ORIGINAL RESEARCH

Self-perceived level of competencies of family physicians in transitional Kosovo

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Abstract

Aim: Family physicians and general practitioners are currently facing increasing demands to meet patients' expectations and rapid technological and scientific developments. The aim of this study was to determine the self-perceived level of competencies of primary health care physicians in Kosovo, a post-war country in the Western Balkans.

Methods: A cross-sectional study was conducted in Kosovo in 2013 including a representative sample of 597 primary health care physicians (295 men and 302 women; mean age: 46.0±9.4 years; response rate: 90%). A structured self-administered questionnaire was used in order to determine physicians' competencies regarding different domains of the quality of health care. The questionnaire included 37 items organized into six subscales/domains. Answers for each item of the tool ranged from 1 ("novice" physicians) to 5 ("expert" physicians). An overall summary score (range: 37-185) and a subscale summary score for each domain were calculated for each participant. General linear model was used to assess the association of physicians' self-perceived level of competencies with covariates.

Results: The internal consistency of the whole scale (37 items) was Cronbach's alpha=0.98. Mean summary score of the 37-item instrument and subscale summary scores were all higher in men than in women. In multivariable-adjusted models, mean level of self-perceived competencies was higher among older physicians, in men, those with >10 years of working experience, physicians serving >2500 people, specialized physicians and those involved in training activities.

Conclusion: Our study provides useful evidence on the self-assessed level of competencies of primary health care physicians in post-war Kosovo. Future studies in Kosovo and other transitional settings should identify the main determinants of possible gaps in self-perceived levels of physicians' competencies vis-à-vis the level of physicians' competencies from patients' perspective.

Keywords: competencies, family physicians, general practitioners, primary health care.

Introduction

In the past few years, there is evidence of a growing interest in competency-based medical education as – among other things – it focuses on outcomes such as development of abilities, skills and competencies (1). Therefore, competency-based education has also been introduced in public health training and education in order to close the gap between public health educational content and the competencies required in public health practice (2).

As a matter of fact, there is overwhelming evidence indicating that primary health care professionals are presently facing growing demands in order due to meet patients' expectations for higher quality health care services, as well as the rapid technological developments and scientific progress (3,4). Therefore, at a global scale, health care professionals are increasingly expected to provide better-quality health care services, especially in line with the aging population trend observed in most of the countries. Consequently, quality improvement in different domains and components of health care services are currently recognized as essential issues in health care practice (3,4). For this very reason, quality improvement needs to be included at all levels of medical education and in all aspects of health care services with the ultimate goal of improving the health of the populations (4).

The required competencies for quality improvement are especially relevant for primary health care professionals who face a continuous and huge demand for high-quality health care services from the serving populations. In order to cope with this situation, there have been recently suggested models of required or desirable abilities, skills and competences for medical doctors and health professionals at all levels of care including also continuous professional development (5). Such frameworks or models of abilities, skills and competencies are also deemed as a valuable tool for self-assessment of primary health care professionals aiming at improving their health care practices, analyze their clinical experience, plan improvement strategies, and determine a supposed improvement integrating knowledge, skills and abilities into the routine daily practice (4,6,7).

However, to date, the information about the content, structure and outcomes of teaching quality improvement topics within the medical curricula in European countries and beyond is scant. This is especially true for the former communist countries of Southeast Europe including Albania and Kosovo[1]. In 2008, Kosovo emerged as the newest state of Europe after ten years under United Nations' administration following a devastating war (8). Currently, Kosovo is trying to rebuild its health system (9,10) and, among the reforming efforts, an important aspect is the reorientation of health services to ensure basic medical care for all individuals but especially so for the vulnerable segments of the population (9-11). One of the main challenges of the reform concerns the human resources pertinent to the health sector. Nevertheless, there are no well-documented reports informing on the level of competencies of physicians and other health care professionals in Kosovo.

In this framework, the aim of our study was to determine the self-perceived level of competencies of primary health care physicians in Kosovo, a post-war country in the Western Balkans which is currently facing a difficult period of political and socioeconomic transition.

Methods

A cross-sectional study was conducted in Kosovo in 2013 including a representative sample of primary health care physicians.

[1] Kosovo: This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence". http://ec.europa.eu/enlargement/countries/detailed-country-information/kosovo/ (accessed: April 19, 2014).

Study population

Our study targeted a representative sample of primary health care physicians in five regions of Kosovo, namely Pristine, Gjilan, Gjakove, Prizren and Peje. According to the calculations of the sample size, a minimum of 612 physicians was required for inclusion in this survey. We decided to recruit 660 physicians (220 in Pristine and 110 in each of the other regions) in order to increase the power of the study.

