Health literacy in the Western Balkans
The example of Albania and Kosovo

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The example of Albania and Kosovo

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CHAPTER 1

General Introduction
HEALTH LITERACY – INTRODUCTION

Health literacy is relatively a new concept that emerged as an important determinant of health in the 1970s. Since its introduction it has become an area of vivid academic debate and increasing research interest.

Health literacy broadly refers to the capacities of individuals to function effectively and appropriately in the context of increasingly complex health systems. In an era of fast technological changes, which are obviously reflected in health care and public health areas as well, the health consumer is faced with numerous challenges concerning the way he/she seeks information, understands it and makes appropriate health decisions. Furthermore, with the ever expanding real-time information sharing, the population is relying more and more on the properties of the health system rather than on themselves in order to manage their health.

In general, health systems, that provide the “playground” of individual health consumers, are designed on the assumption that their users have adequate levels of health literacy. This becomes even more crucial in the context of electronic health which obviously requires individual users to be equipped with a certain level of knowledge and skills. Therefore, to effectively function in the context of health care, public health and health in general, one has to meet certain assumptions. To expand the argument further, the constitution of the World Health Organization (WHO) states that “Informed opinion and active co-operation on the part of the public are of the utmost importance in the improvement of the health of the people”. This statement clearly points out the importance of these assumed levels of knowledge and skills which are required in order to achieve and maintain health. Furthermore, the importance of such individual and social skills is highlighted in the “National Action Plan to Improve Health Literacy” of the US Department of Health and Human Services, the Healthy People 2020 initiative which includes health literacy as one of its objectives, as well as in the European Commission “Together for Health” strategy which considers health literacy as a means to achieve the core value of citizen’s empowerment, stating that “the patient is becoming an active subject rather than a mere object of healthcare”.

In this perspective, the way health information is retrieved and understood and then how an individual translates it into specific health related behaviors, is a complex process and, as consumers become more and more involved and participating in health and health care issues, health literacy emerges as a key determinant bearing the potential to highlight and explain a part of the differences noticed in health status of different distinguished population groups.

Toward this goal and, to achieve comparability across studies, a definition of the term “health literacy” is obviously needed. But what is health literacy? According to the Institute of Medicine health literacy is “a shared function of social and individual factors”. The individual factors most often refer to cultural and conceptual knowledge and listening, speaking, numeracy, writing and reading skills. On the other hand, social
factors refer to the communication and assessment skills and abilities of health professionals, media, marketplace and governmental entities to convey health information in an appropriate way to health consumers. Consequently, health literacy could be determined by the interaction of the individuals with the education system, surrounding culture and society as well as with the health system resulting finally in certain health outcomes and costs.

Apparently, health literacy is a complex concept involving a wide range of individual abilities and skills which are dependent on the way the social system is organized and the specific properties and characteristics of all fields of life in a certain country. These factors seem to interact with each other via multi-channeled ways for finally producing the health literacy level of a given individual in a given time and place. Health literacy essentially bridges knowledge to practice in terms of health and health behaviors. Therefore, because of this complexity, it is not a surprise that there is no common definition of health literacy yet.

DEFINITIONS OF HEALTH LITERACY

The earliest definition of health literacy, dating back to 1974, defines it as “health education meeting minimal standards for all school grade levels.”

In 1995, Parker et al. provided the following definition for health literacy: “being able to apply literacy skills to health-related materials such as prescriptions, appointment cards, medicine labels, and directions for home health care.”

In 1998, Nutbeam expanded the concept of health literacy well beyond that proposed initially by Simonds and Parker et al. and defined it as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. Health literacy means more than being able to read pamphlets and successfully make appointments. By improving people’s access to health information and their capacity to use it effectively, health literacy is critical to empowerment.” This definition is adopted also by the World Health Organization.

In 1999, the American Medical Associations defined health literacy as a “constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment” and stating that “patients with adequate health literacy can read, understand, and act on health care information, they understand health messages and medical instructions and other health related materials.”

In 2000, Ratzan and Parker defined health literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” Also in 2000, Nutbeam defined health literacy as “the personal, cognitive and social skills which determine the
ability of individuals to gain access to, understand, and use information to promote and maintain good health." 13

In 2003, Zarcadoolas et al. provided this definition of health literacy: “the evolving skills and competencies needed to find, comprehend, evaluate, and use health information and concepts to make educated choices, reduce health risks, and improve quality of life”. 14

In 2004, the Institute of Medicine adopted the definition of Ratzan and Parker, 13 but expanded further by stating that “health literacy is a shared function of social and individual factors”. 15

In 2005, other definitions of health literacy were suggested. Zarcadoolas et al. slightly modified their 2003 definition of health literacy and re-defined it as “the wide range of skills, and competencies that people develop to seek out, comprehend, evaluate and use health information and concepts to make informed choices, reduce health risks and increase quality of life"16 whereas Kickbusch et al. defined health literacy as “the ability to make sound health decisions in the context of everyday life – at home, in the community, at the workplace, in the health care system, the market place and the political arena. It is a critical empowerment strategy to increase people’s control over their health, their ability to seek out information and their ability to take responsibility”.17

In 2006, Kwan et al. offered the following definition for health literacy “the degree to which people are able to access, understand, appraise and communicate information to engage with the demands of different health contexts to promote and maintain health across the life-course”.18 The Australian Bureau of Statistics in 2006 defined health literacy as “the knowledge and skills required to understand and use information relating to health issues such as drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid and emergencies, and staying healthy”.19

In 2007 Paasche-Orlow and Wolf defined health literacy as “an individual’s possession of requisite skills for making health-related decisions, which means that health literacy must always be examined in the context of the specific tasks that need to be accomplished. The importance of a contextual appreciation of health literacy must be underscored”.20

In 2007, the European Union defined health literacy as “the ability to read, filter and understand health information in order to form sound judgments”, 21 followed by a number of other definitions which emerged in 2008, such as “the knowledge, skills and abilities that pertain to interactions with the healthcare system”; 22 and “a process that evolves over one’s lifetime and encompasses the attributes of capacity, comprehension, and communication. The attributes of health literacy are integrated within and preceded by the skills, strategies, and abilities embedded within the competencies needed to attain health literacy”.23

In 2009, Freedman et al. suggested this definition for “public” health literacy: “the degree to which individuals and groups can obtain, process, understand, evaluate, and act upon information needed to make public health decisions that benefit the communi-
ty”, and, in the same year, a number of other definitions were offered as well: “the degree to which individuals have the capacity to read and comprehend health-related print material, identify and interpret information presented in graphical format (charts, graphs and tables), and perform arithmetic operations in order to make appropriate health and care decision”; “the ability to understand and interpret the meaning of health information in written, spoken or digital form and how this motivates people to embrace or disregard actions relating to health”; and “the ability to derive meaning from different forms of communication by using a variety of skills to accomplish health-related objectives”.

In 2012, Sørensen et al. suggested a new “all inclusive” definition of health literacy, trying to condensate all the definitions used up to that moment: “health literacy is linked to literacy and entails people’s knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course”.

Obviously, the definition of health literacy also varies on the context where it is applied. Therefore, distinctions between “health care or medical” health literacy and “public health or population” health literacy have been proposed. Nutbeam considers health literacy as a process with increasing complexity when moving from functional health literacy, to interactive health literacy and ultimately to critical health literacy. The later one represents a higher level of autonomy and empowerment which supports effective individual, social and political action as compared to functional health literacy which implies the ability to comply with instructions given in health care settings. Critical health literacy could therefore be more inherent of the population health literacy as compared to functional or interactive health literacy which more often result in individual benefit.

Although the above list of health literacy definitions is not exhaustive, we believe it represents the milestones of the evolving process that the concept of health literacy has been through. The main general trend that can be observed when assessing all the definitions provided here is the shift from “simply transmitting information”, “individual skills” and “strictly health care settings” towards “social and economic circumstances”, “health in general” and “the interaction between the individual consumer with the surrounding environment”. This is true even for definitions which confine themselves within health care premises: these definitions have become wider in the sense that they tend to increasingly include a wider range of skills and abilities such as information-seeking, problem-solving and critical thinking. Alternatively speaking, with the passing of time, the more recent definitions of health literacy have tried to incorporate more and more dimensions explaining it alongside with the expansion of our understanding of the phenomenon. Basically, the ability to read and write (functional literacy) serves primarily as a foundation upon which a number of complementary skills essential to health literacy can be built. The evolving of health literacy definitions over time high-
lights the fact that the degree to which individuals are motivated to seek health information, understand it, appraise it and apply it appropriately is an ongoing complex process which often is determined by an array of individual, social and economic factors. This characteristic has been the underlying motivation to re-define health literacy from time to time and this is why the more recent definitions of health literacy tend to be wider as to incorporate more dimensions that might influence it.

The effort of Sørensen et al.\(^1\) could be regarded as a product of such evolving process in trying to find an “all inclusive” definition for health literacy which can naturally accommodate both the population and the individual perspectives of health literacy.\(^1\)

At the very end, we as researchers are interested in studying factors associated with attitudes, behaviors and behavior change. In this regard, health literacy might be considered as a key piece in the mosaic of human health behavior and factors determining it. As suggested by the Institute of Medicine\(^2\) knowledge does not necessarily translate into healthy behaviors, as illustrated by the example of chefs who create excellent tasty dishes but who may not have a clue about creating healthy dishes.\(^7\) Let’s again recall the widespread anecdotal saying that doctors are the ones who engage more in unhealthy behaviors (such as smoking and alcohol drinking) despite their high level of training and health knowledge. The point here is that information and knowledge only do not guarantee appropriate healthy behaviors.\(^2,29\) Obviously, human behavior, besides own personal attitudes, is very closely determined by the social context, self-efficacy and intention to change as well.\(^30\) In general, changing behaviors is a complex process and different behavioral change theories have been suggested to explain the attitudes-to-behavior change transition, either through a series of attitude changes, or consequential behavioral change.\(^30\) On the other hand attitudes, social context, self-efficacy and intention to change are all bi-directionally connected to health literacy,\(^28\) with people’s motivation to receive, process health information and change behavior making the difference between health and unhealthy behaviors.\(^29\) Because health literacy is subject to other influences outside the control of health professionals and health system and because of the “motivation and activation” necessary to influence individual behavior, then health literacy is very difficult to be appropriately measured.\(^29\) Despite these shortcomings health literacy has been identified as a central component of good health, as explored earlier in this section. As such, various tools for measuring it have been elaborated even though many of them, not to say all of them, measure only a few or several components of health literacy.

**MEASUREMENT OF HEALTH LITERACY**

All available instruments for measuring health literacy are not exhaustive as they most often measure only few dimensions of health literacy such as reading, writing, comprehension and numeracy. The reason for this is because these elements of health literacy
are more “objective” compared to other pertaining aspects of health literacy and, therefore, they are easier to be measured and interpreted. Below we describe briefly the health literacy instruments used more frequently in practice, in chronological order.

1. The Rapid Estimate of Adult Literacy in Medicine (REALM) was first described by Davis et al. in 1991. This instrument is a 66-word recognition test (there is also a 8-item shortened version) that tries to identify patients with limited reading skills and their reading level. Scores are converted to grade ranges: below 3rd grade, 4th-6th grade, 7th-8th grade and high school. It measures reading skills or prose literacy based on selection of words from materials used in clinical settings and its application requires 3-5 to minutes. The short version of REALM consists of eight words which the patient has to read aloud and it takes less than two minutes to administer. The number of correctly read words is recorded. This test measures reading skills or prose literacy only.

2. The Test of Functional Health Literacy in Adults (TOFHLA) was introduced in 1995 by Parker et al. There exist a short version of the instrument as well, named S-TOFHLA. The long version of the instrument is a 67-items test divided into 50-items for measuring reading comprehension (time limit: 12 minutes) and 17-items for measuring numeracy (time limit: 10 minutes) Numeracy items test the ability of the respondent to calculate dose intervals, quantity of drugs and dates between medical appointments whereas reading comprehension section consists of medical passages used in health care settings in which every fifth to seventh word is missing and respondent are required to choose between four alternative options in order to best complete the sentence. The score range of TOFHLA is 0-100 and subjects are then categorized into inadequate (score 0-59), marginal (score 60-74) or adequate functional health literacy (score 75-100) based on respective scores. TOFHLA measures reading skills, document literacy, numeracy skills and appraisal or critical thinking skills.

3. In 1997, another instrument for measuring health literacy, the Medical Achievement Reading Test (MART) was suggested by Hanson-Divers, with the main aim to assess patients reading abilities. The instrument tests the pronunciation of 42-medical words as well as letter reading, which are taken by the Wide Range Achievement Test (WRAT). As with REALM, scores are converted into grade-levels based on specific conversion instructions. This test measures only reading skills or prose literacy.

4. The Literacy Assessment for Diabetes (LAD) was introduced in 2001 with the aim of creating a quick, non-stigmatizing, context specific tool for assessing literacy levels of diabetic patients. This test takes up to five minutes to complete and consists of 60 word recognition test of increasing difficulty. Then, individual scores are converted to grade levels. This test also measures only reading skills or prose literacy.

5. In 2003, in the framework of the National Assessment of Adult Literacy (NAAL) survey the Health Literacy Component (HLC) was employed in order to measure adult literacy skills to read and understand health information. The HLC component
comprised of 28 tasks (4 clinical domain tasks, 14 preventive domain tasks and 10 tasks relating to system navigation abilities) which were part of the larger NAAL survey. The HLC component made it possible to calculate an independent health literacy score. The HLC component measures reading skills (prose literacy), document literacy and numeracy skills.

6. In 2004, in the framework of the National Adult Literacy Survey (NALS) survey, the Health Activities Literacy Scale (HALS) was also applied with the aim of assessing the health literacy of US adults and its associations with socio-demographic and economic factors. The HALS component comprised of 191 tasks in the framework of NALS survey which included other task not-related to health. The 191 tasks of HALS component were divided into 5 main activity domains and namely health promotion (60 tasks), health protection (65 tasks), disease prevention (18 tasks), care and maintenance (16 tasks) and system navigation (32 tasks). The scoring system used a newly developed scale in order to distinguish between levels of health literacy which ranged from the lowest (<1) to the highest level (5) of health literacy. The HALS component measures reading skills or prose literacy, document literacy and numeracy skills.

7. The Newest Vital Sign (NVS) was introduced in 2005 by Weiss et al. for quickly assessing limited health literacy. This test features six questions about a nutrition label (most often an ice-cream information label) and usually takes less than three minutes to administer. The number of correct answers out a total of six is recorded. Subject answering correctly to fewer than four questions are regarded as having limited literacy. The NVS instrument measures reading skills or prose literacy, document literacy and numeracy skills.

8. In 2006 the Short-Assessment of Health Literacy for Spanish-speaking Adults (SAHLSA) was introduced with the aim of developing a screening test to detect low health literacy among Spanish adults in health or community settings. This test comprises of 50-words recognition and comprehension text (word associations) which requires up to six minutes administering. The answer is considered correct if the word is pronounced duly and the correct association is made for a maximum score of 50. This test measures reading skills (prose literacy) only.

9. In 2006, the Swiss Health Literacy Survey was conducted using a newly developed instrument (HLS-CH) which tried to capture as many dimensions of health literacy as possible and aimed to measure citizen-and patient centred competencies for health beyond basic health-related reading. The instrument contained 127 questions covering 30 health competencies; each competence was measured by 1-4 indicators corresponding to 1-19 questions and it took approximately 30 minutes to administer via computer-assisted telephone interviews among 1255 randomly selected participants aged 15 years old or older. One of the objectives of the survey was to check whether indeed health literacy is multidimensional and if this was the case what are the key dimensions of health literacy. The results supported health literacy as a
multi-dimensional concept and suggested that information and decision-making, cognitive and interpersonal skills, information and communication technology skills and health activation could be key dimensions of health literacy and that a comprehensive approach to health literacy is likely to include both medical and public health approaches.41,42

10. In 2011, the European Health Literacy Survey was conducted in 8 European countries using a newly developed health literacy instrument, namely the HLS-EU-Q43 based on a broad definition of health literacy.4 The HLS-EU-Q instrument consisted of 47 items exploring four dimension of health literacy (access, understanding, appraisal and application of health information) in three different domains: health care, disease prevention and health promotion.43 Each item consisted of a 4-point scale ranging from 1-very easy to 4-very difficult and indicating the self-perceived difficulty of performing selected tasks.43 Upon standardization of results, health literacy score ranges from 0 (least health literate) to 50 (maximum health literate).43

11. In 2013 the Health Literacy Questionnaire (HLQ) was introduced also based on a broad definition of health literacy.44 The HLQ consisted of 44 items covering nine distinct scales (intrinsic and extrinsic dimensions of health literacy).44 Response options for each domain were dependent on the content and nature of the respective domain ranging from four-to-five ordinal options.44

The above list of health literacy instruments highlights the fact that there is much variability in health literacy measures and settings where they are applied which obviously makes any comparison of results generated by different health literacy instruments difficult.

LIMITATIONS AND METHODOLOGICAL CONCERNS OF HEALTH LITERACY INSTRUMENTS

Some of the limitations of health literacy instruments are rooted in the very concepts they are built upon. As we have explored earlier in this document, no health literacy definition is exhaustive and therefore the ability of instruments measuring health literacy will be limited by they own constructs.

In general, narrow definitions of health literacy, otherwise known as “clinical or medical health literacy” are usually concerned in assessing individual skills and lay the responsibility of health literacy and the ability to properly function in health care settings on the individual.29,32,33 This is a limitation per se because, as we have explored, the health literacy level of an individual is a result of complex processes. Therefore, instruments based on such definitions do only offer a limited view of the processes explaining the health status of individuals29 because they often overlook other factors which might also play important roles such as health system, social, political and economic forces.24,29,45 It is suggested that “medical health literacy” often functions a-
posteriori, meaning that it tries to improve the situation only after the illness has set and thus not giving enough focus to primary prevention,\textsuperscript{24} whereas focusing more on health literacy outside clinical settings would enhance preventive health.\textsuperscript{29}

All instruments listed earlier measure reading skills. In addition TOFHLA, S-TOFHLA, HLC, HALS and NVS measure numeracy and document literacy (except S-TOFHLA) but only TOFHLA measures critical thinking.\textsuperscript{18} Instruments based on broad definitions of health literacy such as HLS-CH, HLS-EU-Q and HLQ measure critical thinking and other domains of health literacy, which are important as they refer to the ability to critically analyze information and increasingly participate in social or political action.\textsuperscript{29} In general, all health literacy instruments listed here do not measure verbal communication skills.\textsuperscript{2,18,28,29} However, verbal communication skills are essential for public health, health care and health literacy and therefore the inability of current instruments to measure it represent a serious shortcoming of currently available health literacy instruments.\textsuperscript{2}

Furthermore, TOFHLA and REALM, the most widely used instruments to measure health literacy, do not address visual literacy and do not consider ageing, gender, language, cultural and factors related to settings other than health care environment.\textsuperscript{2,28,29} However, to our opinion, this holds true for other health literacy instruments as well as they too do not consider ageing, gender and other factors listed above. Furthermore, there are no health literacy instruments which can distinguish between functional, interactive and critical health literacy (the latter two require the assessment of oral literacy and social skills).\textsuperscript{28}

Methodological limitations include the fact that most health literacy instrument have been developed and used in the U.S. context. Therefore, not necessarily do they function or behave appropriately in other social and cultural contexts as such.\textsuperscript{18} In addition, instruments that measure functional health literacy (REALM, TOFHLA) are the most used among health literacy tools\textsuperscript{28,46} because they have been developed earlier and functional health literacy is easier to be measured. Therefore, all health literacy instruments developed later have been validated against these frequently used but earlier developed tools. As it is clear now, REALM and TOFHLA are not perfect and therefore, all validation studies regarding them as “gold standard” will suffer from the same biases.\textsuperscript{18} There is no gold standard for health literacy.\textsuperscript{47} Furthermore, each health literacy instrument suffers, in different degrees, some form of low construct validity as health literacy definitions upon which they are built often include only few dimensions pertaining to the concept of health literacy.\textsuperscript{2,18} Obviously, broader definitions of health literacy have higher construct validity compared to narrower ones. On the other hand, often, the weight of different dimensions, comprising health literacy, is not measured or unnecessary weight is given to irrelevant factors and therefore these constitute other limitations of current methodologies employed to measure health literacy.\textsuperscript{18} Other biases might be introduced artificially such as in the case when texts of significant reading difficulty levels are given to person whose readability is limited.\textsuperscript{18}
A limitation of instruments which explore broad dimensions of health literacy relates to their administration procedures. Some of such instruments comprise of hundreds of items such as with the case of HALS instrument – 191 items, and HLS-CH instrument – 127 items. The HALS instrument might take up to one hour to complete.

