms of gender respondents and non-respondents. This study relies on the report of individuals using primary health care. Therefore, the risk of recall bias, intentional or unintentional, should be considered while interpreting the results. As such, by referring to the consecutive exit interview of individuals who attended health care, selection bias cannot be excluded. The strong point of the study is that it provides an initial overview of screening for NCDs risk factors in primary health care and its role in identifying individuals at risk.

CONCLUSIONS

Primary health care faces a large population with chronic

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conditions and associated risk factors.

PHC providers are screening NCDs risk factors at moderate rates. The basic health screening program "check-up" plays an important role in identifying NCDs risk factors. However, the age groups under 35 are not selected as part of "check-up" control, even though the risk factors of NCDs are present at a young age in the Albanian population. PHC providers have also a tendency to identify risk factors, particularly in the population with chronic diseases.

The identification of NCDs risk factors is the first step leading to the next steps in the development of intervention programs to address these risk factors. The role of primary health care in identifying NCDs risk factors, through asking individuals on some of the harmful lifestyle factors as the first "A" component of the 5As Behavioral Intervention Strategy should be increased until full coverage of screening all individuals "at-risk". In the context of chronic disease prevention, this component should still be extended even to individuals at a young age or those without chronic disease, who may have various risk factors contributing to the onset of NCDs.

CONFLICT OF INTEREST
There is no conflict of interest in this study.

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