Of the 660 targeted physicians, 597 participated in the survey (overall response rate: 597/660=90%). The response rate was somehow lower in Peje (87%) and Gjakove (88%), but higher in Prizren (95%). In Pristine, the capital of Kosovo, the response rate was 91%.

Of the 597 physicians included in our study, 295 (49.4%) were men and 302 (50.6%) were women. Mean age in the overall study population was 46.0±9.4 years.

The study was approved by the Ethical Board of the Ministry of Health of Kosovo. All physicians were sent an official invitation letter where the aims and procedures of the survey where explained in detail.

Data collection

An international instrument was developed with the support of the European Community Lifelong Learning Program aiming to self-assess the level of skills, abilities and competencies of primary health care physicians (4). This instrument has been already validated (cross-culturally adapted) in Albanian settings (12,13).

All physicians included in this survey were asked to self-assess their level of skills, abilities and competencies regarding the following six essential domains of quality of primary health care (4): (i) Patient care and safety (8 items); (ii) Effectiveness and efficiency (7 items); (iii) Equity and ethical practice (8 items); (iv) Methods and tools (5 items); (v) Leadership and management (4 items), and; (vi) Continuing professional development (5 items).

Responses for each item of each subscale ranged from 1 (“novice”= physicians have little or no knowledge/ability, or no previous experience of the competency described and need close supervision or instruction) to 5 (“expert”=physicians are the primary sources of knowledge and information in the medical field).

An overall summary score (including 37 items; range: 37-185) and a subscale summary score for each of the six domains were calculated for all primary health care physicians included in this study.

Demographic data (age and sex of participants), information on working experience, number of population served, working place, type of specialization and involvement in teaching/training activities were also collected.

Statistical analysis

Median values (and their respective interquartile ranges) were used to describe the distribution of age, duration of work experience and the number of population served among male and female physicians included in this study. On the other hand, frequency distributions (absolute numbers and their respective percentages) were used to describe the distribution of sex, working place, specialization, involvement in teaching and training activities of study participants.

Cronbach’s alpha was employed to assess the internal consistency of the overall scale (37 items) and each of the six subscales/domains of the measuring instrument.

Mean values (and their respective standard deviations) were used to describe the distribution of the summary score of the overall tool (37 items) and the summary scores of each of the six subscales/domains. Mann-Whitney’s U-test was used to assess sex-differences in the mean values of the overall level of competencies (37 items) and the competency levels of each subscale of the instrument.

General linear model was used to assess the association of self-assessed overall level of competencies with demographic characteristics, work experience, type of specialization and involvement in teaching/training of physicians included in this study. Initially, crude (unadjusted) mean values of the overall level of physicians' self-perceived competencies and their respective 95% confidence intervals (95%CIs) were calculated for each category of the covariates (age, dichotomized into: ≤40 years vs. >40 years; sex: men vs. women; working experience, dichotomized into: ≤10 years vs. >10 years; number of population served, dichotomized into: ≤2500 people vs. >2500 people; working place, dichotomized into: Pristina vs. other regions; specialization: general practice, family medicine, other specializations; and involvement in teaching/training activities: no vs. yes). Subsequently, multivariable-adjusted mean values and their respective 95%CIs were calculated.
SPSS (Statistical Package for Social Sciences, version 15.0), was used for all the statistical analyses.

Results

Overall, median age among study participants was 47 years (interquartile range: 40-53 years) (Table 1). Conversely, median duration of working experience in the overall sample of physicians was 13 years (interquartile range: 6-21 years). About 34% of primary health care physicians worked in Pristina, whereas 66% of them worked in the other regions of Kosovo. About 31% of participants were general practitioners, 49% were family medicine, whereas 20% had received different medical specializations (such as cardiology, paediatrics, internal medicine, gastroenterology, rheumatology, or obstetrics-gynaecology). About 29% of the physicians were involved in teaching and training activities in Family Medicine (Table 1).

Table 1. Distribution of demographic characteristics, work experience and specialization in a representative sample of primary health care physicians in Kosovo, in 2013 (N=597)

Variable	Distribution
Age (years)	47.0 (40.0-53.0)*
Sex:	
Men	295 (49.4)†
Women	302 (50.6)
Working experience (years)	13.0 (6.5-21.0)*
Number of population served	3000 (2500-4000)*
Working place:	
Prishtina	201 (33.7)†
Gjilan	98 (16.4)
Gjakova	97 (16.2)
Prizren	105 (17.6)
Peje	96 (16.1)
Specialization:	
General practice	187 (31.3)†
Family medicine	292 (48.9)
Other specializations‡	118 (19.8)
Involved in teaching:	
No	427 (71.5)†
Yes	170 (28.5)

* Median values and interquartile ranges (in parentheses).