A further limitation of health literacy instruments relates to the ways they code health literacy scores. Some instruments convert health literacy scores into levels of health literacy (for example TOFHLA, HALS, HLS-EU-Q, NVS, etc.) whereas other instruments convert it to grade levels (REALM, MART, LAD, etc.). The cut-off points for setting health literacy levels usually do not relate to other health literacy instruments but rather on statistical parameters of the respective instrument. The grade levels also vary greatly between countries and defining grade-level scores is a very problematic process. This variability combined with the fact that health literacy instruments differ greatly in dimensions of health literacy they address makes the “fair” comparison of health literacy measurements from different instruments difficult.

Despite numerous limitations, health literacy instruments in use have nevertheless contributed to provide useful information about vulnerable population groups. On the other hand, the limitations described above serve to make us aware that health literacy instruments do not offer perfect comparability across studies but they offer at least some comparability, which is good news for the time being.

HEALTH LITERACY AND HEALTH OUTCOMES

Earlier in this document we mentioned that health literacy bridges knowledge to practice. The connotation of bridge implies something that connects two (or more) sides or aspects of a phenomenon or something that is “in between”. It also implies that it “crosses over” the structures which divide/separate or are found in between the sides being connected by the bridge. We find the parallelism of health literacy as a bridge connecting knowledge to practice as very relevant: we, as scientific community, have some information about the bridge itself (by means of health literacy definitions and instruments) and there is information also about the two sides of the bridge: the factors (one side) and outcomes (the other side) which the bridge connects. Meanwhile, in between there is the flow of the array of other social, cultural and contextual factors which affects all bridging structures. This is an interesting element of the bridge model: the array of factors flowing under the bridge represents the factors which are not very well understood yet but that affect health literacy and the two sides of the bridge in a myriad of ways. The “flow under the bridge” might represent all the actual insecurities about the definitions of health literacy and what shall be included in it.

The bridge model fits perfectly with the two different approaches of health literacy as proposed by Nutbeam: health literacy as a risk factor and as an asset to be built upon. As a risk factor, limited or poor health literacy could lead to a series of adverse
health effects and beyond, as we shall explore in the following paragraphs. As an asset to be built, health literacy will depend on “the factors – the one side of the bridge” and also the array of other factors flowing under the bridge. The bridge model, to our opinion, fits well both to the individual and to the population or public health level.

Health literacy has been linked to a number of socio-demographic and economic factors regardless of the health literacy instrument used. Age and education seem to be consistently associated with health literacy. Race/ethnicity has also been associated with health literacy. The association with gender is not straightforward though. Furthermore, health literacy is associated with employment, income, socioeconomic status, social support and cultural context, as well as with a wide range of competencies (reading, hearing, vision, comprehension, numeracy etc.), physical abilities, mental, social skills and actions. Homeless people and military recruits often exhibit low levels of health literacy as well.

On the other hand, health literacy has emerged as a risk factor for an array of health outcomes, even though causal relationships are hard to be established. Individuals with limited health literacy are less knowledgeable about their health conditions and treatment, have difficulties in understanding preventive services and report worse health status and higher hospitalization rates (and health care costs) compared to subjects with higher health literacy levels.

Health literacy research has taken place mainly in USA and Canada but lately the topic has attracted a lot of attention in Europe as well. In South-Eastern European (SEE) countries the topic is very little explored with exception of Serbia, where health literacy papers were being published starting from 2009, whereas regarding Albania and Kosovo there were no health literacy reports until 2013.

Information on health literacy, health literacy instruments, socio-demographic and socioeconomic factors as well as health outcomes associated with health literacy in Albania and Kosovo is scarce. Both countries are in a transitional phase of their development characterized by overwhelming reforms which might negatively affect health. Health literacy is an important (modifiable) determinant of health. In this context, it is interesting to conduct a study for assessing the level of health literacy and its associations with basic demographic and socioeconomic factors and health status among the adult population of transitional Albania and Kosovo.

AIMS OF THIS THESIS

In this thesis, we present the first scientific study conducted to explore health literacy in the adult population of two transitional Albanian-speaking countries: Albania and Kosovo. The aims of this study were as follows:

- To validate the HLS-EU-Q and TOFHLA, two international instruments measuring health literacy, in the adult population of Albania and Kosovo.
• To assess the associations of health literacy with socioeconomic factors, self-perceived health and self-reported chronic morbidity in a large nationwide representative sample of older men and women (individuals aged ≥65 years) in the Republic of Kosovo.

• To assess the socio-demographic and socioeconomic factors associated with functional health literacy in a representative sample of primary health care users (individuals aged ≥18 years) in the Republic of Kosovo.

• To assess the associations of health literacy with socio-economic and socio-demographic factors in a representative population-based sample of individuals aged ≥18 years in Albania.

We hypothesized that health literacy is associated with background demographic and socioeconomic characteristics of the adult population under study in Albania and Kosovo. Furthermore, we hypothesized that health literacy is positively associated with self-reported health status, but inversely related to self-reported chronic morbidity of the target study populations. In addition, we hypothesized that health literacy is negatively related to measures of obesity (such as e.g. body mass index) of the respondents.

STUDY DESIGN

We conducted three separate surveys in addition to one validation exercise in line with the aims of this research work:

• A nationwide survey (cross-sectional study) was conducted in Kosovo in January-March 2011. This study employed an age-, sex-, and residence (urban vs. rural)-stratified sample of 1753 individuals aged 65 years and over (886 men, mean age 73±1 years; 867 women, mean age 74±7 years; overall response rate: 77.4 %). Further details about the study design, study population and sampling (including sample size calculation) and data collection of this survey are provided in Chapter 3.

• Another survey (cross-sectional study) was conducted in November 2012-February 2013 in Kosovo including a representative sample of 1035 primary health care users aged ≥18 years old (414 males, mean age: 44.7±17.2 years; 621 females, mean age: 44.0±16.8 years; overall response rate: 86.3%). Details of this survey, study population and sampling and data collection are described in detail in Chapter 5.

• A large-scale validation study of HLS-EU-Q and TOFHLA health literacy instruments was conducted in September-December 2013 in Tirana, Albania, including a population-representative sample of adults aged 18 year and older (92 men, mean age: 47.6±18.3 years; 147 females, mean age: 40.0±16.7 years; overall response rate: 87.2%). Details of this survey, study population and sampling and data collection are provided in Chapter 6.

• A third survey (cross-sectional study) was conducted in September 2012-February 2014 in Tirana, Albania including a representative sample of 1154 individuals aged
18 years or older (501 men, mean age: 46.0±16.7 years; 653 females, mean age: 45.2±16.1 years; overall response rate: 88.6%). Details of this survey, study population and sampling and data collection are provided in Chapter 7.

OUTLINE OF THIS THESIS

Following this first chapter referred to as “General Introduction”, Chapter 2 gives a broad overview of the current public health problems and challenges Albania and Kosovo are facing in the process of continuous transition towards the consolidation of democracy. Chapter 3 describes the distribution of health literacy among older people in Kosovo with regard to their socio-demographic and socioeconomic characteristics. Chapter 4 describes the association of health literacy with self-perceived health status and self-reported chronic conditions of older people in Kosovo. Chapter 5 describes the prevalence of limited functional health literacy and the factors associated with it in users of primary health care system in Kosovo. Chapter 6 describes the process of validation and cross-cultural adaptation of two major health literacy instruments (HLS-EU-Q and TOFHLA) in a representative population-based sample of adults in Tirana, Albania. In Chapter 7, we describe the distribution of health literacy scores in general and with particular attention to health care health literacy, disease prevention health literacy and health promotion health literacy according to socioeconomic characteristics of the adult population in Tirana. Finally, in Chapter 8 referred to as “General Discussion”, we discuss the general findings of this thesis, with a particular emphasis on strengths and limitations, which should foster and guide future research, and also provide recommendations for decision-makers and policymakers of the health sector in Albania and Kosovo.

Overall, this is the first study reporting about health literacy from both clinical and population or public health perspectives, health literacy prevalence and factors associated with it in the adult population of Albanian speaking countries (Albania and Kosovo) of the Western Balkans.
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52. Health Literacy in Canada: initial results from the International Adult Literacy and Skills Survey 2007 (Ottawa: 2007). page(20).
CHAPTER 2

Socioeconomic conditions and health profile in Albania and Kosovo – general overview
INTRODUCTION

Albania and Kosovo are two small countries in South East Europe which share some common characteristics besides history: they are neighboring countries, the official language is Albanian and both countries have experienced decades under communist regime. In addition, Albania and Kosovo are characterized by a relatively young population compared to other parts of Europe, high emigration rates (mainly of active labor force) and a difficult period of socioeconomic reforms in the context of consolidating their still fragile democratic systems. As a consequence, both countries are considered to be in a transitional phase, even though the communist regime in Albania ended more than two decades ago.

This transitional state, marked generally by political unrest and shaky economic indicators, has had its toll on the economic and health indicators of both countries. The result is that both Albania and Kosovo are the poorest countries in Europe. On the other hand, Albania and Kosovo have aspirations to join the European Union and have taken important initiatives to this goal. This implies that certain reforms and objectives are to be met in order to achieve the EU expectations and standards in key sectors. In this context, it is important to analyze the current public health system in Albania and Kosovo in order to provide a general overview and understand the social and economic factors which may determine the level of health literacy of these transitional populations.

GENERAL PROFILE

Albania and Kosovo share a common border and are neighbors to Greece, Montenegro, Former Yugoslav Republic of Macedonia (FYROM) and Serbia (Figure 1).

Albania was declared independent in 1912. In 1946 the communist regime was installed ruling the country for about half a century. In early '90s the wind of political changes started to blow resulting in the installment of democratic system in 1992. Since the official induction of democracy, Albania has experienced major political and social changes breached by distinct social crises such as those during 1991-1992 and 1997 (the collapse of pyramid schemes resulting in civic unrest) and Kosovo crisis in 1999. Although a still in transition country even after more than two decades of market-oriented economy and political pluralism, Albania may be considered to be richer, more democratic, and safer than before.
Despite this, the transition has presented enormous challenges and although the economy is oriented toward a free-market system many questions related to privatization, property ownership claims and the appropriate regulation of business still remain unaddressed and represent significant burdens which require much more efforts to be resolved. These issues are draining out valuable economic and human resources that could be used more efficiently towards significant improvements of the quality of life of Albanian citizens. The country now is undergoing profound economic and structural reforms. The political class and the Albanian people in general have shown a good level of unity on the basic issues of democracy, market economy, and Euro-Atlantic integration.⁴

After liberation from German occupants in October 1944, Kosovo became part of the Socialist Federal Republic of Yugoslavia and in 1974 it was granted the self-governance status.⁵ In 1989 this status was unilaterally removed, an action which was followed by the declaration of independence in 1990 and a conflict with Serbia which lasted until 1999 when Kosovo was put under United Nations administration.⁵ This period was characterized by worsening of almost all health indicators for Kosovo citizens.⁶,⁷ Kosovo became the newest state of Europe proclaiming its definitive independence in 2008 after almost 10 years under United Nations’ administration.⁸ The last 15 years have been characterized by vast reforms and challenges, interventions which have obviously affected the health care and health care financing system as well.⁶,⁹,¹⁰

The vast majority of Albanians in Albania and Kosovo are in favor of the EU integration.¹¹
DEMOGRAPHIC AND SOCIOECONOMIC INDICATORS

The population of Albania and Kosovo is relatively young with an average age of 35 years and 27 years, respectively (Table 1 and 2). However, both countries are experiencing the population aging. In Albania, the share of individuals aged 65 years or older has increased from 8% in 2001 to 11% in 2011,12 and in Kosovo from 4.5% in 1981 to 6.7% in 2011.13 The ageing of the population could be explained by the decreasing levels of fertility rates, higher life expectancy and emigration of active labor force.14,15

Yet, despite the higher proportion of working-age labor force and the relatively lower proportion of people aged 65 years or older in Albania16 and Kosovo compared to other developed European countries, the two remain the poorest countries of Europe. According to a 2014 World Bank report, the percentage of population living with less than $1.25 and $2 a day in 2008 in Albania was <2% and 4.3%, respectively, showing however an improvement compared to 2005 data.17 Both figures were <2% for Macedonia, Montenegro and Serbia.17 In Kosovo, 34% and 12% of the population lived below an absolute and extreme poverty line of €1.55 and €1.02 per day, respectively, in 2009.18

The illiteracy rate in 2011 among individuals aged 10 years old or older in Albania and Kosovo was 2.8%12 and 3.85%,13 respectively. The mean years of schooling for Albania (2010)19 and Kosovo (2011)20 were 10.4 and 11.2, respectively. Despite mean figures of education being almost similar between Albania and Kosovo, a recent survey among older people in Kosovo noticed a remarkably low education attainment among older people aged 65 years or older and especially among older women 48% of which had no formal education compared to 17% of men reporting the same.21

During 2008-2012 the unemployment rates among the total active labor force in Albania and Kosovo (14% and 31%, respectively) were comparable to figures reported by their neighboring countries with Albania’s figure being the lowest one.37

The average annual percent growth of gross domestic product (GDP) for the period 2000-2012 was around 5% for Albania and Kosovo and varying between 3-4 percent for Macedonia, Montenegro and Serbia.17 However, this relatively satisfactory growth rate of GDP is not translated appropriately into quality of democracy, market economy and political management as measured by the Bertelsmann Stiftung’s Transformation Index (BTI).22 The BTI index and the three sub-indexes range from 1 (lowest, implying worse situation) to 10 (highest, implying best situation).22 Figure 2 displays the BTI index and its sub-components for Albania, Kosovo, Macedonia, Montenegro and Serbia. It can be noticed that in 2014 Albania and Kosovo score both lower for all the indexes compared to their three neighbors. In Albania the major problem identified was the misuse of legislation and institutions by the ruling elite for political or individual gain.23 In Kosovo the situation was more or less the same and characterized by political turmoil and difficult negotiations with Serbia with political interests often dominating over national
values, nepotism and a vague civil society that in most cases refrains from criticizing the government.

The major consequence of such situation in Albania in Kosovo is that resources are being misused marking significant drawbacks in certain indicators such as corruption perceptions,\textsuperscript{11} not appropriate improvements on some other indicators and lack of meeting expectations of the population regarding the improvement of the quality of life for the citizens of these countries. Obviously, such barriers have had their toll on health system and health indicators as well.

Other indicators are also used in order to compare countries based on several dimensions. The United Nations Development Program (UNDP) uses the following indicators: the Human Development Index (HDI), which takes into account life expectancy at birth, mean years of educational attainment and gross national income per capita;\textsuperscript{19} Inequality-adjusted HDI (IHDI) which implies the HDI value adjusted for inequalities in three basic dimensions of HDI;\textsuperscript{19} Gender Inequality Index (GII) which reflects the inequality in achievements between women and men in three dimensions: reproductive health, empowerment and labor market participation – the values of GII range from zero (0\% inequality) to 1 (100\% inequality between women and men);\textsuperscript{19} and, Multidimensional Poverty Index (MPI) which is the percentage of the population that is multidimensionally poor adjusted by the intensity of deprivations regarding education, health and living standards (or otherwise the number of people suffering deprivations in 33.33\% of weighted indicators).\textsuperscript{19}
The HDI value for Albania was 0.749 in 2012\cite{19} and for Kosovo was 0.713 in 2011\cite{20} and 0.714 during 2012-2014.\cite{25} Kosovo has the lowest HDI among its neighbors.\cite{20} The 2012 values of HDI, IHDI and GII indicators for Albania, Macedonia, Montenegro and Serbia are presented in Figure 3. It can be noticed that, after the HDI value is discounted for inequality, the HDI falls more for Albania and Macedonia, due to higher inequalities in the distribution of selected dimensions comprising the indicator.\cite{19} Regarding the GII indicator Albania shows a more pronounced gender inequality compared to Macedonia whereas for the other countries no data were available.\cite{19}

Figure 4 displays the data for the MPI index for Albania, Macedonia, Montenegro and Serbia in 2012.\cite{19} In Albania, Macedonia and Montenegro the percentage of population living in multidimensional poverty varied between 1.4 to 1.9% but in Albania a higher percentage of population (7.4%) was vulnerable to multiple deprivations (Figure 4). However, the intensity of deprivation (the average percentage of deprivation experienced by people living in multidimensional poverty) was lowest in Albania (Figure 4). Figure 5 displays the data about the weight or contribution of selected deprivations to overall poverty in percentage. In Albania almost half of overall poverty is attributed to health deprivation, a situation similar to Montenegro and Serbia (Figure 5).

HEALTH PROFILE

Tables 1 and 2 provide detailed information about some major health indicators in Albania and Kosovo. In general, health indicators are more favorable for Albania than Kosovo.

Life expectancy at birth in Albania and Kosovo has improved continuously from 1981 (73 years vs. 66 years, respectively) to 2012 (77.1 years vs. 70 years in 2011) (Table 1). Compared to their neighbors, Albania has the highest life expectancy at birth and Kosovo has the lowest figures. Both Albania and Kosovo exhibit much lower figures of life expectancy at birth compared to EU member states.

Total fertility rate is decreasing rapidly in both countries. In Albania, the total fertility rate was 1.6 in 2008-2009 showing a steady decline from the figure 3.6 reported in 1980. The same trend is observed in Kosovo: the total fertility rate declined from 2.98 in 2003 to 2.03 in 2009.

Infant mortality rate in Kosovo is more than double of that reported in Albania (17.1 per 1000 live births vs. 8.7 per 1000 live births, respectively – Table 1 and 2), according to official national sources of information. However, different figures of this indicator are reported by different sources. For example, the World Health Organization reports that the infant mortality rate in Albania in 2011 was 13 per 1000 live births. Also, Kosovo is doing worse than Albania with regard to maternal mortality rate (7.2 deaths vs. 5.8 deaths per 100000 births, respectively, in 2011 – Tables 1 and 2). The CVD and cancer mortality rates in Albania are higher than in Kosovo (Tables 1 and 2), probably reflecting the higher average age of the Albanian population. Infectious diseases mortality rates are very low in both countries but external causes of death are accountable for 22.3 deaths per 100000 inhabitants in Albania according to the Albanian Institute of Statistics (INSTAT) whereas in Kosovo the corresponding figure was 7.7 deaths (Table 2). Therefore, the major causes of death in Albania and Kosovo are the cardio-vascular diseases followed by neoplasms which are indicators of the demographic and epidemiologic transitions occurring in these countries.