† Numbers and column percentages (in parentheses).

‡ Cardiology, paediatrics, internal medicine, gastroenterology, or rheumatology.

The internal consistency of the overall scale (37 items) was Cronbach's alpha=0.98 (Table 2). In general, Cronbach's alpha was high for all the subscales [ranging from 0.86 (for the "leadership and management" domain) to 0.94 (for the "patient care and safety" and "methods and tools" subscales)].

Table 2. Internal consistency of each domain (subscale) of the instrument

Domain (subscale)	Cronbach's alpha
Overall scale *(37 items)*	0.98
Patient care and safety *(8 items)*	0.94
Effectiveness and efficiency *(7 items)*	0.93
Equity and ethical practice *(8 items)*	0.90
Methods and tools *(5 items)*	0.94
Leadership and management *(4 items)*	0.86
Continuing professional development *(5 items)*	0.90

In the overall sample of male and female physicians (N=597), the summary score for the 37 items of the tool was 147.7±24.3 (Table 3). The summary score of self-perceived competency level was significantly higher in men compared to women (151.2±24.3 vs. 144.1±23.8, respectively, P<0.001). As a matter of fact, the subscale scores were all significantly higher in men than in women, except the "methods and tools" domain which was not significantly different between men and women (19.6±4.0 vs. 19.0±4.0, respectively, P=0.09).

Table 3. Summary score of each domain (subscale) of the instrument by sex

Domain (subscale)	Overall (N=597)	Sex-specific		
		Men (N=295)	Women (N=302)	P†
Overall scale *(score range: 37-185)*	147.7±24.3*	151.2±24.3	144.1±23.8	<0.001
Patient care and safety *(score range: 8-40)*	31.5±5.6	32.4±5.6	30.6±5.5	<0.001
Effectiveness and efficiency *(score range: 7-35)*	27.1±4.9	27.8±4.9	26.3±4.9	<0.001
Equity and ethical practice *(score range: 8-40)*	33.7±5.3	34.5±5.2	33.0±5.4	0.001
Methods and tools *(score range: 5-25)*	19.3±4.0	19.6±4.0	19.0±4.0	0.090
Leadership and management *(score range: 4-20)*	15.8±3.2	16.2±3.3	15.4±3.2	<0.001
Continuing professional development *(score range: 5-25)*	20.2±3.4	20.8±3.4	19.7±3.4	<0.001

* Mean values ± standard deviations.

† P-values from Mann-Whitney U test.

Table 4 presents the association of self-perceived competencies with covariates. In crude/unadjusted general linear models, mean level of self-assessed competencies was significantly higher among older physicians, in men, those with >10 years of working experience, physicians serving >2500 people, specialized physicians and those involved in teaching and training activities (all P<0.001). Physicians working in the capital city had a borderline significantly higher mean level of self-perceived competencies compared with their counterparts operating in the other regions of Kosovo (P=0.052). Upon multivariable-

adjustment, findings were somehow attenuated, but remained essentially the same and highly statistically significant. Hence, mean level of self-perceived competencies was higher among older physicians (P=0.022), in men (P<0.001), those with >10 years of working experience (P<0.001), physicians serving >2500 people (P=0.007), specialized physicians (P<0.001) and those involved in teaching and training activities (P<0.001). On the other hand, in multivariable-adjusted models, physicians working in Pristina had a significantly higher mean level of self-perceived competencies than those operating in the other regions of Kosovo (150.1 vs. 145.6, respectively, P=0.008).

Table 4. Association of self-assessed competencies with demographic characteristics, work experience and specialization of primary health care physicians in Kosovo