Transitional countries of South East Europe are more similar to developed countries in terms of mortality and morbidity indicators. For example, the proportion of population under national or international poverty lines is much lower compared to least developed countries, the rate of undernourishment is relatively low, and education rates are considerably higher compared to Sub-Saharan Africa, Southern and Eastern Asia and other developing regions. Infant and maternal mortality rates are definitely lower compared to developing countries and morbidity and mortality patterns resemble those in developed countries.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year</th>
<th>Estimate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age of the population</td>
<td>2011</td>
<td>35.3 years</td>
<td>Albania Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Population aged ≥65 years</td>
<td>2011</td>
<td>11.3%</td>
<td>Albania Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Percentage of urban population</td>
<td>2011</td>
<td>53.5%</td>
<td>Albania Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Human Development Index</td>
<td>2012</td>
<td>0.749</td>
<td>UNDP Human Development Report 2013.</td>
</tr>
<tr>
<td>Percentage of extremely poor</td>
<td>2008</td>
<td>1.2%</td>
<td>World Bank, 2014.</td>
</tr>
<tr>
<td>Illiteracy rate (population aged ≥10 years)</td>
<td>2011</td>
<td>2.8%</td>
<td>Albania Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>2011</td>
<td>8.7</td>
<td>Ministry of Health, Albania, 2012.</td>
</tr>
<tr>
<td>Maternal mortality rate (per 100,000 live births)</td>
<td>2011</td>
<td>5.8</td>
<td>Ministry of Health, Albania, 2012.</td>
</tr>
<tr>
<td>CVD mortality rate (per 100,000 population)</td>
<td>2010</td>
<td>208.7</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>Cancer mortality rate (per 100,000 population)</td>
<td>2010</td>
<td>63.5</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>Infectious diseases mortality rate (per 100,000 population)</td>
<td>2010</td>
<td>1.00</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>External causes of death (per 100,000 population)</td>
<td>2010</td>
<td>22.3</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>Proportional mortality from CVD</td>
<td>2010</td>
<td>55.0%</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>Proportional mortality from infectious diseases</td>
<td>2010</td>
<td>5.87%</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>No. physicians per 100,000 population</td>
<td>2009</td>
<td>138</td>
<td>Albania Demographic and Health Survey 2009.</td>
</tr>
<tr>
<td>No. nurses per 100,000 population</td>
<td>2009</td>
<td>405</td>
<td>Albania Demographic and Health Survey 2009.</td>
</tr>
<tr>
<td>No. health visits per person per year</td>
<td>2011</td>
<td>2.5</td>
<td>Institute of Statistics, Albania, 2014.</td>
</tr>
<tr>
<td>Public spending on health (in % of total 2011 government expenditure)</td>
<td></td>
<td>5.04</td>
<td>Ministry of Health, Albania, 2012.</td>
</tr>
<tr>
<td>Percentage of smokers in the population ≥18 years</td>
<td>2007</td>
<td>34.9%</td>
<td>GATS Survey, Albania, 2007.</td>
</tr>
<tr>
<td>Alcohol consumption during last month 2011 among 15-16 years old students</td>
<td>2011</td>
<td>32.0%</td>
<td>ESPAD, Albania, 2011.</td>
</tr>
</tbody>
</table>
Table 2. Selected socioeconomic and health indicators in Kosovo

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year</th>
<th>Estimate</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy at birth</td>
<td>2011</td>
<td>70.0 years</td>
<td>Kosovo Human Development Report 2012.</td>
</tr>
<tr>
<td>Average age of the population</td>
<td>2012</td>
<td>27.1 years</td>
<td>CIA, World Fact-book.</td>
</tr>
<tr>
<td>Population aged ≥65 years</td>
<td>2011</td>
<td>6.7%</td>
<td>Kosovo Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Percentage of urban population</td>
<td>2011</td>
<td>38.0%</td>
<td>Kosovo Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Human Development Index</td>
<td>2011</td>
<td>0.713</td>
<td>Kosovo Human Development Report 2012.</td>
</tr>
<tr>
<td>Percentage of poor</td>
<td>2009</td>
<td>34.0%</td>
<td>World Bank, 2011.</td>
</tr>
<tr>
<td>Percentage of extremely poor</td>
<td>2009</td>
<td>12.0%</td>
<td>World Bank, 2011.</td>
</tr>
<tr>
<td>Illiteracy rate (population aged ≥10 years)</td>
<td>2011</td>
<td>3.85%</td>
<td>Kosovo Population and Housing Census 2011.</td>
</tr>
<tr>
<td>Maternal mortality rate (per 100,000 live births)</td>
<td>2011</td>
<td>7.2</td>
<td>Ministry of Health, Kosovo, 2012.</td>
</tr>
<tr>
<td>CVD mortality rate (per 100,000 population)</td>
<td>2011</td>
<td>157.0</td>
<td>Agency of Statistics, Kosovo, 2012.</td>
</tr>
<tr>
<td>Cancer mortality rate (per 100,000 population)</td>
<td>2011</td>
<td>34.2</td>
<td>Agency of Statistics, Kosovo, 2012.</td>
</tr>
<tr>
<td>Infectious diseases mortality rate (per 100,000 population)</td>
<td>2011</td>
<td>1.36</td>
<td>Agency of Statistics, Kosovo, 2012.</td>
</tr>
<tr>
<td>External causes of death (per 100,000 population)</td>
<td>2011</td>
<td>7.7</td>
<td>Agency of Statistics, Kosovo, 2012.</td>
</tr>
<tr>
<td>No. physicians per 100,000 population</td>
<td>2011</td>
<td>146</td>
<td>Institute of Public Health, Kosovo, 2011.</td>
</tr>
<tr>
<td>No. nurses per 100,000 population</td>
<td>2011</td>
<td>412</td>
<td>Institute of Public Health, Kosovo, 2011.</td>
</tr>
<tr>
<td>No. health visits per person per year</td>
<td>2010</td>
<td>2.8</td>
<td>World Bank, 2010.</td>
</tr>
<tr>
<td>Public spending on health (in % of total 2009 government expenditure)</td>
<td>7.6</td>
<td>Ministry of Health, Kosovo, 2010.</td>
<td></td>
</tr>
<tr>
<td>Percentage of smokers in the population 15 – 64 years</td>
<td>2011</td>
<td>28.4 %</td>
<td>NIPH Survey, Kosovo, 2011.</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>2011</td>
<td>25.0%</td>
<td>ESPAD, Kosovo, 2011.</td>
</tr>
</tbody>
</table>

LIFESTYLE FACTORS

In Albania and Kosovo there are clear signs of the “westernization” of the lifestyle as evidenced by the patterns of morbidity and mortality discussed in the previous section. Obviously these patterns are affected by the change in the risk factors evidenced through the years in these countries. Numerous studies support this conclusion. The increase in the obesity rates in Albania are noticed since 2002 when the first paper addressing lifestyle changes occurring in the country after the overthrown of communism was published. The increase of diabetes prevalence in Albania is documented fairly well. It is now common knowledge that diabetes is closely linked to obesity and the prevalence of obesity seems to have rapidly increased in Albania during the last quarter of the century among adults and children as well. For example, in 2001 it was estimated that the prevalence of obesity among men and women aged 25 years or older was 22% and 31%, respectively, figures which at that time were considered to be higher than those reported for Spain and Italy and thus yielding special concerns. The authors concluded that the considerable increase in body weight patterns could be due to the urbanization and modernization of lifestyle in Albania implying important changes in diet, physical activity and smoking patterns. In 2007-2009 the prevalence of obesity increased further with 24% of men and 36% of women aged 25-65 years old being obese.

The westernization of the lifestyle in Albania means that the other risk factors of non-communicable diseases are on the rise as well, as evidenced by several studies. A study reported that in Albania one in two adults aged 25 years or older were sedentary during their leisure time. Another survey highlighted the association between low physical activity and acute coronary syndrome in Albania. Significant increases in the consumption of tobacco and alcohol have been reported as well. A study among 4000 individuals aged 18 years or older in Albania in 2007 concluded that the overall prevalence of regular smoking was 34.9% (58.8% in men and 11.5% in women), marking a considerable increase in the last 17 years among both sexes and a doubling of smoking prevalence among women. The Albania Demographic and Health Survey (ADHS) in 2008-2009 reported that the prevalence of smoking among men and women aged 15-49 years old was 42.5% and 4.2%, respectively. Among 15-16 years old school boys and girls the prevalence of life time smoking was 55% and 29%, respectively, in 2011. There are indications that alcohol consumption in Albania has increased over time. According to ADHS the prevalence of last year alcohol consumption was 62.8% and 30.3% among men and women, respectively. Another study suggested that the Albanian adult population apparently does not adhere to the Mediterranean pattern of moderate alcohol intake with meals, and higher proportions of Albanian men have high weekly intakes of alcohol compared to other ex-communist European countries. More recent figures of alcohol use among adolescents suggested that 63% and 44% of...
school boys and girls aged 15-16 years have consumed at least one alcoholic beverage during the last year.52

Another major risk factor for a number of disadvantageous health outcomes is the elevated blood pressure. A study in 2001 reported that the age-standardized prevalence of hypertension was 30.2% in men and 22.7% in women aged 25 years or older, and the authors were surprised of such elevated figures for a society that only recently had abandoned the traditional lifestyles.54 In 2008/2009 the prevalence of hypertension was 27.3% in men and 20.0% of women aged 15-49 years old.56 The lower prevalence in the later, more recent study is attributable to the omission of people aged 50 years or older, among which the prevalence of hypertension is commonly higher.54

There are reports that road traffic accidents are on the rise in Albania as well, a phenomenon which closely accompanies the overall rise in the number of vehicles available in the country since 1990.40 A typical feature of the increased automation of the Albanian population is the high rate of mortality and the particularly high fatality rate from road traffic accidents compared to other European countries primarily due to the poor road infrastructure and irresponsible driving.40

In Kosovo the information about the epidemiologic transition and the transition of risk factors is scarcer as compared to Albania. However, Kosovo is experiencing such changes as well.55 In Kosovo the average age of the population is increasing followed by an increase in the rates of non-communicable diseases.48,55 A recent survey among individuals aged 65 or older in Kosovo suggested that the rates of cancer, cardiovascular disease and diabetes have increased.48 As regards the prevalence of alcohol and tobacco consumption, the rates are lower compared to Albania.48 In the context that Kosovo is considered to be the poorest country of Europe, then the prevalence of unhealthy diet characterized by low frequency of fruit and vegetables intake is believed to be lower than in Albania.48 These unfavorable conditions, coupled with difficult socioeconomic and psychological conditions (common for transitional societies) and the increasing of the prevalence of non-communicable diseases might affect harder certain disadvantaged population groups as suggested by recent studies.47,48

The detailed information provided above provides clear evidence of the epidemiologic transition occurring in the transitional Albania and Kosovo. This context could undoubtedly affect the level of health literacy in these communities and determine the factors associated with it in both countries under study.

HEALTH CARE SYSTEM, REFORMS AND FINANCING

Prior to 1995 the Albanian health system was organized according to the Semashko style, with Ministry of Health (MoH) controlling every aspect of health care. In 1995 the Health Insurance Institute (HII) was established in an attempt to decentralize health care.56 In 1999 the decentralization process evolved further and created new structures
aiming to organize and finance the primary health care (PHC) separately from MoH.\textsuperscript{56} Some limited administrative and fiscal authorities were transferred to local governments as part of the decentralization process.\textsuperscript{56} However, the financing of PHC continued to be very fragmented between MoH, newly created structures, Ministry of Local Government and Decentralization, HII, local government and new legislative measures and regulations which did not leave enough time for the old ones to be dissolved thus creating room for confusion and delays.\textsuperscript{56,57} These ambiguities appeared to stimulate spending patterns that did not foster accountability which is essential to incentivize provider payments for achieving improvements in the performance and quality of health care.\textsuperscript{56} In addition, under-the-table or informal payments occur commonly in public health facilities,\textsuperscript{58,59} and the situation has worsened since the percentage of individuals who were requested to pay informally was higher than in 2002.\textsuperscript{59} The total informal health payments per capita increased substantially from 220 Albanian Leks (ALL) in 2002 to 384 ALL in 2008.\textsuperscript{58} The out-of-pocket payments may have catastrophic consequences for households, increase the poverty gap and their impoverishing effect is larger among the poorest individuals in Albania.\textsuperscript{60} In Albania corruption in health sector remains widespread.\textsuperscript{61}

During the years the reforms have tackled different aspects of health care system. The family physician has been placed at the center of the system and the managerial and financing autonomy of PHC centers has been strengthened as well.\textsuperscript{57} On the other hand, the reforms are trying to overcome the fragmentation of health financing, administration and management by designing the HII as the unique buyer of health services and the one entity to be entitled for contracting with service providers,\textsuperscript{57} in line with the recommendation given in early health system analysis.\textsuperscript{56} In this regard, in late 2013-early 2014 the National Health Service was established in Albania with the aim to totally reform the system of health service financing in order to meet the expectations of the providers and the public.\textsuperscript{57}

In Kosovo the health care system faces numerous problems. The health system should guarantee universal access to everybody but in reality half of health related expenditures are paid out-of-pocket.\textsuperscript{62} These out-of-pocket payments could increase the level of poverty by 2-3\% a year.\textsuperscript{62} Furthermore, political, governance and institutional fragmentation affect negatively the performance of the Kosovo’s health system resulting in low service quality, low accountability, increasing inequity, unsatisfied health personnel, low transparency on organization and responsibilities and unclear or confusing legislation in place.\textsuperscript{62}

In transitional Kosovo there still remain challenges to overcome in order for the health care system to be comprehensive in providing preventive, diagnostic and treatment services and therefore closer to EU standards.\textsuperscript{48} Infant mortality rate and maternal mortality rate are much higher compared to EU member states.\textsuperscript{48} Coordinated interventions are therefore needed to improve mother and child care tackling family planning issues, antenatal and post-natal care and the overall health system in order to
strengthen its capabilities of responding to the health care needs of mothers and young children. These objectives are part of the 2011-2014 action plan for the health sector strategy of the Ministry of Health of Kosovo. The action plan also tackles the strengthening of preventive services. The needed reforms and interventions in Kosovo are even more critical than in Albania in the context that the country has come out of an armed conflict which has been preceded by disruption in all fields of life. The rebuilding is therefore harder and the results will take more time to be achieved.

PUBLIC HEALTH

The Albanian health indicators continued to improve until early ‘90s despite the restriction imposed by the ruling communist elite. This phenomenon is known as the “Albanian paradox” and is dedicated to low daily calorie intake, high levels of physical activity and Mediterranean diet. After the collapse of communism there was a collapse of public health services in the country such as inadequate vaccination coverage and public health unable to respond to public health emergencies. Gradually, the training in public health was intensified and the institution responsible for the public health were strengthened as well. In the 2007-2008 academic year the Public Health School was established according to Bologna charter. In 2009 the Public Health law entered into force stating the main principles, basic activities and services as well as the organization of public health structures and the institutions responsible for the provision of public health services to the Albanian community.

In Kosovo, public health is undoubtedly affected by the political and economic changes. The consequences are unfavorable health indicators such as high infant and maternal mortality rates (Table 2) and other deteriorated health indicators such as TB rates which are higher in Kosovo compared to all its neighboring countries. Therefore, the role of the National Institute of Public Health in Kosovo has to be strengthened in order to promote health and establish norms and standards of public health services to be delivered for this community.

In summary, in every country public health should be able to provide some essential tasks which include the monitoring of the health status of the community, detection of community health problems and hazards, informing, educating and empowering people about health issues, mobilizing community action, enforcing the rule of (public) health laws, linking people to needed services, guaranteeing a competent workforce, evaluating the effectiveness and quality of public health services and researching and suggesting (new) solutions to public health problems. As it is suggested by the information discussed above, in Albania and Kosovo these essential public health tasks are only partly achieved for the time being.
CONCLUSION

Albania and Kosovo are undergoing an intensive transition period which is affecting all fields of life with the health and public health systems often being overlooked at the expenses of the overall welfare of the citizens. The share of GDP dedicated to the health sector is too low in order for the respective Ministries of Health to achieve and maintain appropriate health and public health indicators. Despite the relatively good health indicators compared to least developed countries, Albania and Kosovo are still far from those applied in EU countries. Albania and Kosovo are facing the full consequences of the demographic and epidemiological transition which require firm strategies, policies and intervention to be addressed appropriately.

The main barriers toward achievement of health and public health targets are slow economic growth, political unrest and a political elite not committed to the community but rather to itself often easily trading the overall wellbeing of the citizens in exchange to quick personal and political benefits, widespread corruption, not enforcement of current legislation and lack of accountability by all parts.

In conclusion, both countries are still at the crossroads of their economic and societal development. The transition period for Albania and Kosovo will be put to an end only when the respective ruling elites will understand that the wellbeing of their communities is the most important issue to address. The public that elected the actual ruling elites expects nothing less and nothing more than this.
REFERENCES

4. Albanian Center for Population and Development (ACPD).


CHAPTER 3

Health literacy and socioeconomic characteristics of older people in transitional Kosovo

ABSTRACT

Aims
Health literacy among older people has received little attention in transitional countries of Southeast Europe. Our aim was to assess the level and socioeconomic correlates of health literacy among older people in Kosovo, a post-war country in the Western Balkans.

Study design
Cross-sectional study.

Place and duration of study
Kosovo, between January-March 2011.

Methods
This nationwide survey, conducted in Kosovo in 2011, included 1753 individuals aged ≥65 years (886 men, 867 women; mean age 73.4±6.3 years; response rate: 77%). Participants were asked to assess, on a scale from 1 to 5, their level of difficulty with regard to access, understanding, appraisal, and application of health information. Subscale scores and an overall health literacy score were calculated for each participant. Information on socioeconomic characteristics was also collected.

Results
Subscale scores of health literacy were strongly correlated with each other (range of Spearman’s rho: 0.8-0.9). Mean values of the overall health literacy scores were significantly higher in men, urban residents, married individuals, the highly educated, and the better off participants.

Conclusions
This may be the first report from the Western Balkans addressing health literacy in a population-based sample. Future studies in Kosovo and other settings in the region should provide further insight into the magnitude and socioeconomic determinants of health literacy which is an under-researched topic in countries of Southeast Europe.

Keywords
Aging; Health Information; Health Literacy; Kosovo; Older People.
1. INTRODUCTION

Access to better information is required to support people’s participation and enable them making their own health choices. The decision-making process is impacted by people’s health competencies, which is linked to literacy, and entails the knowledge, motivation and competence to access, understand, appraise and apply information to make decisions in everyday life in terms of healthcare, disease prevention, and health promotion during the course of life. Various personal characteristics, demographic and social factors may as well have an impact on health literacy. There are indications that low literacy leads to marked variation in an individual’s ability to obtain relevant health information, and in their opportunity and capability to apply the information in interactions with health professionals and health care services. Consequently, low health literacy may lead to worse health outcomes, ranging from worse self-rated health status, longer hospitalization and higher use of healthcare services resulting in higher healthcare costs, difficulties to follow medical instructions, impaired ability to navigate the health system and lower participation in screening programs.

Health literacy and its association with socio-demographic and socioeconomic factors have been mainly studied in USA and Canada and more recently in Australia, Asia and Europe.

On the other hand, data on health literacy in former communist countries of the Western Balkans including Kosovo are scarce. Kosovo is the newest state in Europe struggling to establish a functional democracy after the breakdown of former Yugoslavia and the subsequent war in the region. In the framework of a population-based survey, our aim was to assess the level and socioeconomic correlates of health literacy among older people in Kosovo in terms of accessing, understanding, appraising and applying the information related to health care, disease prevention and health promotion.

2. MATERIAL AND METHODS

2.1 Study population

A nation-wide cross-sectional study among individuals aged 65 years or older was conducted in Kosovo in 2011. A population-based sample of 2400 individuals aged ≥65 years was drawn based on the 2010 lists (sampling frame) available from the Kosovo Ministry of Labour and Social Welfare. Twelve strata were established (based on sex-stratification [men vs. women], place of residence [urban vs. rural areas] and age-stratification [65-74 years, 75-84 years and ≥85years]). A simple random sample of 200 individuals in each of the twelve strata was drawn. Of the initial 2400 individuals tar-
geted for inclusion, 135 participants were ineligible and further 375 individuals refused to participate, leading to 1890 study participants. Of these, 137 participants were excluded from the current analysis due to incomplete information regarding health literacy. Therefore, this report is based on 1753 individuals, with an overall response rate of 77.4% (1753/2265).

2.2 Data collection

A structured interviewer-administered questionnaire (including 25 items) was used to assess four dimensions of health literacy: access (5 items), understanding (7 items), appraisal (8 items) and application (5 items) of health information in three different situations/domains: health promotion, disease prevention and cure of disease. The health literacy instrument employed in the current study was developed in the framework of a large EU supported project. Participants were asked to assess, in a scale ranging from 1 (unable – implying least health literacy score) to 5 (without any difficulty – maximal health literacy score), their level of difficulty with regard to access/understanding/appraisal/application of health information.

The health literacy instrument was pre-tested in a sample of older people (N=38) attending primary health care services in Kosovo and Albania before conducting the current survey.

A full version of the 25-item instrument used for the assessment of health literacy in our study is presented in Appendix 1.

An overall health literacy score (overall index) was calculated for each participant ranging from 25 (least health literacy score) to 125 (maximal health literacy score). In addition, four subscale scores (domain indexes) were calculated in line with the four domains explored namely: access (range: 5-25), understanding (range: 7-35), appraisal (range: 8-40) and application (range: 5-25) of health information.

In addition, we standardized the overall health literacy index in our sample with the overall health literacy score pertinent to the Test of Functional Health Literacy in Adults (TOFHLA) in order to compare our findings with previous studies.

Information on demographic factors (age and sex) and socioeconomic characteristics [place of residence (urban areas vs. rural areas), marital status (dichotomized into: married vs. not married), educational level (years of completed formal schooling), and self-perceived poverty (dichotomized into: not poor vs. poor)] was also collected.

2.3 Statistical analysis

Age-sex and place-of-residence standardized/weighted percentages and their respective 95% confidence intervals (95%CIs) were calculated for the socioeconomic characteristics of study participants.
Cronbach’s alpha, used to assess the internal consistency of the health literacy instrument, ranged from 0.90 to 0.94 for the subscale scores and the overall health literacy score.

Mann-Whitney test was used to compare mean values of health literacy scores by different categories of demographic and socioeconomic characteristics.

Spearman’s correlation coefficient was used to assess the linear association between health literacy indexes (subscale scores).

General linear model was used to assess the association between the overall health literacy index and socio-demographic and socioeconomic factors. Age-adjusted and multivariable-adjusted mean values and their respective 95% CIs of the overall health literacy score according to different categories of the socioeconomic characteristics were calculated.

SPSS, version 15.0 was used for all the statistical analyses.

3. RESULTS

Mean age of participants (54% women) was 73.4±6.3 years. On average, participants had 4.5 years of formal education, 62% resided in rural areas, and 48% regarded themselves as poor (Table 1).

Mean overall and subscale health literacy scores were all significantly higher in men, urban residents, married individuals, among those who had at least one year of formal schooling and the better off participants (P<0.001 for all) [Table 2].

Age, sex, place of residence, education level, and self-perceived poverty, except marital status, were significant “predictors” of the overall health literacy score in unadjusted and multivariable-adjusted general linear models (Table 4). In multivariable-adjusted analysis, men and the “younger” participants reported a significantly higher mean health literacy score compared, respectively, to women (85.4 vs. 80.3, respectively) and the older participants (90.1 vs. 73.8, respectively). Furthermore, urban residents had a significantly higher mean overall health literacy score compared to rural counterparts (86.2 vs. 79.5, respectively). Education was strongly and linearly associated with health literacy score: individuals with ≥9 years of education had a (multivariable-adjusted) mean score of 101.5 compared to 80.1 among those with 1-8 years of education and 66.9 among individuals without any formal schooling. Furthermore, wealthier participants had a significantly higher mean health literacy score compared to their poorer counterparts (85.6 vs. 80.1, respectively) [Table 4].
Table 1. Distribution of socioeconomic characteristics in a representative sample of older people in Kosovo in 2011

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men (N=886)</th>
<th>Women (N=867)</th>
<th>Total (N=1753)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number (percent)*</td>
<td>Standardized percentage (95% CI)</td>
<td>Number (percent)</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;75 years</td>
<td>278 (31.4)</td>
<td>278 (32.1)</td>
<td>556 (31.7)</td>
</tr>
<tr>
<td>75-84 years</td>
<td>325 (36.7)</td>
<td>308 (35.5)</td>
<td>633 (36.1)</td>
</tr>
<tr>
<td>&gt;84 years</td>
<td>283 (31.9)</td>
<td>281 (32.4)</td>
<td>564 (32.2)</td>
</tr>
<tr>
<td>Residence:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>450 (50.8)</td>
<td>452 (52.1)</td>
<td>902 (51.5)</td>
</tr>
<tr>
<td>Urban</td>
<td>436 (49.2)</td>
<td>415 (47.9)</td>
<td>851 (48.5)</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 years</td>
<td>236 (26.8)</td>
<td>540 (63.2)</td>
<td>776 (44.7)</td>
</tr>
<tr>
<td>1-8 years</td>
<td>476 (54.0)</td>
<td>297 (34.7)</td>
<td>773 (44.5)</td>
</tr>
<tr>
<td>&gt;8 years</td>
<td>169 (19.2)</td>
<td>18 (2.1)</td>
<td>187 (10.8)</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>516 (59.1)</td>
<td>225 (26.4)</td>
<td>741 (42.9)</td>
</tr>
<tr>
<td>Not married</td>
<td>357 (40.9)</td>
<td>628 (73.6)</td>
<td>985 (57.1)</td>
</tr>
<tr>
<td>Self-perceived poverty:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not poor</td>
<td>463 (53.6)</td>
<td>389 (45.6)</td>
<td>852 (49.6)</td>
</tr>
<tr>
<td>Poor</td>
<td>401 (46.4)</td>
<td>465 (54.4)</td>
<td>866 (50.4)</td>
</tr>
</tbody>
</table>

* Absolute numbers in the sample and column percentages (in parentheses). Discrepancies in the totals are due to missing covariate values.
† Age-sex and-residence standardized percentages in accordance with the respective strata weights in the sampling frame.

Table 3. Correlational matrix of the overall and subscale health literacy scores

<table>
<thead>
<tr>
<th></th>
<th>Overall score</th>
<th>Access</th>
<th>Understanding</th>
<th>Appraisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>0.932 (&lt;0.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>0.839 (0.01)</td>
<td>0.855 (0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal</td>
<td>0.968 (0.01)</td>
<td>0.873 (0.01)</td>
<td>0.844 (0.01)</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>0.933 (0.01)</td>
<td>0.810 (0.01)</td>
<td>0.804 (0.001)</td>
<td>0.926 (0.01)</td>
</tr>
</tbody>
</table>

* Spearman’s correlation coefficients and their respective p-values (in parentheses).
Table 2. Distribution of the overall health literacy score and subscale scores by socioeconomic characteristics*

<table>
<thead>
<tr>
<th>Health literacy</th>
<th>Total</th>
<th>Sex</th>
<th>Age-group (years)</th>
<th>Residence</th>
<th>Education (years)</th>
<th>Marital status</th>
<th>Poverty level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
<td>65-74</td>
<td>≥75</td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Overall score</td>
<td>76.5 ± 29.9 †</td>
<td>83.6 ± 29.2</td>
<td>69.3 ± 28.9</td>
<td>89.2 ± 26.9</td>
<td>70.6 ± 29.4</td>
<td>70.4 ± 28.3</td>
<td>82.9 ± 30.3</td>
</tr>
<tr>
<td>Access</td>
<td>15.6 ± 6.4</td>
<td>16.9 ± 6.2</td>
<td>14.2 ± 6.4</td>
<td>18.1 ± 5.8</td>
<td>14.4 ± 6.3</td>
<td>14.3 ± 6.0</td>
<td>16.9 ± 6.6</td>
</tr>
<tr>
<td>Understanding</td>
<td>19.1 ± 8.6</td>
<td>21.5 ± 8.7</td>
<td>16.6 ± 7.8</td>
<td>23.1 ± 8.4</td>
<td>17.2 ± 8.1</td>
<td>17.3 ± 7.6</td>
<td>20.9 ± 9.1</td>
</tr>
<tr>
<td>Appraisal</td>
<td>26.0 ± 10.3</td>
<td>28.0 ± 9.9</td>
<td>23.9 ± 10.4</td>
<td>29.8 ± 9.0</td>
<td>24.2 ± 10.4</td>
<td>24.1 ± 10.1</td>
<td>28.0 ± 10.2</td>
</tr>
<tr>
<td>Application</td>
<td>15.9 ± 6.3</td>
<td>17.1 ± 6.1</td>
<td>14.6 ± 6.3</td>
<td>18.3 ± 5.5</td>
<td>14.8 ± 6.3</td>
<td>14.7 ± 6.2</td>
<td>17.1 ± 6.2</td>
</tr>
</tbody>
</table>

* Mann-Whitney test was used to compare the categories of individuals distinguished by sex, age-group, residence, education, marital status and poverty level (all P-values: <0.001).
† Crude mean values ± standard deviations.
Table 4. Association of the overall health literacy score with socioeconomic characteristics; unadjusted and multivariable-adjusted mean values from the general linear model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unadjusted models</th>
<th></th>
<th>Multivariable-adjusted models</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (95% CI)†</td>
<td>P</td>
<td>Mean (95% CI)</td>
<td>P</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>83.6 (81.6-85.5)</td>
<td>&lt;0.001</td>
<td>85.4 (83.6-87.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Female</td>
<td>69.3 (67.4-71.2)</td>
<td></td>
<td>80.3 (78.0-82.5)</td>
<td></td>
</tr>
<tr>
<td>Age group:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;75 years</td>
<td>89.2 (86.9-91.6)</td>
<td>&lt;0.001</td>
<td>90.1 (87.8-92.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>75-84 years</td>
<td>77.2 (75.0-79.4)</td>
<td>&lt;0.001</td>
<td>84.6 (82.4-86.8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>&gt;84 years</td>
<td>63.1 (60.8-65.4)</td>
<td></td>
<td>73.8 (71.2-76.4)</td>
<td></td>
</tr>
<tr>
<td>Place of residence:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>70.4 (68.5-72.4)</td>
<td>&lt;0.001</td>
<td>79.5 (77.4-81.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Urban</td>
<td>82.9 (81.0-84.9)</td>
<td></td>
<td>86.2 (84.4-88.0)</td>
<td></td>
</tr>
<tr>
<td>Education level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 years</td>
<td>62.0 (60.2-63.8)</td>
<td>&lt;0.001</td>
<td>66.9 (64.9-68.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>1-8 years</td>
<td>83.2 (81.3-85.0)</td>
<td>&lt;0.001</td>
<td>80.1 (78.3-82.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>&gt;8 years</td>
<td>109.1 (105.4-112.8)</td>
<td>&lt;0.001</td>
<td>101.5 (97.6-105.4)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>84.6 (82.6-86.7)</td>
<td>&lt;0.001</td>
<td>83.4 (81.3-85.6)</td>
<td>0.396</td>
</tr>
<tr>
<td>Not married</td>
<td>70.1 (68.3-71.9)</td>
<td></td>
<td>82.3 (80.3-84.2)</td>
<td></td>
</tr>
<tr>
<td>Self-perceived poverty:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not poor</td>
<td>80.7 (78.7-82.7)</td>
<td>&lt;0.001</td>
<td>85.6 (83.7-87.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Poor</td>
<td>70.5 (70.5-74.4)</td>
<td></td>
<td>80.1 (78.1-82.0)</td>
<td></td>
</tr>
</tbody>
</table>

* Range of health literacy score from 25 (least health literacy) to 125 (maximal health literacy).
† This model, including 1676 individuals, was simultaneously adjusted for all covariates presented in the table.
‡ Overall p-values and degrees of freedom (in parentheses).

Our study provides novel and important information regarding the socio-demographic and socioeconomic factors associated with health literacy level among the older population in Kosovo. We found significant associations of health literacy with sex, age, education, place of residence and self-perceived poverty.

As a potential tool for improving decision making on health, health literacy could be of particular importance among older persons which are often regarded as a disadvantaged population group. Furthermore, health literacy deteriorates with age, as demonstrated in a study where the score of functional health literacy declined by 0.9 for every year of increase in age, controlling for a number of socio-demographic variables. Conversely, another report indicated that older persons with lower health literacy levels had significantly higher rates of chronic conditions and worse physical health compared to people with adequate health literacy. Also, a study conducted in the USA reported that older individuals had a lower average health literacy compared to younger adults.

Our results are generally in concordance with those reported by previous research conducted in the region and beyond, which have highlighted negative associations of health literacy with age and education. The rate of inadequate or marginal health
literacy was found in 81.8% of primary care patients aged ≥65 years in a study in Serbia,19 whereas 59% of adults aged 65 years or older in USA reported below basic or basic health literacy levels15 compared to 73.6% in our study. Furthermore, health literacy level was reported to be significantly lower among women19 and those below the poverty line or with a lower income.15,17,19 The association of health literacy with sex is controversial since some population-based surveys have reported mean health literacy scores to be higher among women than men.15,17 These sex discrepancies might be influenced by the distribution of gender education gap and educational attainment through the life course. For example, our survey included people aged ≥65 years whereas other studies have surveyed people aged ≥16 years15 and 18-90 years17; usually females are overrepresented among tertiary education students and graduates21 and they perform better compared to males22 in developed countries. On the other hand, almost two-thirds of female participants in our survey had no formal schooling and this fact, giving the strong association between health literacy and education, might explain the different sex health literacy results between our study and those reported elsewhere.

The two most widely used tests for measuring health literacy are the Rapid Estimate of Adult Literacy in Medicine (REALM) and TOFHLA. The first one mainly tests the recognition of medical and health related terms,23 whereas TOFHLA assesses numeracy and comprehension skills thus determining whether subjects can read or understand a written prescription.12 Upon a standardized measurement scale with TOFHLA, in our study, inadequate and marginal health literacy was found in 58.7% and 14.9% of participants, whereas the remaining 26.4% of individuals had an adequate level of health literacy.

Health literacy among old adults has been measured in different settings and using various health literacy tools13-14,19,24-25 whereas other studies have explored the health literacy in relation to health care, disease prevention and health system navigation.15,18

We used a new instrument trying to capture the areas embedded in the current broader concept of health literacy which covers both personal abilities and health system characteristics determining one’s ability for making sound health decisions. Our tool was a preliminary version of the HLS-EU instrument, developed by the European Health Literacy Consortium and discussed elsewhere.2

It is important to study the socioeconomic correlates of health literacy as they can partly explain the pathway to unfavorable health outcomes. The personal socioeconomic and demographic characteristics of a person together with personal aspects such as vision and hearing skills, or verbal ability determine the level of health literacy at a point in time. This level of health literacy then determines the interactions of the individual with the health system in terms of access and utilization of health care, the quality of doctor-patient interaction and self-care, leading finally to various health outcomes.26 Therefore, it is logical to assume that, the better the health literacy level, the better the health outcomes. In this context, the aim should always be toward improvement of the
health literacy level of individuals and, to achieve this objective, the following potential routes are suggested: a) improve health literacy in the population; b) improve written and multimedia communication; c) improve oral communication in health care visits; and, d) alter the system of care by making the task or situation less demanding through, for instance, simplifying or making the system more “readable”2,27 Education seems to be vital for increasing the level of health literacy which consequently leads to behavioral change. Thus, it has been suggested that educating diabetic patients about disease self-management may result in higher engagement in healthy behaviors and preventive health care services.28 Yet, changing behaviors is a complex process and different behavioral change theories have been suggested to explain the attitudes-to-behavior change transition, either through a series of attitude changes, or consequential behavioral change.29 However, caution is needed about the education-age relationship and attitudes and behavior change.

Our study has several limitations in line with its cross-sectional design which is susceptible to biases of selection and information. Our study included a large population-based sample and the response rate was quite high. Furthermore, the instrument we used for assessment of health literacy was based on a vigorous research work conducted in the framework of a large EU supported project.2 In addition, we pre-tested our health literacy tool in a sample of older people in Kosovo and Albania before conducting the current survey. Yet, we cannot dismiss the possibility of differential reporting among categories of older people differing in socioeconomic characteristics. Finally, findings from cross-sectional studies should be interpreted with caution.

4. CONCLUSION

This is probably the first report from the Western Balkans addressing health literacy in a population-based sample. Health literacy is an under-researched topic in countries of Southeast Europe and future prospective studies should be conducted in order to determine the magnitude and determinants of health literacy among the older population in Kosovo and other transitional settings.

Consent

All authors declare that written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

Ethical approval

An ethical approval from the Professional Ethical Board of the Ministry of Health of Kosovo is available.
Acknowledgements

The authors wish to thank the study participants for their contribution to the research, as well as all investigators and staff involved.

Competing interests
All authors declared that no competing interests exist.
REFERENCES


APPENDIX

Appendix 1 – Instrument for assessment of health literacy

Access:
1. Are you able to find information about diseases?
2. Are you able to inform yourself about treatments?
3. Are you able to find information about risks such as e.g. smoking, obesity?
4. Are you able to find information on how to stay healthy?
5. Are you able to obtain information on e.g. healthy food and how to stay fit?

Understand:
1. Are you able to understand the content of leaflets that come with medications?
2. Are you able to understand medical prescriptions?
3. Are you able to read risk information brochures found at pharmacies, in hospitals or at a doctor’s clinic?
4. Are you able to understand information about risky behavior as e.g. driving drunk, using drugs and smoking?
5. Are you able to understand the content of food labels?
6. Are you able to understand the importance of a healthy lifestyle?
7. Are you able to understand the importance of a healthy environment e.g. at school, at the workplace, at home and in the neighborhood?

Appraise:
1. Are you able to discuss medical information with your doctor/pharmacist?
2. Are you able to consider risk and benefit of treatment options?
3. Are you able to judge what medical advice is best for you?
4. Are you able to identify your own risk actions?
5. Are you able to learn from other people’s risky behavior?
6. Are you able to critically appraise risk information from health authorities/friends, family/media?
7. Are you able to appraise your own health related habits?
8. Are you able to consider risk and benefit of healthy choices with regards to e.g. food and exercise?

Apply:
1. Are you able to follow instructions that a doctor/nurse/pharmacist gives you?
2. Are you able to follow instructions that health authorities give you e.g. get a vaccination; take part in screening; drive safely?
3. Are you able to change your risk-related habits, if you want to?
4. Are you able to get access to healthy products?
5. Are you able to use health information to your own benefit?

*Answer categories:*

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without any difficulty</td>
<td>5</td>
</tr>
<tr>
<td>With little difficulty</td>
<td>4</td>
</tr>
<tr>
<td>With some difficulty</td>
<td>3</td>
</tr>
<tr>
<td>Very difficult</td>
<td>2</td>
</tr>
<tr>
<td>Unable to</td>
<td>1</td>
</tr>
</tbody>
</table>
CHAPTER 4

Health literacy, self-perceived health and self-reported chronic morbidity among older people in Kosovo

SUMMARY

The aim was to describe health literacy among the older population of Kosovo, an Albanian speaking post-war country in the Western Balkans, in the context of self-perceived health status and self-reported chronic morbidity. A cross-sectional study was conducted in Kosovo in 2011 including 1753 individuals aged ≥65 years (886 men, 867 women; mean age 73.4 ± 6.3 years; response rate: 77%). Participants were asked to assess, on a scale from 1 to 5, their level of difficulty with regard to access, understanding, appraisal and application of health information. Sub-scale scores and an overall health literacy score were calculated for each participant. Information on self-perceived health status, presence and number of chronic diseases and socioeconomic characteristics was also collected. Mean values of the overall health literacy score and all sub-scale scores (access, understanding, appraisal and application) were lower among older people who reported a poorer health status or at least one chronic condition compared with individuals who perceived their health status as good or had no chronic conditions (p<0.001 for all). Our findings provide valuable evidence on the independent and inverse association between health literacy levels and self-perceived health and chronic morbidity in this post-war European population. The putative link with chronic morbidity and lower adherence to health services is hard to establish through this cross-sectional study. Prospective population-based studies should be conducted in Kosovo and other transitional settings to replicate these findings and properly address the causal relationship between health literacy and health status.

Keywords:
Chronic Morbidity; Health Literacy; Older People; Self-Perceived Health.
Health literacy is defined as ‘the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.’ The available evidence suggests that low or inadequate health literacy levels are associated with higher rates of mortality, adverse health outcomes, higher health care service utilization and costs, and lower participation in preventive programs. Older people are more susceptible to impaired health and, while health literacy shows a consistent decline with advancing age, it is likely that older people may suffer most of the burden of inadequate health literacy-adverse health outcomes’ relationship.

Health literacy is impacted by basic socio-economic factors and there is growing evidence about its relationship with self-perceived health and self-reported morbidity among older people. Thus, many studies have reported a positive association between health literacy with self-perceived better health and self-reported lower morbidity after controlling for demographic and socioeconomic factors. Some vulnerable population subgroups including older people, where low education, poverty and chronic morbidity rates are often higher, may exhibit a lower health literacy level and its related consequences.

The proportion of individuals aged ≥65 years in Kosovo has steadily increased in the past decades, from ~4.4% during 1961 – 1981 up to 6.7% in 2011. Besides the increasing need for medical care, the aging trend implies a greater social responsibility from the community at large in order to support healthy aging among older people in Kosovo – a country undergoing a very difficult period of political and socioeconomic transition following a long and devastating war with Serbia. For countries of the western Balkans including Kosovo, data on health literacy levels and its putative health effects are scant. In this context, in the framework of a 2011 nationwide cross-sectional study in Kosovo including men and women aged ≥65 years, we assessed the association of health literacy with self-perceived health status and chronic morbidity, controlling for a number of socio-demographic and socioeconomic factors. We hypothesized that low health literacy level is an independent marker for poor self-perceived health status and self-reported chronic morbidity among older people in this Albanian-speaking post-war population.
METHODS

Study population

A population-based sample of 2400 individuals aged ≥65 years was drawn based on the 2010 lists (sampling frame) available from the Kosovo Ministry of Labour and Social Welfare. Twelve strata were established [based on sex-stratification (men vs. women), place of residence (urban vs. rural areas) and age-stratification (65 – 74 years, 75 – 84 years and ≥85 years)]. A simple random sample of 200 individuals in each of the 12 strata was drawn for a total of 2400 individuals. Among these, 135 individuals were ineligible (69 people were dead, whereas further 66 individuals had left Kosovo at the time of the survey) and of the 2265 eligible individuals, 1890 agreed to participate in the study.

Two recently published papers have provided the scientific community with a glimpse of the situation of older people aged ≥65 years in this transitional country by reporting about the socioeconomic conditions and prevalence of chronic morbidity in this community. The studies informed that one-third of older people had no formal schooling (47.7% of women and 16.7% of men) and almost half of them perceived themselves as poor or extremely poor (52% of women and 41% of men). In addition, 4 out of 10 older people in Kosovo were unable to access medical care, the overwhelming majority of whom due to unaffordable costs. Furthermore, four out of five persons had at least one chronic condition and more than three out of five individuals were living with at least two chronic conditions.

Data collection

A structured interviewer-administered questionnaire (including 25 items) was used to assess four dimensions of health literacy: access (five items), understanding (seven items), appraisal (eight items) and application (five items) of health information in three different situations/domains: health promotion, disease prevention and cure of disease. The health literacy instrument employed in the current study was developed in the framework of a large EU supported project. This new instrument captures the areas embedded in the current broader concept of health literacy which covers both personal abilities and health system characteristics determining one’s ability for making sound health decisions.

Participants were asked to assess, in a scale ranging from 1 (unable – implying least health literacy score) to 5 (without any difficulty – maximal health literacy score), their level of difficulty with regard to access/understanding/appraisal/application of health information.
The health literacy instrument, designed and developed for a general population aged ≥18 years, was pre-tested in a sample of older people (N = 38) attending primary health care services in Kosovo and Albania before conducting the current survey.

A full version of the 25-item instrument used for the assessment of health literacy in our study is presented in Appendix.