Variable	Crude (unadjusted) models*		Multivariable-adjusted models†	
	Mean (95%CI)	P	Mean (95%CI)	P
Age:				
≤40 years	129.3 (125.9-132.6)	<0.001	145.2 (141.4-149.0)	0.022
>40 years	154.5 (152.4-156.5)		150.5 (148.2-152.7)	
Sex:				
Men	151.2 (148.5-153.9)	<0.001	150.9 (148.1-153.8)	<0.001
Women	144.1 (141.4-146.9)		144.7 (142.2-147.2)	
Working experience (years):				
≤10 years	132.5 (129.9-135.0)	<0.001	143.7 (140.7-146.8)	<0.001
>10 years	158.8 (156.6-160.9)		151.9 (148.8-155.1)	
Number of population served:				
≤2500	137.3 (134.2-140.4)	<0.001	145.5 (142.4-148.6)	0.007
>2500	153.4 (151.1-155.7)		150.2 (147.8-152.6)	
Working place:				
Prishtina	150.4 (147.0-153.7)	0.052	150.1 (147.0-153.2)	0.008
Other regions	146.3 (143.9-148.7)		145.6 (143.3-147.9)	
Specialization:				
General practice	126.9 (124.1-129.7)	reference	135.3 (131.9-138.7)	reference
Family medicine	154.9 (152.7-157.2)	<0.001	151.7 (148.8-154.6)	<0.001
Other	162.8 (159.2-166.3)	<0.001	156.5 (152.3-160.7)	<0.001
Involved in teaching:				
No	142.9 (140.7-145.1)	<0.001	144.1 (141.9-146.4)	<0.001
Yes	159.5 (156.0-163.0)		151.5 (148.3-154.8)	

* Mean values, 95% confidence intervals (95%CI) and p-values from the General Linear Model.

† General Linear Models simultaneously adjusted for all the variables presented in the table.

Discussion

Our study obtained evidence on the self-perceived level of competencies of physicians working at primary health care services in post-war Kosovo. The sample size included in this survey was big and representative of all the physicians working at primary health care services in Kosovo.

Main findings of our study include a higher level of self-perceived competencies among male physicians, older participants, those with a long working experience, physicians serving a larger population size, specialized physicians and those involved in training activities.

Overall, the international instrument employed in this survey exhibited a high internal consistency in this representative sample of physicians operating at primary health care

centres in different regions of Kosovo. In general, the internal consistency was high for each domain/subscale of the instrument.

It should be noted that each subscale/domain of the instrument employed in our survey taps a crucial component of the quality of primary health care. As reported elsewhere (4), the domains of the instrument imply reflection and self-assessment in order to improve the quality of health care provision (6). Furthermore, each domain of the instrument measures a number of specific competencies which represent individual standards (7).

Many studies reported in the international literature have linked the quality of health care services with health outcomes of the population (14,15). This is especially relevant for primary health care services which are considered as the most important level of health care in many developed countries (16), but also developing and transitional countries. Therefore, physicians and other health care professionals working at primary health care centers should be extremely concerned of users' demands, a process which is related to the need for continuous improvement of the quality of primary health care services. Furthermore, the "gate-keeping" function of primary health care services requires a substantial degree of patients' satisfaction.

Future studies should be conducted in the Western Balkans and beyond employing a similar methodology and the same standardized instrument as reported in our study conducted in Kosovo. If so, it would be interesting to compare our findings on the self-perceived level of primary health care physicians' competencies with their counterparts from the neighbouring countries in Southeast Europe and beyond. Also, determinants of self-perceived level of physicians' competencies should be explored in future research studies.

A study was conducted in Kosovo in 2013 including a representative sample of 1340 primary health care users aged ≥18 years (49% males aged 50.7±18.4 years and 51% females aged 50.4±17.4 years) in order to assess their perceptions on the level of competencies of their primary health care physicians (17). According to this report, the level of competencies of family physicians from patients' perspective was significantly lower than physicians' self-assessed level of competencies evidenced in our study. Hence, the mean value of the overall summary score for the 37-item instrument was 118.0±19.7 according to patients' perspective (17), which is considerably lower compared with our findings related to the mean value of physicians' self-assessed level of competencies (147.7±24.3) (Table 3). In the primary health care users' survey, the perceived level of physicians' competencies was higher among the younger and the low-income participants, and in patients who reported frequent health visits and those not satisfied with the quality of the medical encounter (17). On the other hand, no sex, or educational differences were evident in the survey including primary health users (17). It is appealing to determine in future studies the underlying factors of this differential competency level between health care providers (physicians) and users of services (patients).

Our study may have several limitations. Our survey included a large representative sample of primary health care physicians and the response rate was high. Nevertheless, we cannot exclude the possibility of information bias. In any case, we used a standardized instrument which was cross-culturally adapted in the Albanian settings (12,13). Furthermore, there is no reason to assume differential reporting on the level of competencies by different demographic categories of physicians, or other background variables included in our study.

In conclusion, our study provides useful evidence on the self-assessed level of competencies of primary health care physicians in post-war Kosovo. Findings from this study may help policymakers and decision-makers in Kosovo to perform necessary adjustments to the job description and terms of references pertinent to the work contracts of primary health care physicians in this transitional country. Nonetheless, future studies in Kosovo and other transitional settings should identify the main determinants of the apparent gaps in self-

perceived levels of physicians' competencies vis-à-vis the level of physicians' competencies from patients' perspective.

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