An overall health literacy score (overall index) was calculated for each participant ranging from 25 (least health literacy score) to 125 (maximal health literacy score). In addition, four subscale scores (domain indexes) were calculated in line with the four domains explored namely: access (range: 5 – 25), understanding (range: 7 – 35), appraisal (range: 8 – 40) and application (range: 5 – 25) of health information.

Furthermore, participants were asked to rate their health status ('Overall, in a scale from 1 (poor health) to 5 (good health), how do you rate your health status in the past 12 months?'). In the analysis, self-perceived health status was also dichotomized into poor health (score: 1 – 2) vs. good health (score: 3 – 5). In addition, participants were asked about the presence and the number of chronic conditions ('Do you have any long-standing or chronic illness, disease or disorder?': yes vs. no) and, upon a positive response, the type and the number of chronic conditions they were suffering from (range of self-reported chronic conditions: 1 – 6). Information on socio-demographic (age and sex) and socioeconomic characteristics (place of residence, marital status, educational level and self-perceived poverty) was also collected.

The survey was approved by the Professional Ethical Board of the Ministry of Health of Kosovo. All individuals who agreed to participate gave written consent after being explained the aim and procedures of the survey.

Statistical analysis

One hundred and thirty-seven individuals with partially missing data for health literacy items and/or a large number of covariates were excluded from the analysis resulting in 1753 individuals, with an overall response rate of 77.4% (1753/2265).

Self-perceived health status and self-reported chronic conditions’ sample estimates were standardized (population-weighted) for age, sex and place of residence in accordance with the respective strata from the sampling frame.

The Mann–Whitney U-test was used to compare the mean values of health literacy scores between individuals who reported good health and no chronic conditions vs. those who reported poor health and at least one chronic condition, respectively.

The general linear model was used to compare the mean values of health literacy scores by different categories of self-perceived health status (poor vs. good) and the number of self-reported chronic conditions (0, 1, 2, ≥3 diseases). Initially, age-adjusted mean values of health literacy scores and their respective 95% confidence intervals (95% CIs) were calculated. Subsequently, models were also adjusted for demographic and socioeconomic characteristics (sex, education, marital status, place of residence...
and self-perceived poverty). Finally, models with self-reported health status (dependent variable) and models with chronic conditions (dependent variable) were additionally adjusted for chronic conditions and self-perceived health status, respectively, and 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

Standardized to the overall older people in Kosovo, the weighted self-perceived health was poor or very poor in ~53% of participants and ~84% of them reported at least one chronic condition (Table 1). Women had a remarkably higher weighted prevalence of self-perceived poor health than men (60 vs. 45%, respectively). The (self-reported) presence of at least one chronic condition was also higher among women than men (88 vs. 78%, respectively).

Table 1. Distribution of self-perceived health status and chronic conditions in a representative sample of older people in Kosovo in 2011

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men (N=886)</th>
<th>Women (N=867)</th>
<th>Total (N=1753)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample, n (%)</td>
<td>Weighted, % (95% CI)</td>
<td>Sample, n (%)</td>
</tr>
<tr>
<td>Self-perceived health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very poor</td>
<td>120 (13.8)</td>
<td>10.2 (9.9-10.5)</td>
<td>157 (18.3)</td>
</tr>
<tr>
<td>Poor</td>
<td>339 (38.9)</td>
<td>34.9 (34.6-35.3)</td>
<td>399 (46.4)</td>
</tr>
<tr>
<td>Fair</td>
<td>314 (36.1)</td>
<td>39.7 (39.3-40.1)</td>
<td>250 (29.1)</td>
</tr>
<tr>
<td>Good</td>
<td>81 (9.3)</td>
<td>12.3 (12.0-12.6)</td>
<td>47 (5.5)</td>
</tr>
<tr>
<td>Very good</td>
<td>17 (2.0)</td>
<td>2.7 (2.6-2.9)</td>
<td>6 (0.7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-perceived health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>412 (47.3)</td>
<td>54.9 (54.5-55.3)</td>
<td>303 (35.3)</td>
</tr>
<tr>
<td>Poor</td>
<td>459 (52.7)</td>
<td>45.1 (44.7-45.6)</td>
<td>556 (64.7)</td>
</tr>
<tr>
<td>Number of chronic conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>141 (15.9)</td>
<td>22.1 (21.8-22.5)</td>
<td>83 (9.6)</td>
</tr>
<tr>
<td>1</td>
<td>333 (37.6)</td>
<td>40.4 (40.1-40.8)</td>
<td>298 (34.4)</td>
</tr>
<tr>
<td>2</td>
<td>266 (30.0)</td>
<td>24.0 (23.7-24.4)</td>
<td>301 (34.7)</td>
</tr>
<tr>
<td>≥3</td>
<td>146 (16.5)</td>
<td>13.4 (13.1-13.6)</td>
<td>185 (21.3)</td>
</tr>
<tr>
<td>Presence of chronic conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>141 (15.9)</td>
<td>22.1 (21.8-22.5)</td>
<td>83 (9.6)</td>
</tr>
<tr>
<td>Yes</td>
<td>745 (84.1)</td>
<td>77.9 (77.5-78.2)</td>
<td>784 (70.4)</td>
</tr>
</tbody>
</table>

a Discrepancies in totals are due to missing covariate values.
b Age, sex and residence standardized/weighted percentages in accordance with the respective strata weights in the sampling frame.
The mean values of the overall health literacy score and all subscale scores (access, understanding, appraisal and application) were lower among individuals who perceived a poorer health status compared with those who perceived their health status as good (p < 0.001 for all) (Table 2, upper panel). Similar findings were evident for individuals who reported at least one chronic condition vs. those who had no chronic diseases (Table 2, lower panel).

In age-adjusted analysis, the mean value of the overall health literacy score was significantly lower among participants with a poorer self-perceived health status (Table 3, upper panel, model 1). Upon adjustment for demographic and socioeconomic characteristics, the difference was further accentuated (model 2). Additional adjustment for the presence of chronic conditions only slightly altered the findings: mean values of the overall health literacy score were 89.3 and 77.3 among individuals who reported good health and poor health, respectively (model 3).

Table 2. Distribution of the overall health literacy score and subscale scores by self-perceived health status and chronic conditions

<table>
<thead>
<tr>
<th>Health literacy</th>
<th>Poor (N=715)</th>
<th>Good (N=1015)</th>
<th>P value (^a)</th>
<th>Total (N=1730)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper panel: Self-perceived health status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall score</td>
<td>67.6 ± 28.3(^b)</td>
<td>89.1 ± 27.2</td>
<td>&lt;0.001</td>
<td>76.5 ± 29.9</td>
</tr>
<tr>
<td>Access</td>
<td>13.6 ± 6.0</td>
<td>18.3 ± 5.9</td>
<td>&lt;0.001</td>
<td>15.6 ± 6.4</td>
</tr>
<tr>
<td>Understanding</td>
<td>16.6 ± 7.8</td>
<td>22.5 ± 8.4</td>
<td>&lt;0.001</td>
<td>19.1 ± 8.6</td>
</tr>
<tr>
<td>Appraisal</td>
<td>23.1 ± 10.1</td>
<td>30.0 ± 9.2</td>
<td>&lt;0.001</td>
<td>26.0 ± 10.3</td>
</tr>
<tr>
<td>Application</td>
<td>14.3 ± 6.3</td>
<td>18.2 ± 5.6</td>
<td>&lt;0.001</td>
<td>15.9 ± 6.3</td>
</tr>
</tbody>
</table>

| **Lower panel: Number of chronic conditions** | | | | |
| None (N=224) | ≥1 (N=1529) | P value\(^a\) | | |
| Overall score | 88.7 ± 28.9\(^b\) | 74.7 ± 29.6 | <0.001 | | |
| Access | 17.8 ± 6.2 | 15.2 ± 6.4 | <0.001 | | |
| Understanding | 22.2 ± 9.1 | 18.6 ± 8.5 | <0.001 | | |
| Appraisal | 30.1 ± 9.8 | 25.4 ± 10.3 | <0.001 | | |
| Application | 18.5 ± 6.0 | 15.5 ± 6.3 | <0.001 | | |

\(^a\) P-values from the Mann – Whitney test.
\(^b\) Crude mean values + standard deviations.

There was evidence of a graded inverse relationship between the number of self-reported chronic conditions and the overall health literacy score (Table 3, lower panel). In age-adjusted models, the mean health literacy score was considerably and significantly lower among participants with ≥3 chronic conditions (model 1). Adjustment for socioeconomic characteristics attenuated the findings, but the graded relationship with the number of self-reported chronic conditions persisted (model 2). Upon further adjustment for self-perceived health status, the trend was somehow inconsistent and the
differences in the mean values of the overall health literacy scores were substantially smaller among participants with different numbers of chronic conditions. Nevertheless, individuals with ≥3 self-reported chronic diseases exhibited the lowest mean values of the overall health literacy score (model 3).

Table 3. Association of the overall health literacy score with health status variables; age-adjusted and multi-variable-adjusted mean values from the general linear model

<table>
<thead>
<tr>
<th></th>
<th>Model 1a</th>
<th>p-value</th>
<th>Model 2b</th>
<th>p-value</th>
<th>Model 3c</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (95% CI)</td>
<td>Mean (95% CI)</td>
<td>p-value</td>
<td>Mean (95% CI)</td>
<td>p-value</td>
<td>Mean (95% CI)</td>
<td>p-value</td>
</tr>
<tr>
<td>Upper panel: Self-perceived health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>69.1 (67.4-70.7)</td>
<td>&lt;0.001</td>
<td>77.3 (75.5-79.1)</td>
<td>&lt;0.001</td>
<td>77.3 (75.4-79.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Good</td>
<td>87.0 (85.1-89.0)</td>
<td></td>
<td>90.2 (88.3-92.2)</td>
<td></td>
<td>89.3 (87.3-91.4)</td>
<td></td>
</tr>
<tr>
<td>Lower panel: Number of chronic conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic conditions</td>
<td>&lt;0.001 (3)d</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
</tr>
<tr>
<td>0</td>
<td>84.9 (81.3-88.6)</td>
<td>&lt;0.001</td>
<td>87.6 (84.2-91.0)</td>
<td>&lt;0.001</td>
<td>84.4 (81.0-87.7)</td>
<td>0.074</td>
</tr>
<tr>
<td>1</td>
<td>80.4 (78.2-82.5)</td>
<td>&lt;0.001</td>
<td>85.8 (83.7-88.0)</td>
<td>&lt;0.001</td>
<td>86.5 (84.3-88.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>2</td>
<td>73.7 (71.5-76.0)</td>
<td>0.003</td>
<td>80.3 (78.0-82.5)</td>
<td>0.081</td>
<td>82.2 (79.9-84.4)</td>
<td>0.266</td>
</tr>
<tr>
<td>≥3</td>
<td>68.2 (65.2-71.2)</td>
<td></td>
<td>77.2 (74.3-80.2)</td>
<td></td>
<td>80.3 (77.3-83.2)</td>
<td></td>
</tr>
</tbody>
</table>

a Adjusted for age.

b Adjusted also for demographic and socioeconomic characteristics [sex, education, marital status, place of residence (urban vs. rural area) and self-perceived poverty].

c Adjusted also for chronic conditions (upper panel), or self-perceived health (lower panel).

d Overall p-values and degrees of freedom (in parentheses).

DISCUSSION

To our knowledge, this is the first study reporting on the association of health literacy with self-perceived health and self-reported chronic morbidity among older people in Albanian speaking settings. Health literacy score was significantly lower among older people who reported poor health or had at least one chronic condition compared with those perceiving their health as good or who reported no chronic conditions, even after adjusting for a number of demographic and socioeconomic characteristics.

Self-perceived health is a simple measure which has been widely used to quickly assess the health status of individuals in population-based studies and it has been consistently shown to be linked with objective measures of health, mortality, functional loss and biological indicators. The self-reported chronic morbidity shows more variation in accurately predicting objective morbidity. Thus, a few studies suggest quite comparable estimates between the two sources (objective vs. subjective reporting) regarding diabetes and hypertension, but less concordance for other chronic conditions.
Self-perceived health is associated with chronic morbidity. Thus, it has been reported that, as the number of chronic conditions increases the self-perceived health indicates a poorer health status.\(^{26,33}\) Furthermore, self-perceived health declines with age\(^{14}\) which goes in line with the increasing proportion of older people living with at least one chronic condition: the proportion of American individuals aged 65–69, 70–74, 75–79, 80–84 and ≥85 years without any chronic condition in 2008 was 11.7%, 7.5%, 5.7%, 4.6% and 4.5%, respectively.\(^{35}\) In addition, the overwhelming majority of studies have reported a decline in health literacy with advancing age.\(^{21}\)

Notwithstanding the growing body of literature in the international arena highlighting and exploring the health literacy concept in general and its links with self-perceived health status and chronic morbidity among older people in particular, such evidence for the countries of Western Balkans, particularly for Kosovo, is scant. The findings reported from two recent articles from Kosovo\(^{23,24}\) suggest that the situation of older people is rather challenging in the newest country of Europe. Age, sex, education and access to medical care were significantly associated with either self-perceived poverty or self-reported chronic morbidity in this sample of Kosovo older adults. However, no data linking self-perceived health and self-reported chronic morbidity with health literacy have been published to date for Kosovo or other Albanian-speaking countries and, therefore, our study marks the first scientific report in this regard.

However, the relationship between health literacy and health is a complex one. As one paper has pointed out, in order to change behavior it is important not only to possess and understand health information, but also to be motivated, inclined or willing to act concordantly to health promoting or preserving ways.\(^{36}\)

The pathways through which health literacy affects health and disease have been studied, even though there is not exhaustive evidence yet.\(^{57}\) Education is suggested to be linked with health literacy, with higher levels of education associated with higher levels of health literacy and vice versa.\(^{16,21}\) Previous studies among older people aged ≥65 years in Kosovo have pointed out the especially high rate of no formal schooling in this community.\(^{23}\) It has been reported that people with low health literacy have significantly less knowledge about chronic diseases and worse management skills\(^{38,39}\) compared with those with adequate health literacy levels. This situation where low education perpetuates lower health literacy scores might lead to more risky behaviors among low health literate subjects, higher morbidity and worse self-perceived health. On the other hand, the older people community suffered high rates of self-perceived poverty as well and literature reports that low income is also associated with inadequate health literacy.\(^{13,14,16}\) Moreover, low health literacy is associated with significantly lower access to primary care, preventive services and access and adherence to medication services.\(^{14,16,40}\) In Kosovo, more than 40% of older people were unable to access medical care, but this was mainly due to unaffordable costs and, therefore, the putative link with a lower adherence level, on the face of it, is hard to establish.
Health literacy among older people in previous studies has been measured by means of different tools relating to health care, disease prevention and health system navigation. We opted for a new instrument, which also accounted for the previous health literacy tools employed in previous studies, but was further developed and refined in the framework of a large EU supported project. In summary, targeted education interventions may improve health literacy of older people in Kosovo together with tailoring of the health system and information delivery in order to facilitate their engagement in health promoting and disease prevention behaviors. Implementation programs need to also consider the lack of formal education, especially among women, and should be also tailored in accordance with the hectic context of a transitional society which exacerbates poverty levels among older people in the new state of Kosovo.

Our study has several limitations. The cross-sectional design does not allow drawing conclusions about the temporality of events. As in all the other cross-sectional studies, the reporting bias regarding chronic morbidity cannot be excluded. However, we think that this is not a central issue regarding self-reported chronic morbidity in our study since we based this indicator upon the question ‘Has a doctor ever told you that you have...?’ and we presumed that almost all older people included would remember such information when asked at some point in their lives. In addition, we relied on self-reported chronic morbidity, a measurement which is usually affected by the study population and the number of chronic conditions involved. The strong points of the present survey are the sampling method employed which resulted in a nationally representative sample of older adults aged ≥65 years and older in Kosovo and the reporting of measurements not being researched or published earlier in this Southeastern European country.

ACKNOWLEDGMENTS

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REFERENCES

CHAPTER 5

Socio-economic correlates of functional health literacy among patients of primary health care in Kosovo

ABSTRACT

Objectives
Functional health literacy (FHL) has been related to individual characteristics, ill health and disease knowledge. However, the information about FHL in Kosovo is very limited and thus the aim of this study was to assess the demographic and socioeconomic correlates of FHL among users of primary health care in Kosovo, a post-conflict country in the Western Balkans.

Study design
Cross-sectional study.

Methods
A cross-sectional study was conducted in Kosovo between November 2012-February 2013, including a representative sample of 1035 consecutive primary care users aged ≥18 years (60% females; overall mean age: 44.3±16.9 years; overall response rate: 86%). Test of Functional Health Literacy in Adults (TOFHLA) was used to assess FHL. General linear model and logistic regression were used to assess the association of TOFHLA score with demographic and socioeconomic characteristics.

Results
Overall, four out of five participants exhibited inadequate or marginal FHL in this Kosovo sample. FHL score was independently and inversely related to age, but positively associated with educational attainment and being other than unemployed.

Conclusions
Limited or marginal FHL was very common among primary care users in Kosovo and considerably higher than in the neighbouring Serbia. The low health literacy levels in Kosovo may provide an additional barrier towards achievement of health care goals. There is need to design and implement suitable and effective educational and health system interventions in the Kosovo context.

Keywords
Functional Health Literacy, Kosovo, Primary Health Care, TOFHLA.
INTRODUCTION

In general, health literacy entails the capacity to obtain, process and understand basic health information needed to make appropriate health decisions.\(^1\) Functional health literacy (FHL), in turn, is often deemed as one of the practical aspects of health literacy.\(^2\) It refers to basic reading, writing and computational skills which determine the ability of an individual to function effectively in health care settings.\(^3\)

A variety of instruments have been employed for measuring health literacy, in particular the FHL. Such tools include the Rapid Estimate of Adult Literacy in Medicine (REALM),\(^4\) the Test of Functional Health Literacy in Adults (TOFHLA)\(^5\) and the Newest Vital Sign (NVS).\(^6\)

Nevertheless, TOFHLA is probably the most frequently used instrument for measuring FHL. First described by Parker and colleagues,\(^5\) this test tries to quantify comprehension and numeracy skills required to accomplish various health tasks, usually in healthcare settings.\(^5,7-9\)

FHL has been shown to be linked with demographic and socioeconomic characteristics of individuals.\(^10-13\) Studies have reported significant associations of FHL with age,\(^10,12\) education,\(^10,13\) occupation\(^10\) and income.\(^11,13\) Conversely, limited or marginal FHL has been linked with worse or less favourable health outcomes or disease knowledge.\(^14\)

To date, FHL has not been sufficiently addressed in Western Balkan countries notwithstanding few reports from Serbia.\(^9,12\) Regarding the Albanian speaking countries, TOFHLA has been validated in a representative sample of 54 primary health care users in Pristina, the capital of Kosovo.\(^15\) However, information about the FHL levels and its correlation with demographic and socioeconomic factors in Kosovo remains scant. Kosovo, the newest country in Europe, is currently undergoing a difficult period of political and socioeconomic transition which is associated with negative health effects.\(^16,17\) In this context, the aim of this study was to assess the demographic and socioeconomic determinants of FHL among adult primary health care users in post-war Kosovo.

METHODS

A cross-sectional study was conducted in three regions of Kosovo (Pristine – the capital, Gjakove and Prizren) during November 2012-February 2013.

Kosovo comprises 37 municipalities and has a total population of 1739825 inhabitants.\(^18\) The three randomly selected municipalities of the current survey represent about 27% of the overall population of Kosovo. Each municipality in Kosovo has a primary health care centre referred to as Principal Family Medicine Centre (PFMC).\(^19\) Our study included the PFMCs of the three selected municipalities (Pristine, Gjakove and Prizren).
Overall, there were invited 1200 consecutive primary health care users (both sexes, aged ≥18 years) from the three selected regions of Kosovo to participate in this survey, based on sample size calculations related to different conservative assumptions about the association of demographic and socioeconomic characteristics with functional health literacy. Of the 1200 targeted individuals, 1035 agreed to participate in the study and were able to read and comprehend the information provided. On the other hand, 73 individuals were excluded because they were either too sick or unable to read and/or comprehend the information provided, whereas further 92 individuals refused to participate. Hence, the overall response rate was: 1035/1200=86.3%.

The long version of TOFHLA instrument, translated into the Albanian language, was used to assess FHL of primary health care users in Kosovo. The process of cross-cultural adaptation of TOFHLA instrument in Kosovo setting has been described elsewhere. Basically, the original English version of the TOFHLA instrument was translated into the Albanian language by experts following the standard methods of translation and cross-cultural adaptation of the questionnaires. Next, the questionnaire was administered to a sample of 54 primary care users in PFMC of Pristina. The Albanian version of TOFHLA showed good internal consistency (overall Cronbach’s alpha = 0.93). In our current survey, the overall internal consistency of the TOFHLA instrument was: Cronbach’s alpha = 0.88.

The score of the long version of TOFHLA ranges from 0 to 100, with higher scores implying more adequate FHL. In addition, TOFHLA scores were categorized into marginal (score 0-59), inadequate (60-74) and adequate (score 75-100) FHL.

Data about demographic and socioeconomic characteristics of study participants included age, sex, marital status, educational attainment, employment status, and self-perceived income level [measured on a scale ranging from one (very poor) to five (very good), which in the analysis was trichotomized into: poor, average, good].

The study was approved by the Ethical Board of the Ministry of Health of Kosovo. All individuals who agreed to participate in the survey signed an informed consent form prior to the interview.

General Linear Model (GLM) was used to assess the association of TOFHLA score with demographic and socioeconomic characteristics of study participants. Initially, age- and-sex adjusted mean values of TOFHLA score and their respective 95% confidence intervals (95%CIs) were calculated. Subsequently, multivariable-adjusted mean values of TOFHLA score and their respective 95%CIs were calculated.

Binary logistic regression was used to assess the association of TOFHLA (dichotomized into: adequate score vs. inadequate and marginal score) with demographic and socioeconomic characteristics. Firstly, age- and-sex adjusted odds ratios (ORs) of TOFHLA score and their respective 95%CIs were calculated. Next, multivariable-adjusted ORs of TOFHLA score and their respective 95%CIs were calculated.

Statistical Package for Social Sciences (SPSS), version 17.0, was used for the statistical analysis.
RESULTS

Mean age of study participants (60% women) was 44.3±17.0 years (range: 18-92 years) (data not shown). About 69% of individuals were currently married; 31% had a low educational level; 43% were unemployed, and; 14% reported a poor income level (Table 1).

In the overall sample, the prevalence of inadequate and marginal FHL was 43.8% and 36.8%, respectively. Only 19.4% of participants exhibited adequate FHL scores. The overall mean of TOFHLA score and the proportion of adequate TOFHLA score were both higher in men than in women. There was evidence of an inverse age gradient with younger participants (≤34 years) exhibiting the highest TOFHLA score compared with their older counterparts. Low-educated (0-8 years of formal schooling), unemployed and low-income individuals had both a lower mean TOFHLA score and a lower proportion of adequate TOFHLA score than the more educated (≥9 years), the employed/students/retired participants and higher income participants, respectively (Table 1).

Table 1. Distribution of TOFHLA scores by demographic and socioeconomic characteristics in a representative sample of primary health care users (≥18 years) in Kosovo in 2012-2013

<table>
<thead>
<tr>
<th>Socioeconomic characteristic</th>
<th>TOFHLA score Mean ± SD</th>
<th>TOFHLA score category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sample</td>
<td>61.81±14.82</td>
<td>453 (43.8)c</td>
<td>1035 (100.0)</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64.06±14.98</td>
<td>163 (36.0)c</td>
<td>414 (40.0)</td>
</tr>
<tr>
<td>Female</td>
<td>60.31±14.53</td>
<td>290 (64.0)</td>
<td>621 (60.0)</td>
</tr>
<tr>
<td>Age-group:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34 years</td>
<td>68.11±12.58</td>
<td>69 (15.2)c</td>
<td>341 (32.9)</td>
</tr>
<tr>
<td>35-44 years</td>
<td>61.18±15.75</td>
<td>81 (17.9)</td>
<td>177 (17.1)</td>
</tr>
<tr>
<td>45-54 years</td>
<td>62.21±13.25</td>
<td>98 (21.6)</td>
<td>220 (21.3)</td>
</tr>
<tr>
<td>55-64 years</td>
<td>57.92±13.96</td>
<td>102 (22.5)</td>
<td>169 (16.3)</td>
</tr>
<tr>
<td>≥65 years</td>
<td>50.31±14.09</td>
<td>103 (22.7)</td>
<td>128 (12.4)</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/divorced/widowed</td>
<td>63.90±15.06</td>
<td>109 (24.7)c</td>
<td>316 (31.5)</td>
</tr>
<tr>
<td>Married</td>
<td>60.78±14.71</td>
<td>333 (75.3)</td>
<td>688 (68.5)</td>
</tr>
<tr>
<td>Educational level:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥9 years</td>
<td>67.94±12.64</td>
<td>155 (39.3)c</td>
<td>661 (68.8)</td>
</tr>
<tr>
<td>0-8 years</td>
<td>51.52±10.97</td>
<td>239 (60.7)</td>
<td>300 (31.2)</td>
</tr>
<tr>
<td>Employment status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>66.09±14.99</td>
<td>163 (37.6)c</td>
<td>568 (56.7)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>56.43±13.06</td>
<td>270 (62.4)</td>
<td>433 (43.3)</td>
</tr>
<tr>
<td>Income level:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>63.48±16.19</td>
<td>31 (6.9)c</td>
<td>83 (8.1)</td>
</tr>
<tr>
<td>Average</td>
<td>62.80±14.86</td>
<td>314 (69.8)</td>
<td>800 (77.9)</td>
</tr>
<tr>
<td>Poor</td>
<td>55.26±12.19</td>
<td>105 (23.3)</td>
<td>144 (14.0)</td>
</tr>
</tbody>
</table>

a Range of functional health literacy score from 0 (least health literacy) to 100 (maximum health literacy); b Absolute numbers and row percentages (in parentheses). Discrepancies in the totals are due to missing covariate values; c Absolute numbers and column percentages (in parentheses). Discrepancies in the totals are due to missing covariate values.
In age-adjusted general linear models, mean TOFHLA score in men was significantly higher than in women (P<0.001) [Table 2]. There was evidence of an inverse linear trend of TOFHLA score with age (P<0.001). In age- and-sex adjusted models, mean TOFHLA scores were significantly lower among the less educated participants, the unemployed and those who were worse off (all P≤0.002). Conversely, there was no association with the marital status. In multivariable-adjusted models, mean TOFHLA scores were significantly lower among the oldest (≥65 years) individuals (overall P=0.004), the less educated participants and the unemployed (both P<0.001). Conversely, there was no marital status, or sex-difference, whereas the association with income level was inconsistent, but not significant though (Table 2).

Table 2. Association of the overall TOFHLA score with demographic and socioeconomic characteristics; multivariable-adjusted mean values from the general linear model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age- and sex adjusted models</th>
<th>Multivariable-adjusted models&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (95%CI)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>P</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>62.80 (61.43-64.17)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Female</td>
<td>58.02 (56.88-59.15)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Age-group:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34 years</td>
<td>68.16 (66.69-69.63)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>35-44 years</td>
<td>61.67 (59.62-63.71)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>45-54 years</td>
<td>62.72 (60.89-64.55)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>55-64 years</td>
<td>58.91 (56.77-61.05)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>≥65 years</td>
<td>50.58 (48.22-52.94)</td>
<td>reference</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/divorced/widowed</td>
<td>61.19 (59.33-63.07)</td>
<td>0.249</td>
</tr>
<tr>
<td>Married</td>
<td>59.87 (58.77-60.97)</td>
<td></td>
</tr>
<tr>
<td>Educational level:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥9 years</td>
<td>66.83 (65.70-67.95)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>0-8 years</td>
<td>51.99 (50.54-53.44)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Employment status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>64.08 (62.90-65.27)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Unemployed</td>
<td>55.37 (54.01-56.74)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Income level:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>61.17 (58.23-64.12)</td>
<td>0.015</td>
</tr>
<tr>
<td>Average</td>
<td>61.13 (60.09-62.16)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Poor</td>
<td>56.58 (54.35-58.81)</td>
<td>reference</td>
</tr>
</tbody>
</table>

<sup>a</sup> Range of functional health literacy score from 0 (least health literacy) to 100 (maximum health literacy).

<sup>b</sup> This model was simultaneously adjusted for all covariates presented in the table.

<sup>c</sup> Overall p-values and degrees of freedom (in parentheses).
In age-adjusted logistic models (Table 3), there was a positive association of adequate TOFHLA score with male gender (P<0.001). The odds of adequate TOFHLA score were significantly higher among younger participants compared with their older counterparts. In age- and sex-adjusted models, there was evidence of a positive and statistically significant association of adequate TOFHLA score with a higher educational attainment and current employment/student/retiree status (both P<0.001), and a higher income level (overall P=0.002), but no relationship with the marital status. In multivariable-adjusted logistic models, adequate TOFHLA score was positively related to male gender (P=0.04), a higher education and current employment/student/retiree status (both P<0.001), and a higher income level (overall P=0.002), but no relationship with the marital status. On the other hand, the associations of adequate TOFHLA score with age and income level were not statistically significant upon multivariable adjustment (Table 3).

### Table 3. Association of TOFHLA score with demographic and socioeconomic characteristics; multivariable-adjusted odds ratios (ORs) from binary logistic regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age- and-sex adjusted models</th>
<th>Multivariable-adjusted models</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>P</td>
</tr>
<tr>
<td><strong>Sex:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.94 (1.41-2.67)</td>
<td>1.45 (1.02-2.07)</td>
<td>0.041</td>
</tr>
<tr>
<td>Female</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
<tr>
<td><strong>Age-group:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-34 years</td>
<td>6.55 (3.07-13.97)</td>
<td>1.46 (0.59-3.75)</td>
<td>0.403</td>
</tr>
<tr>
<td>35-44 years</td>
<td>4.36 (1.95-9.75)</td>
<td>2.02 (0.77-5.33)</td>
<td>0.156</td>
</tr>
<tr>
<td>45-54 years</td>
<td>2.78 (1.24-6.26)</td>
<td>1.15 (0.43-3.04)</td>
<td>0.784</td>
</tr>
<tr>
<td>55-64 years</td>
<td>2.56 (1.10-5.96)</td>
<td>1.24 (0.78-1.98)</td>
<td>0.266</td>
</tr>
<tr>
<td>≥65 years</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/divorced/widowed</td>
<td>1.29 (0.84-1.97)</td>
<td>1.24 (0.78-1.98)</td>
<td>0.355</td>
</tr>
<tr>
<td>Married</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
<tr>
<td><strong>Educational level:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥9 years</td>
<td>20.84 (8.27-52.52)</td>
<td>13.03 (5.03-33.77)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>0-8 years</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment status:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.84 (3.14-7.44)</td>
<td>2.59 (1.62-4.13)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
<tr>
<td><strong>Income level:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>4.08 (1.79-9.32)</td>
<td>1.79 (0.72-4.42)</td>
<td>0.206</td>
</tr>
<tr>
<td>Average</td>
<td>3.02 (1.52-6.00)</td>
<td>1.46 (0.69-3.09)</td>
<td>0.318</td>
</tr>
<tr>
<td>Poor</td>
<td>1.00 (reference)</td>
<td>1.00 (reference)</td>
<td></td>
</tr>
</tbody>
</table>

a OR: adequate vs. inadequate and marginal TOFHLA scores.
b This model was simultaneously adjusted for all covariates presented in the table.
c Overall p-values and degrees of freedom (in parentheses).
DISCUSSION

This is the first study exploring the demographic and socioeconomic factors associated with FHL among users of general practice in Kosovo, using the validated long-version of TOFLHA instrument. Remarkably, four out of five individuals aged 18 years or older displayed inadequate or marginal FHL scores in this Kosovo sample. The findings of this study suggest that FHL score was independently and negatively related to age, but positively associated with educational attainment and not being unemployed. Alternatively, men, highly educated participants and those not unemployed were significantly more likely to have adequate FHL compared to their respective counterparts.

Low literacy has been reported as a common condition. For example, the 2003 National Assessment survey suggested that 36% of Americans aged 16 years or older (about 75 million) had below-basic or basic health literacy skills, whereas 24% of Australians 15 years or older had limited FHL. A review of 85 papers reported that 26% of participants surveyed had inadequate health literacy, measured by REALM, TOFHLA or other instruments. The European Health Literacy Survey (HLS-EU) conducted in 2011 in eight European countries reported that almost 48% of adults 15 years or older had limited health literacy levels.

Research issues related to health literacy go far beyond merely studying the magnitude of its spread in populations at large, or in health care settings. Thus, extensive scientific research has addressed the relationships of health literacy with health outcomes and health information. For instance, several studies among patients with chronic diseases reported that individuals with inadequate FHL had significantly less knowledge about their diseases compared to their highly literate counterparts. Among diabetic patients, FHL has been shown to be negatively associated with HbA1c levels indicating deterioration of disease control. Significant associations of inadequate FHL level with physical functions and mental health have been also reported. A population-based study reported that individuals with low FHL were 1.9, 2.2 and 3.9 times significantly more likely to have diabetes, heart disease and stroke, respectively, compared to those with adequate FHL. However, some studies did not find significant associations between FHL and health outcomes.

Even though different tools have been employed for measuring health literacy (REALM, TOFHLA, NVS, etc.), it has been shown that these instruments correlate with each other. For example, the correlation coefficients between combinations of tests were 0.84, 0.59 and 0.41 for TOFHLA-REALM, TOFHLA-NVS and REALM-NVS, respectively.

The international literature suggests that health literacy is associated with individual characteristics too. The association of health literacy with gender remains contradictory. Some studies suggest that being a female significantly increases the likelihood of adequate FHL, but a pooled analysis of 85 studies and a study from the region did not find a sex-association. Conversely, our study suggested that males were signifi-
cantly more likely to have adequate FHL, resembling an earlier study conducted in Kosovo which included a population-based representative sample of older people aged 65 years or older, 28 and another survey reporting unadjusted mean scores of FHL. 29 The disagreement with studies from other countries might be explained by the education phenomenon in Kosovo where there is a considerable gender-education gap, with significantly higher proportions of women having no formal schooling at any age compared to men. 17,30 This explanation may be appropriate given that education is shown to be consistently associated with health literacy, 7,8,11-13,28,29 as in our study. Also, the associations of FHL score with age and income were statistically significant in our survey, agreeing with results from other surveys, 7,8,10,12,28,29 Conversely, the association of adequate FHL with age was not significant mimicking the results of a prior study which did not find an association with age either. 13 The association of FHL with employment status was significant in our survey, similar to other reports 29,31 whereas a study from Serbia did not find such an association after controlling for a number of potential confounders. 12

This study enriches the literature by expanding the knowledge about correlates of FHL among primary health care users in Kosovo. The prevalence of limited and marginal FHL was considerably high in this sample of adults visiting general practice in a post-conflict country of the Western Balkans. About 81% of respondents in our study displayed limited or marginal FHL (44% and 37%, respectively) compared to 41% of 105 primary health care users in Serbia (22% and 19%, respectively) 12 and a lower prevalence reported elsewhere (about 50%). 8 The authors suggest that the post-conflict transitional environment coupled with a low educational attainment could play a role in the Kosovo context. The unique combination of the transitional period and the high rates of no education may explain the high prevalence of limited and marginal FHL in this sample of Kosovo adults.

Furthermore, the present survey adds to the body of literature valuable information about the demographic and socioeconomic correlates of FHL in Kosovo using the TOFHLA instrument, which has not been previously reported. In this study, interestingly, men and women had similar mean values of health literacy, whereas men exhibited significantly higher proportions of adequate scores compared to women. This finding indicates that the associations of gender and education with health literacy may be far more complex and that the similarity in the mean FHL levels is not reflected in adequate health literacy scores. Nonetheless, these aspects need to be further explored in future studies. Also, in this study, older people had lower mean scores of health literacy than their younger counterparts, notwithstanding the lack of statistical significance in terms of adequate versus inadequate and marginal TOFHLA scores.

Previous reports have not pointed to a significant relationship between health literacy and marital status, 32,33 similar to the findings of this. As a matter of fact, different studies have introduced marital status as an independent variable in various predictive
models and have mainly adjusted/controlled for its potential confounding effect, regardless of its lack of statistically significant relationship with health literacy.\textsuperscript{32-35}

This study has several limitations due to its cross-sectional design, such as selection bias and information bias. In order to avoid the issue of selection bias, we recruited consecutive primary health care users and the response rate in our study was satisfactory – factors which suggest a representative and well-covered sample. In any case, there were no statistically significant differences in the distribution of age, sex and education between respondents and non-respondents. The questionnaire employed in our study has been internationally validated and also cross-culturally adapted in the Kosovo context.\textsuperscript{15} However, health literacy may be a sensitive topic to explore and, therefore, we cannot rule out the possibility of information bias. From this point of view, differential reporting of selected health literacy items between different demographic and socioeconomic groups of participants cannot be entirely excluded in this study. Last but not least, relationships from cross-sectional studies are not assumed to be causal and, hence, replication of these findings in future prospective studies is required.

In summary, this study obtained valuable evidence on the demographic and socioeconomic correlates of health literacy among adult users of general practice in Kosovo, a post-war Albanian-speaking country in Western Balkans. In particular, this study suggests that low educational attainment and unemployment are significant predictors of limited health literacy levels. This, combined with the high prevalence of inadequate and marginal FHL among primary care users, may pose an additional barrier toward achieving of health care goals in this country. Nevertheless, further research is needed in order to elucidate the demographic and socioeconomic determinants of health literacy in Kosovo and other transitional settings.

The findings reported by the present survey may have implications for both patient education and policy and decision-makers in Kosovo. The high prevalence of limited functional health literacy, highlighted by this survey, together with high unemployment, lack of formal education and gender-education gap rates\textsuperscript{17,30} suggest that efforts to improve individual education level and to simplify the health care system and the way health information is conveyed\textsuperscript{36,37} are essential for the achievement of the quality of health encounter and for health care goals to succeed in this country. Therefore, there is an evident need for policymakers and decision-makers to design and implement suitable and effective educational and health system interventions adapted to the Kosovo context.

AUTHOR STATEMENTS

ET and GB contributed to the study conceptualization and design, analysis and interpretation of the data and writing of the article. HK and NJ contributed to the acquisition of the data, analysis and interpretation of the data and commented on the manuscript. KS
and HB commented comprehensively on the manuscript. All authors have read and approved the submitted manuscript.

Acknowledgments
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Ethical approval
Ethical Board of the Ministry of Health of Kosovo.

Funding
None.

Competing interests
None declared.
REFERENCES

CHAPTER 6

Concurrent validation of two key health literacy instruments in a South Eastern European population

ABSTRACT

Background
Public health practice has come to increasing recognition of health promotion and the central role of knowledge, attitude, beliefs and practices (KABP) in achieving health promotion. Health literacy (HL) is an under-explored topic in South Eastern European countries. There are no HL reports from Albania to date. The aim of this study was to assess the concurrent validity of the European Health Literacy Survey Questionnaire (HLS-EU-Q) and the Test of Functional Health Literacy in Adults (TOFHLA) in a population-based sample of adults in Albania.

Methods
A cross-sectional study was conducted in 2013 in Tirana, Albania, including 239 individuals aged ≥18 years (61% women; 87% response). A structured interviewer-administered questionnaire was applied twice (test and retest procedure after two weeks) including HLS-EU-Q and TOFHLA instruments.

Results
The internal consistency was high for both instruments (Cronbach’s alpha for the test procedure was 0.92 for TOFHLA and 0.98 for HLS-EU-Q). Both tools exhibited a high stability over time (Spearman’s rho: 0.88 for TOFHLA and 0.87 for HLS-EU). Mean values of both instruments were similar in men and women (mean score for TOFHLA: 76.0 vs. 76.5, P=0.83; mean score for HLS-EU-Q: 32.2 vs. 32.6, P=0.63). For both instruments, higher health literacy (HL) scores were significantly associated with younger age, higher educational and economic level and lower BMI.

Conclusions
Our study provides valuable novel evidence on concurrent validation of two major HL instruments in a South Eastern European population-based sample. Future studies should be conducted in order to confirm and expand our findings.

Keywords
Albania, European Health Literacy Survey Questionnaire (HLS-EU-Q), Health Literacy, South Eastern Europe, Test Of Functional Health Literacy In Adults (TOFHLA), Validation Study.
INTRODUCTION

Health Literacy (HL) consists of oral literacy (speaking and listening), print literacy (reading and writing) and numeracy skills which, in the context of cultural and conceptual knowledge, determine one’s health decisions.\(^1\) Print literacy and numeracy skills are the most studied dimensions of HL,\(^1\) probably because they are easier to be measured.

Various instruments have been used to assess health literacy including the Test of Functional Health Literacy in Adults (TOFHLA),\(^2\) the Rapid Estimate of Adult Literacy in Medicine (REALM),\(^3\) the Wide Range Achievement Test (WRAT)\(^4\) and the Newest Vital Sign (NVS),\(^5\) mainly used in health care settings. Among these tools, TOFHLA and NVS measure both reading and numeracy skills, whereas REALM and WRAT measure reading ability. The most widely used HL instruments are TOFHLA and REALM.\(^6\) Hence, in a review of 85 studies measuring HL, TOFHLA was used in 42 (49%) studies, REALM in 34 (40%) studies, WRAT in 3 (4%) studies and NVS only in 1 study.\(^6\)

TOFHLA instrument consists of two parts. The first part assesses the numeracy skills and is limited to 10 minutes, whereas the second part assesses reading comprehension skills and consists of a number of sentences with missing words which the respondents are required to replace choosing from four given alternatives within 12 minutes.\(^2\)

Other HL instruments, which have been used in population-based settings, have tried to capture broader dimensions of health literacy. These include the National Assessment of Adult Literacy survey (NAAL),\(^7\) the Swiss Health Literacy Survey\(^8\) and the Health Literacy Questionnaire.\(^9\)

The overwhelming research on HL has been conducted in USA and Canada.\(^10,11\) In Europe, HL has been a central issue only recently.\(^11,12\) The fact that there is no conclusive comprehensive definition of HL has been a motivation to efforts for finding one. To this goal, the European Health Literacy Survey Questionnaire (HLS-EU-Q) was developed in the framework of the European Health Literacy Survey.\(^12\) The HLS-EU-Q comprises a list of 47 items exploring the ability to obtain, understand, appraise and apply health information in the domain of health care, disease prevention and health promotion.\(^21\) The HLS-EU-Q was applied together with the NVS and the correlation between the two instruments has been weak to moderate.\(^13\) Other surveys report different correlation levels between TOFHLA, REALM and NVS instruments applied in health care settings\(^2,5,14\) and population settings.\(^15\)

To date, however, there are no reports on simultaneous application of HLS-EU-Q and TOFHLA in population-based samples. Seemingly, such a procedure is rather important given the controversy regarding the results obtained by application of different HL instruments. In this framework, the aim of this study was to assess the concurrent validity of HLS-EU-Q and TOFHLA in a population-based sample of adults in Albania, a transitional country in South Eastern Europe. More specifically, we aimed to determine the correlation between the two instruments and the association of HL with demographic and socioeconomic factors among the Albanian adults.
METHODS

Study population

A cross-sectional study was conducted in urban Tirana during September-December 2013.

In the first stage, a primary health care centre (serving 61,806 population) was randomly selected (with probability proportional to size) in Tirana municipality (overall: 763,634 inhabitants), the capital of Albania. Subsequently, a simple random sample of 274 individuals aged ≥18 years was drawn based on the (population-based) list of inhabitants (sampling frame) available from the registries of family physicians working at the primary health care centre selected in the first stage. Calculations of the minimal required sample size were done with Win-Pepi. Of 274 individuals targeted for recruitment, 35 could not be contacted and/or refused to participate. Overall, 239 individuals participated in this validation study with a response rate of 239/274=87%. Non-respondents did not differ from survey participants in terms of age, sex or educational level.

Data collection

A structured interviewer-administered questionnaire was used to assess HL level of the respondents. The questionnaire consisted of three parts: part 1 – general demographic and socioeconomic information, part 2 – HL questionnaire based on HLS-EU-Q instrument, and part 3 – HL questionnaire based on the TOFHLA instrument.

The original full-version of HLS-EU questionnaire was translated from English into Albanian language and then back-translated into English in order to check whether the translation was accomplished properly. The translated version of the HLS-EU questionnaire was piloted (pre-tested) in 12 individuals (seven primary care users and five family members accompanying the primary care patients) to assess whether the items were understandable. The TOFHLA instrument was already translated, back-translated and validated among 54 primary care patients in another Albanian-speaking country, namely in Kosovo. However, because of the changing of currency and health insurance system used in Kosovo and Albania, a panel of experts was invited to agree on the adaptation of the corresponding items of TOFHLA questionnaire in the Albanian context. Subsequently, the final (Albanian) versions of HLS-EU-Q and TOFHLA were administered to 239 individuals who agreed to participate in this study.

The HLS-EU questionnaire consisted of 47 items which explored four dimensions of health literacy: access, understanding, appraisal and application of health information in three different domains: health care (16 items), disease prevention (16 items) and health promotion (15 items). Each item consisted of a 4-point scale (very easy, easy, difficult, and very difficult) for measuring the self-perceived difficulty of selected health
tasks.\textsuperscript{13} An overall HL score (overall index, or general HL), as well as sub-domain scores, were calculated for each participant. The scores of each question were reversed in order for the higher scores to indicate better HL. Each score was then standardized on a scale ranging from 0 to 50, in accordance with the suggestions of the developers of the instrument.\textsuperscript{13} The scores for general HL, health care HL, disease prevention HL and health promotion HL were categorized into “inadequate HL: score 0-25”, “problematic HL”: score 25.01-33, “sufficient HL”: score 33.01-42, and “excellent HL: score 42.01-50”\textsuperscript{13}. The first two categories in this scale are used to denote subjects with limited HL (inadequate + problematic).

The long Albanian version of TOFHLA instrument consisted of 67 items, 17 of which explored the numeric skills and the remaining 50 items the reading comprehension skills.\textsuperscript{2} Further details about the validated Albanian version of TOFHLA are provided elsewhere.\textsuperscript{17} The overall TOFHLA score was categorized into the following groups: inadequate (0-59), marginal (60-74) and adequate HL (75-100), in accordance with instrument developers’ suggestions and current practice.\textsuperscript{17,18}

The general background information included data about age (categorized into: ≤25 years, 26-45 years, 46-65 years and ≥66 years), sex, education (categorized into: 0-8 years, 9-12 years, 13-16 years and ≥17 years), body mass index (BMI) (categorized into: 18.5-24.99 [normal], 25.00-29.99 [overweight], and ≥30.00 [obese]) and economic status of the respondents (upon question: “How would you assess your current economic status”, with answering options on a 5-point Likert scale ranging from “very bad” to “very good”; this variable was further trichotomized into: “very bad, or bad”, “average”, and “good, or very good”). BMI was calculated based on the height and weight, which were measured through a standardized procedure (removal of heavy clothes, shoes and heavy objects from the pockets).

The HL questionnaires were administered to each participant twice: on the first encounter (test procedure) and subsequently after two weeks (retest procedure). However, 53 individuals refused to participate in the retest procedure. Therefore, the retest procedure included 186 participants only.

Participants were approached by the nurses of the health centre where the study took place. Hence, the nurses invited all individuals targeted for recruitment and explained them the aims and procedures of the study. Each individual who agreed to participate in the study signed an informed consent form. The study was approved by the Committee of Bio-Medical Ethics of Albania.

\textit{Statistical analysis}

Cronbach’s alpha test was used to assess the internal consistency of HLS-EU-Q and TOFHLA questionnaires. More specifically, Cronbach’s alpha index was used for the overall scales and for the sub-domains of each instrument (numeracy and reading com-
prehension for TOFHLA and health care HL, disease prevention HL and health promotion HL for the HLS-EU-Q instrument).

To assess the stability over time (alias test-retest reliability) of the instruments, we applied Spearman’s rho, a measure of linear association.

General linear model was used to compare the mean values of independent variables such as age, education, BMI and economic status, by different categories of HL as measured by HLS-EU-Q and TOFHLA instruments, separately. Mean values and their respective 95% confidence intervals (95% CI) were calculated.

Binary logistic regression was used to assess the association of limited HL, based on HLS-EU-Q and TOFHLA instruments, with independent variables. For this analysis, we recoded the general HLS-EU-Q score into inadequate general HL (inadequate + problematic general HL) versus adequate general HL (sufficient + excellent general HL). Regarding the TOFHLA instrument, we recoded its score into inadequate functional HL (inadequate + marginal) versus adequate functional HL. This enabled calculation of the odds ratios (ORs) of limited HL according to selected independent factors.

SPSS (Statistical Package for Social Sciences, version 17.0), was used for all the statistical analyses.

RESULTS

Characteristics of the study population (not shown in the tables)

Mean age of the sample (men: N=92 [38.5%]; women: N=147 [61.5%]) was 42.90±17.69 years. About 11% of participants had 0-8 years of formal education, 32% had 9-12 years, 40% had 13-16 years and the remaining 17% had ≥17 years of formal education. About 10% of individuals reported a “bad, or very bad” economic situation, whereas 55% and 35% had “average” and “good, or very good” economic situation, respectively. As for the BMI, 51% of participants had normal weight, 30% were overweight, whereas 19% were obese.

Internal consistency of HL instruments

The internal consistency was high for both instruments: overall Cronbach’s alpha for the test procedure was 0.92 for TOFHLA and 0.98 for HLS-EU-Q. A similar strength of Cronbach’s alpha was evident for the retest procedure. As for the TOFHLA’s subscales, reading comprehension exhibited a higher internal consistency (0.94 for the test) compared with the numeracy domain (0.81). Conversely, the HLS-EU-Q subscales showed similar internal consistencies for the test procedure (data not shown in tables).
Stability over time of HL instruments (Table 1)

Overall, both TOFHLA and HLS-EU-Q exhibited a high stability over time: the test-retest reliability coefficient (Spearman’s rho) was 0.88 for TOFHLA and 0.87 for HLS-EU-Q. As for the TOFHLA’s subscales, the numeracy domain had a high test-retest reliability (r=0.82), whereas the reading comprehension had a much lower stability over time (r=0.64) notwithstanding the highly statistical significance. On the other hand, all the three HLS-EU-Q’s subscales displayed a high test-retest reliability score (0.83 for health care and 0.81 for disease prevention and health promotion subscales).

<table>
<thead>
<tr>
<th>Domain (subscale)</th>
<th>Spearman’s rho</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOFHLA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOFHLA (overall)</td>
<td>0.868</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Numeracy</td>
<td>0.820</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>0.638</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HLS-EU-Q</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General HL</td>
<td>0.884</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Health Care HL</td>
<td>0.827</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Disease Prevention HL</td>
<td>0.815</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Health Promotion HL</td>
<td>0.812</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Construct validity of HL instruments

Overall, mean (±SD) value of TOFHLA was 76.32±16.96 [median (interquartile range): 80.00 (68.00-90.00)]. Conversely, mean (±SD) value of general HLS-EU-Q was 32.81±10.30 [median (interquartile range): 34.04 (26.60-41.49)] (data not shown in the tables).

The overall TOFHLA score and HLS-EU-Q score exhibited a weak-to-moderate inverse association with age and BMI, but a positive relationship with educational attainment and economic status. No significant associations with sex were noticed (Table 2).

Mean values of both instruments were similar in men and women (mean score for TOFHLA: 76.0 vs. 76.5, P=0.83; mean score for HLS-EU-Q: 32.2 vs. 32.6, P=0.63). Furthermore, there were no sex-differences in the proportions of HL categories either for TOFHLA or for HLS-EU-Q. Correlation of TOFHLA scores and HLS-EU-Q scores was moderate (Spearman’s rho=0.493) [data not shown in the tables].

For both instruments, participants who exhibited higher HL scores were significantly younger than their counterparts who displayed lower HL scores (Table 3). Furthermore, individuals who reported a higher TOFHLA and/or HLS-EU-Q score had a higher educational level and economic status, but a lower BMI.
In addition, for both instruments, participants who exhibited limited HL scores were significantly older, had a lower educational level and economic status, but a higher BMI (Table 4). On the other hand, there were no sex-differences.

**Table 2.** Spearman’s correlation coefficients between health literacy indices and socio-demographic variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>TOFHLA instrument</th>
<th>HLS-EU instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GEN-HL</td>
<td>HC-HL</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.015</td>
<td>-0.034</td>
</tr>
<tr>
<td>Male</td>
<td>0.015</td>
<td>-0.034</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;0.001 (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-45 years</td>
<td>0.537*</td>
<td>0.377*</td>
</tr>
<tr>
<td>46-65 years</td>
<td>0.229*</td>
<td>0.292*</td>
</tr>
<tr>
<td>≥66 years</td>
<td>0.234*</td>
<td>0.259*</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥17 years</td>
<td>2.88</td>
<td>2.07</td>
</tr>
<tr>
<td>13-16 years</td>
<td>4.00</td>
<td>12.7</td>
</tr>
<tr>
<td>9-12 years</td>
<td>6.45</td>
<td>1.58</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good or very good</td>
<td>1.70</td>
<td>0.97</td>
</tr>
<tr>
<td>Average</td>
<td>7.97</td>
<td>2.48</td>
</tr>
<tr>
<td>Very bad or bad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>2.06</td>
<td>1.14</td>
</tr>
<tr>
<td>Obese</td>
<td>2.28</td>
<td>1.13</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).
† Higher values indicate better economic status (range of scores was from 1 [very bad] to 5 [very good]).

**Table 4.** Association of limited HL based on HLS-EU-Q and TOFHLA instruments with covariates; odds ratios (OR) from binary logistic regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>HLS-EU-Q</th>
<th>TOFHLA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR 95% CI</td>
<td>P</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Reference</td>
<td>-</td>
</tr>
<tr>
<td>Male</td>
<td>1.07</td>
<td>0.45-1.27</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25 years</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>26-45 years</td>
<td>0.56</td>
<td>0.27-1.16</td>
</tr>
<tr>
<td>46-65 years</td>
<td>1.17</td>
<td>0.61-2.28</td>
</tr>
<tr>
<td>≥66 years</td>
<td>3.20</td>
<td>2.85-12.24</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥17 years</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>13-16 years</td>
<td>2.88</td>
<td>2.07</td>
</tr>
<tr>
<td>9-12 years</td>
<td>4.00</td>
<td>12.7</td>
</tr>
<tr>
<td>0-8 years</td>
<td>6.45</td>
<td>1.58</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good or very good</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>1.70</td>
<td>0.97</td>
</tr>
<tr>
<td>Very bad or bad</td>
<td>7.97</td>
<td>2.48</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>2.06</td>
<td>1.14</td>
</tr>
<tr>
<td>Obese</td>
<td>2.28</td>
<td>1.13</td>
</tr>
</tbody>
</table>

* For HLS-EU-Q, the odds ratios (ORs): limited HL (inadequate + problematic) vs. adequate HL (sufficient + excellent).
† For TOFHLA, the odds ratios (ORs): limited FHL (inadequate + marginal) vs. adequate FHL.
Table 3. Association of HLS-EU-Q and TOFHLA scores with socio-economic variables; mean values from the general linear model

### Upper panel: HLS-EU-Q instrument

<table>
<thead>
<tr>
<th>HL level</th>
<th>Age</th>
<th>Education</th>
<th>Economic status</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>P</td>
<td>Mean (95% CI)</td>
<td>Mean (95% CI)</td>
</tr>
<tr>
<td>General HL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate</td>
<td>59.3</td>
<td>&lt;0.001</td>
<td>8.9 (8.3-9.5)</td>
<td>3.0 (2.8-3.2)</td>
</tr>
<tr>
<td>Problematic</td>
<td>38.7</td>
<td>0.739</td>
<td>12.5 (12.0-12.9)</td>
<td>3.1 (2.9-3.3)</td>
</tr>
<tr>
<td>Sufficient</td>
<td>34.5</td>
<td>0.678</td>
<td>15.2 (14.7-15.7)</td>
<td>3.4 (3.3-3.6)</td>
</tr>
<tr>
<td>Excellent</td>
<td>39.7</td>
<td>0.001 (3)</td>
<td>17.4 (16.8-17.9)</td>
<td>3.5 (3.3-3.7)</td>
</tr>
</tbody>
</table>

### Lower panel: TOFHLA instrument

<table>
<thead>
<tr>
<th>HL level</th>
<th>Age</th>
<th>Education</th>
<th>Economic status</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>P</td>
<td>Mean (95% CI)</td>
<td>Mean (95% CI)</td>
</tr>
<tr>
<td>Inadequate</td>
<td>61.0</td>
<td>&lt;0.001</td>
<td>9.3 (8.4-10.2)</td>
<td>2.9 (2.7-3.1)</td>
</tr>
<tr>
<td>Marginal</td>
<td>47.3</td>
<td>&lt;0.001</td>
<td>12.4 (11.7-13.1)</td>
<td>3.2 (3.0-3.4)</td>
</tr>
<tr>
<td>Adequate</td>
<td>35.9</td>
<td>0.001 (2)</td>
<td>15.4 (14.9-15.8)</td>
<td>3.5 (3.3-3.6)</td>
</tr>
</tbody>
</table>

* Overall p-values and degrees of freedom (in parentheses).
DISCUSSION

Main findings

This is the first study conducted in a sample of adults aged 18 years or older in Tirana, Albania, which measures HL as assessed by TOFHLA and HLS-EU-Q instruments concurrently with the aim to validate these two HL tools in Albanian settings.

TOFHLA is an internationally used instrument for measuring numeracy and reading comprehension skills in clinical settings, whereas HLS-EU-Q was developed to capture broader aspects of HL in population settings.

The results of our study revealed that both instruments exhibit good internal consistency and stability over time in both the test and the retest applications. Convergent validity was moderate (Spearman’s rho=0.493) whereas measures of construct validity suggested that older age, lower education, higher BMI and lower economic status were significantly associated with limited HL as assessed by both instruments in this population-based sample of Albanian adults.

Measures of validity of HL instruments in other countries and in Albania

Measures of reliability in our study are in line with previous research from the region and beyond. Hence, Cronbach’s alpha for the Serbian version of TOFHLA was 0.94 and for the Albanian version of TOFHLA applied in a sample of primary care users in Kosovo it was 0.93. The original version of TOFHLA had an internal consistency of 0.98.

The test-retest reliability of TOFHLA and HLS-EU-Q in our study was satisfactory [r=0.884 and 0.868, respectively]. The internal consistency of HLS-EU-Q in our study is comparable to that reported by the HLS-EU survey.

In our study we found a moderate correlation between TOFHLA and general HLS-EU-Q scores (Spearman’s rho=0.493). The HLS-EU survey, which applied the NVS instrument concurrently with HLS-EU-Q instrument, found a moderate agreement between these HL tools (Spearman’s rho=0.25), with considerable variations across countries (ranging from 0.34 in Bulgaria to 0.07 in the Netherlands). The authors suggested that the different focus of the two instruments was responsible for this moderate correlation between NVS and HLS-EU-Q. As described earlier, NVS assesses numeracy and reading comprehension skills, but a person’s HL level is also dependent on a wide range of social, cultural and health system factors, which differ greatly across eight countries under study. Therefore, the authors expected only moderate correlations between the two instruments. Both TOFHLA and NVS measure functional health literacy and they have shown to be moderately correlated. Given that HLS-EU-Q is a newly developed and applied instrument, it is difficult to explain the discrepancies between the results of our study and HLS-EU survey regarding the correlation with other HL instruments measuring functional health literacy (TOFHLA in our study and NVS in HLS-EU survey).
Discrepancies between the results yielded by different tools measuring HL in same populations are common.\textsuperscript{5,14,15} For example, a study among 310 individuals selected in community settings in Australia used REALM, TOFHLA and NVS to assess the HL levels.\textsuperscript{15} The prevalence of limited HL was 10.6\%, 6.8\% and 26.0\%, respectively.\textsuperscript{15} Obviously, instruments trying to measure HL differ in the dimensions of HL they tackle and, because different individuals have different skills in numeracy, reading and/or comprehensions abilities, then the tests yield very different results. In our opinion, these findings once more highlight the fact that there is still no accepted definition for the term “HL” and, therefore, unless a comprehensive, globally accepted HL definition comes across, it is very likely that we will face the same situation in the future.

Both HL instruments in our study showed good predictive validity. Previous research has shown that HL is significantly associated with age,\textsuperscript{10,11,13,19} education,\textsuperscript{10,11,13,15} BMI\textsuperscript{20-22} and socioeconomic status,\textsuperscript{10,13,11,13,14} whereas the association with gender is not straightforward as some studies did not find an association,\textsuperscript{10,13,19} whereas some other studies did so.\textsuperscript{23-26} Similar to previous studies, we found that HL as measured by either HLS-EU-Q or TOFHLA was significantly associated with age, education, BMI, and economic status.

\textit{Study limitations}

Our study has several limitations. Its cross-sectional design does not allow drawing conclusions about the temporality of events. In addition, since the study relied on self-perceived items, such as “the self-perceived socioeconomic status”, the information bias cannot be entirely excluded. However, the literature suggests that subjective social status might be a reflection of the objective social status.\textsuperscript{27} Furthermore, there is always the risk that the respondents might have memorized the items on the first application of HL tools and, as a result, this might have had an impact on the retest results, a phenomenon known as the “practice effects” which becomes less important when the test-retest interval increases.\textsuperscript{28} However, the test-retest interval was rather adequate (two-weeks), in line with the recommended methodology on similar reapplication procedures.\textsuperscript{28}

\textbf{CONCLUSIONS}

Our findings revealed that the Albanian versions of TOFHLA and HLS-EU-Q are reliable and valid instruments for measuring HL in large scale population-based studies. Both instruments showed good internal consistency, test-retest reliability, construct validity and convergent validity.

These two instruments might be particularly useful in health promotion activities by revealing high-risk groups at a population level in terms of lifestyle determinants of ill-
health including smoking, unhealthy diet, physical inactivity and hypertension. However, health care providers should be aware of the fact that identifying and intervening in people with risk factors tends to benefit the more socioeconomic advantaged groups, because they have the agency required to engage and participate in health promotion programs. Therefore, health care professionals and health promotion specialists should make particular efforts to improve the socioeconomic disadvantaged, because they most commonly endure most of the disease burden.

In conclusion, our study provides valuable novel evidence on concurrent validation of two major HL instruments in a South Eastern European population-based sample. Future studies should be conducted in order to confirm and expand our findings.

Conflicts of interest
None declared.

KEY POINTS

- This survey aimed to concurrently validate TOFHLA and HLS-EU-Q, two major international instruments for assessing health literacy, for the first time in Albanian settings.

- The Albanian versions of both instruments exhibited good internal consistency and stability over time as measured by the test-retest procedure.

- Similar to international findings, older age, lower education and economic status and higher BMI were significantly associated with lower HL scores and/or higher likelihood of limited HL in this population-based sample of Albanian adults.

- The HLS-EU-Q and TOFHLA instruments, validated in Albanian, could be used in future large-scale studies in order to explore the concept of health literacy and its correlates in this South Eastern European country.
REFERENCES

CHAPTER 7

Health literacy in a population-based sample of adult men and women in a South Eastern European country

ABSTRACT

Background
Health literacy may be an important determinant of health, but this concept is largely under-researched in Albania, a transitional country in the Western Balkans which is currently undergoing major political and socioeconomic changes. We aimed to assess the socio-demographic distribution of health literacy in this transitional South Eastern European country aspiring to join the European Union.

Methods
A cross-sectional study was conducted in urban Tirana, the capital of Albania, during September 2012–February 2014 including a representative population-based sample of 1154 adult individuals aged ≥18 years (57% women; 89% response). Health literacy was assessed using the full version (47 items) of the “Health Literacy Survey – European Union Questionnaire”. Spearman’s correlation coefficients were used to assess the linear associations between health literacy indexes with demographic and socioeconomic correlates of study participants.

Results
Overall health literacy was significantly higher among younger, highly educated and better-off participants. Conversely, no significant differences were noticed regarding sex, employment status or marital status of respondents.

Conclusions
Socio-demographic correlates of health literacy among Albanian adults showed similar trends with those observed in other former communist countries of Europe. Current findings may help policymakers tailor accordingly future interventions and programs to improve health status of Albanian citizens.

Keywords
Albania, disease prevention, health literacy, health promotion, survey.
INTRODUCTION

A recent comment analyzed the effects of European Union’s (EU) “health mandate”, suggesting that EU’s health agenda and health protection goals should be a priority for the improvement of the health for the citizens of the old continent. They urged for a greater focus on health across all policies and the need for EU policies to be informed by scientific, timely and comparable data, including information on health literacy (HL). In this context, any research that brings new evidence about HL across European countries would, in theory, contribute towards evidence-based decision-making with the final aim of improving the public health in Europe. This is especially true for the South-Eastern European (SEE) countries. Recent efforts to shed light upon HL and its determinants in these countries are a reflection of the European perspectives and policy agenda oriented to improve the overall wellbeing of its citizens.

HL - the ability to obtain, process, understand and translate (apply) the basic health information into appropriate health decisions – is an essential determinant of health. HL is dependent on complex relations between individual’s literacy and numeracy skills with the contextual social and cultural system. According to Nutbeam, health literacy could be regarded as both a “risk factor” and an “asset” to build upon. The “risk” approach implies efforts to support low HL individuals whereas the “asset” approach offers a wide range of activities which enable individuals to gain greater control over health-related factors.

In the era of formidable technological progress and real-time information sharing and exchange, the population relies more on the health system rather than on themselves in order to manage health. Current health systems are designed on the assumption that its users have adequate HL levels, which is even more crucial in a highly technological health system. However, inadequate or limited HL is rather a common condition, especially among older people and the least educated and affecting up to 50% of studied populations. People with inadequate health literacy will most likely experience a wide range of adverse health outcomes and they will cost a fortune to the health system as well, especially in the perspectives of aging populations and increasing burden of chronic conditions which imply higher HL demands and skills.

HL has relatively recently been a central item in the European agenda as compared to USA and Canada.

In SEE countries the HL concept is addressed even less, both in terms of breadth and depth. As regards breadth, evidence about HL in this region is starting to pour mainly from Serbia and Kosovo. Whereas regarding the depth, there exist multiple instruments for measuring HL such as the Rapid Estimate of Adult Literacy in Medicine (REALM), the Test of Functional Health Literacy in Adults (TOFHLA), the Newest Vital Sign (NVS) and the recently introduced European Health Literacy Survey Questionnaire (HLS-EU-Q) which was developed in the framework of a large project supported by the EU. The main instrument used for measuring HL in Serbia and Kosovo is TOFHLA, both
the long and short version in Serbia and Kosovo. In Kosovo, besides TOFHLA, another tool for measuring HL, a preliminary version of the HLS-EU-Q, has been used in order to explore the factors associated with it among people aged 65 years and over. There are no HL reports from other ex-communist countries of the SEE region.

Albania was granted the status of candidate country for the European Union (EU) in June 2014. The candidate status implies that certain requirements have to be fulfilled. These criteria are known as EU’s 35 acquis communautaire chapters, and include almost all key economic, political, social and health aspects. Of these chapters, chapter 19 (social policy and employment) and chapter 28 (consumer and health protection) most directly relate to public health. The European Commission, which monitors the fulfillment of accession criteria, in the 2013 Albania Progress Report stated that “equal access to healthcare in rural areas is not ensured, especially for the most vulnerable groups and that despite education and promotion programs child malnutrition is still of particular concern.” Under these circumstances, measuring HL in Albania might facilitate the tailoring of public health and health care services to the patients’ needs and therefore would contribute further towards the building of a health system which would appropriately fulfill the needs of the population. In this context, the aim of our study was to assess the distribution of HL in a population-based sample of adults in Tirana, Albania, using a validated instrument.

METHODS

Study population

A cross-sectional survey was conducted in urban Tirana, the capital of Albania, during September 2012 – February 2014. A population-based simple random sample of 1500 individuals aged ≥18 years was drawn based on the list of inhabitants (sampling frame) available from the registries of family physicians working in primary health care centers (polyclinics) of Tirana municipality. Calculations of the sample size were made by use of WIN-PEPI for different hypotheses related to the distribution of HL scores by sociodemographic and socioeconomic characteristics of study participants.

In Tirana, there are ten health centers and three polyclinics of different specialties providing health care services to the urban population. We selected randomly (with probability proportional to size) three health centers (health center number one, three and nine) and one polyclinic (polyclinic number three) which cover different parts of the city. Within each selected health center or polyclinic, a family physician (or a specialized doctor) was selected randomly and 375 individuals were then randomly chosen from the list of individuals aged ≥18 years of each selected physician. Of the initial 1500 targeted individuals (four physicians times 375 individuals each), 198 of them could not be
interviewed because they had changed their residence (n=97), had moved abroad (n=68), or had died (n=33). This yielded a total of 1302 eligible individuals. Of these, 148 individuals refused to participate. Therefore, overall, 1154 individuals participated in the study, with a final response rate of 88.6% (1154/1302). Nevertheless, assuming that individuals who could not be contacted were all eligible (n=198), the response rate would be: 1154/1500=77%.

Data collection

A structured face-to-face interview was employed in order to collect data on HL and socio-demographic characteristics of respondents. HL was assessed using the original full version of the HLS-EU-Q instrument,8 which was previously validated in Albania in the framework of a population-based study conducted in Tirana in April-July 2012.25 The HLS-EU-Q was translated and subsequently back-translated following standard procedures.

The full version of HLS-EU-Q contained 47 items referring to different HL dimensions namely access, understanding, appraisal and application of health information in the context of three specific domains: health care (16 items), disease prevention (16 items) and health promotion (15 items).8 Socio-demographic and socioeconomic characteristics included age, sex, education, employment status, marital status, and social and economic status of participants.

All participants signed an informed consent form after being explained the aims and procedures of the survey. The study was approved by the Committee of Bio-Medical Ethics of Albania.

Statistical analysis

Regarding HL questions, each item measured the self-perceived difficulty of performing selected health related tasks on a 4-point scale ranging from very easy (one) to very difficult (four).8 The items’ coding was reversed so that higher scores would indicate better health literacy.8 Then, for each domain a summary score was calculated based on scores of respective items, and a general health index (comprising of scores of all 47 items) was computed as well. Subsequently, the four resulting figures (general HL index, health care HL, disease prevention HL and health promotion HL) were then standardized on a scale ranging from 0 to 50 in accordance with suggestions of instrument developers.8

Spearman’s correlation coefficients were used to assess the linear association of HL indexes with independent numerical variables. SPSS (Statistical Package for Social Sciences, version 15.0), was used for all the statistical analyses.
RESULTS

Mean age of participants was 45.5±16.4 years with no statistically significant difference between men and women (Table 1). About 73% of subjects belonged to the 26-65 years old age-group whereas about one in ten participants were either 25 years old or younger or 66 years or older (15.3% and 12.1%, respectively). The distribution of men and women by age-groups was similar (Table 1). On average each subject had completed 12.5 years of formal education (Table 1). The vast majority of subjects reported an average social class (82.5%) and about one third of individuals had average economic status (63.6%). Except for marital status, there were no sex-differences in the distribution of education, employment, social and economic status of participants (Table 1).

Table 1. Health literacy level in a population-based sample of adults in a South Eastern European population

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (N=1154)</th>
<th>Sex</th>
<th>P-value a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td>45.52±16.37 b</td>
<td>45.98±16.76</td>
<td>45.17±16.07</td>
</tr>
<tr>
<td>Age-group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤25 years</td>
<td>176 (15.3) c</td>
<td>74 (14.8)</td>
<td>102 (15.6)</td>
</tr>
<tr>
<td>26-45 years</td>
<td>353 (30.6)</td>
<td>144 (28.7)</td>
<td>209 (32.0)</td>
</tr>
<tr>
<td>46-65 years</td>
<td>485 (42.0)</td>
<td>223 (44.5)</td>
<td>262 (40.1)</td>
</tr>
<tr>
<td>≥66 years</td>
<td>140 (12.1)</td>
<td>60 (12.0)</td>
<td>80 (12.3)</td>
</tr>
<tr>
<td>Education (in years)</td>
<td>12.60±3.09</td>
<td>12.73±3.03</td>
<td>12.50±3.14</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-8 years</td>
<td>156 (13.5)</td>
<td>61 (12.2)</td>
<td>95 (14.5)</td>
</tr>
<tr>
<td>9-12 years</td>
<td>596 (51.6)</td>
<td>263 (52.5)</td>
<td>333 (51.0)</td>
</tr>
<tr>
<td>&gt;13 years</td>
<td>402 (34.8)</td>
<td>177 (35.3)</td>
<td>225 (34.5)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>222 (19.7)</td>
<td>84 (17.5)</td>
<td>138 (21.3)</td>
</tr>
<tr>
<td>Rest d</td>
<td>905 (80.3)</td>
<td>396 (82.5)</td>
<td>509 (78.7)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried e</td>
<td>403 (35.4)</td>
<td>149 (30.4)</td>
<td>254 (39.2)</td>
</tr>
<tr>
<td>Married</td>
<td>735 (64.6)</td>
<td>341 (69.6)</td>
<td>394 (60.8)</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very bad/bad</td>
<td>138 (12.5)</td>
<td>59 (12.4)</td>
<td>79 (12.6)</td>
</tr>
<tr>
<td>Average</td>
<td>702 (63.6)</td>
<td>306 (64.4)</td>
<td>396 (63.1)</td>
</tr>
<tr>
<td>Good/very good</td>
<td>263 (23.8)</td>
<td>110 (23.2)</td>
<td>153 (24.4)</td>
</tr>
</tbody>
</table>

a P-value according to student’s t test (for numerical variables) or chi square test (for categorical variables).
b Mean value ± standard deviation (SD). c Number (column percentages). Discrepancies in the totals are due to missing covariate values; d Students, employed, and retired; e Single, divorced and widowed individuals.
Mean HL score was 34.35±11.97, being higher for health care (35.92±12.49) and lower for health promotion domain (31.79±13.33) (Table 2). No sex, employment status or marital status differences in the mean values of HL scores in general and according to three domains of HL were noticed. However, the mean values of all HL indexes' scores were statistically different across different categories of age-group, education level, social class and economic status. Subjects aged 26-45 years old had statistically higher mean HL scores except for health promotion HL whereas those aged 66 years or older exhibited lowest HL scores across all domains. The mean values of general HL, health care HL, disease prevention HL and health promotion HL scores were all significantly lower among the least educated, those with low social status and subjects reporting very bad or bad economic status with a clear increasing gradient of mean HL scores when moving from the most disadvantaged groups to the most advantaged ones (Table 2).

The associations of general HL, health care HL, disease prevention HL and health promotion HL scores with age were all negative, statistically significant, and slightly stronger among women than men as exhibited by higher Spearman’s rho coefficients among women (Table 3). The associations of HL scores with education, social status and economic status were all positive, significant, and ranging from a lowest Spearman’s rho=0.173 between economic status and health care HL to the highest Spearman’s rho=0.272 for the association between education and health promotion HL. In women the independent variable most strongly associated with HL scores was age whereas in men it was education (Table 3).
### Table 2. Distribution of HLS-EU-Q scores by demographic and socioeconomic characteristics in a population based sample of individuals aged ≥18 years in Tirana, Albania

<table>
<thead>
<tr>
<th>Socioeconomic characteristic</th>
<th>General HL score$^a$ Mean ± SD</th>
<th>Health Care HL score$^a$ Mean ± SD</th>
<th>Disease Prevention HL score$^a$ Mean ± SD</th>
<th>Health Promotion HL score$^a$ Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sample</td>
<td>34.4±12.0</td>
<td>35.9±12.5</td>
<td>33.1±12.7</td>
<td>31.8±13.3</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34.2±11.4 (0.804)$^b$</td>
<td>35.5±12.2 (0.372)</td>
<td>32.8±12.2 (0.403)</td>
<td>31.7±13.2 (0.861)</td>
</tr>
<tr>
<td>Female</td>
<td>34.4±12.4</td>
<td>36.2±12.7</td>
<td>33.4±15.0</td>
<td>31.8±13.5</td>
</tr>
<tr>
<td>Age-group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤25 years</td>
<td>&lt;0.001 (3) $^c$</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
<td>&lt;0.001 (3)</td>
</tr>
<tr>
<td>26-45 years</td>
<td>36.7±9.7 (&lt;0.001)</td>
<td>37.4±10.3 (&lt;0.001)</td>
<td>35.1±10.6 (&lt;0.001)</td>
<td>35.6±10.4 (&lt;0.001)</td>
</tr>
<tr>
<td>46-65 years</td>
<td>37.6±10.8 (&lt;0.001)</td>
<td>38.0±12.3 (&lt;0.001)</td>
<td>36.1±11.8 (&lt;0.001)</td>
<td>35.3±12.6 (&lt;0.001)</td>
</tr>
<tr>
<td>≥66 years</td>
<td>34.3±11.5 (&lt;0.001)</td>
<td>36.5±11.9 (&lt;0.001)</td>
<td>33.2±12.2 (&lt;0.001)</td>
<td>31.5±12.7 (&lt;0.001)</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-8 years</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
</tr>
<tr>
<td>9-12 years</td>
<td>25.5±13.8 (&lt;0.001)</td>
<td>28.8±15.0 (&lt;0.001)</td>
<td>24.7±14.2 (&lt;0.001)</td>
<td>21.8±14.6 (&lt;0.001)</td>
</tr>
<tr>
<td>≥12 years</td>
<td>34.5±11.8 (&lt;0.001)</td>
<td>36.2±12.1 (0.011)</td>
<td>33.2±12.6 (&lt;0.001)</td>
<td>32.0±13.1 (&lt;0.001)</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>33.1±11.6 (0.103)</td>
<td>35.1±12.3 (0.290)</td>
<td>31.8±12.6 (0.099)</td>
<td>30.5±12.6 (0.115)</td>
</tr>
<tr>
<td>Rest</td>
<td>34.6±12.0</td>
<td>36.2±12.4</td>
<td>33.4±12.6</td>
<td>32.1±13.5</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>34.2±12.6 (0.716)</td>
<td>35.3±13.0 (0.190)</td>
<td>32.6±13.2 (0.373)</td>
<td>31.9±13.7 (0.752)</td>
</tr>
<tr>
<td>Married</td>
<td>34.4±11.6</td>
<td>36.3±12.3</td>
<td>33.4±12.4</td>
<td>31.7±13.1</td>
</tr>
<tr>
<td>Social status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
</tr>
<tr>
<td>Average</td>
<td>27.1±14.3 (&lt;0.001)</td>
<td>30.2±14.9 (&lt;0.001)</td>
<td>25.8±15.4 (&lt;0.001)</td>
<td>23.8±14.6 (&lt;0.001)</td>
</tr>
<tr>
<td>High</td>
<td>34.4±11.6 (&lt;0.001)</td>
<td>36.3±12.0 (&lt;0.001)</td>
<td>33.4±12.2 (&lt;0.001)</td>
<td>32.2±12.8 (&lt;0.001)</td>
</tr>
<tr>
<td>Economic status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very bad or bad</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
<td>&lt;0.001 (2)</td>
</tr>
<tr>
<td>Average</td>
<td>28.9±12.4 (&lt;0.001)</td>
<td>31.9±13.0 (&lt;0.001)</td>
<td>27.6±13.1 (&lt;0.001)</td>
<td>26.2±12.9 (&lt;0.001)</td>
</tr>
<tr>
<td>Good or very good</td>
<td>34.0±12.3 (&lt;0.001)</td>
<td>36.1±12.7 (0.001)</td>
<td>33.0±12.8 (&lt;0.001)</td>
<td>31.7±13.7 (&lt;0.001)</td>
</tr>
</tbody>
</table>

$^a$ Range of General, Health Care, Disease Prevention and Health Promotion HL score from 0 (least health literacy) to 50 (maximum health literacy).

$^b$ Mean value ± standard deviation and p-values from General Linear Model (in parenthesis).

$^c$ Overall p-value and degrees of freedom (in parenthesis).
Table 3. Sex-specific correlation coefficients between health literacy indices and demographic and socioeconomic variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>GEN-HL</th>
<th>HLS-EU-Q instrument</th>
<th>HC-HL</th>
<th>DP-HL</th>
<th>HP-HL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>-0.216 (&lt;0.001) c</td>
<td>-0.112 (0.020)</td>
<td>-0.160 (&lt;0.001)</td>
<td>-0.258 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.250 (&lt;0.001)</td>
<td>0.189 (&lt;0.001)</td>
<td>0.238 (&lt;0.001)</td>
<td>0.236 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Social status a</td>
<td>0.165 (&lt;0.001)</td>
<td>0.167 (&lt;0.001)</td>
<td>0.163 (0.001)</td>
<td>0.138 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Economic status b</td>
<td>0.233 (&lt;0.001)</td>
<td>0.198 (&lt;0.001)</td>
<td>0.222 (&lt;0.001)</td>
<td>0.174 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>-0.314 (&lt;0.001) c</td>
<td>-0.228 (&lt;0.001)</td>
<td>-0.276 (&lt;0.001)</td>
<td>-0.346 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.281 (&lt;0.001)</td>
<td>0.208 (&lt;0.001)</td>
<td>0.266 (&lt;0.001)</td>
<td>0.299 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Social status a</td>
<td>0.257 (&lt;0.001)</td>
<td>0.220 (&lt;0.001)</td>
<td>0.251 (&lt;0.001)</td>
<td>0.266 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Economic status b</td>
<td>0.209 (&lt;0.001)</td>
<td>0.155 (&lt;0.001)</td>
<td>0.208 (&lt;0.001)</td>
<td>0.223 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td><strong>Overall sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>-0.275 (&lt;0.001) c</td>
<td>-0.179 (&lt;0.001)</td>
<td>-0.230 (&lt;0.001)</td>
<td>-0.309 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.267 (&lt;0.001)</td>
<td>0.198 (&lt;0.001)</td>
<td>0.252 (&lt;0.001)</td>
<td>0.272 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Social status a</td>
<td>0.223 (&lt;0.001)</td>
<td>0.201 (&lt;0.001)</td>
<td>0.218 (&lt;0.001)</td>
<td>0.215 (&lt;0.001)</td>
<td></td>
</tr>
<tr>
<td>Economic status b</td>
<td>0.218 (&lt;0.001)</td>
<td>0.173 (&lt;0.001)</td>
<td>0.214 (&lt;0.001)</td>
<td>0.203 (&lt;0.001)</td>
<td></td>
</tr>
</tbody>
</table>

a Range from 1 (low) to 3 (high).
bRange from 1 (very bad) to 5 (very good).
cSpearman’s rho and their respective p-values (in parentheses).

**DISCUSSION**

**Main findings of the study**

As expected, HL is not uniformly distributed in the Albanian adult population but rather it fluctuates based on some key socio-demographic and socioeconomic factors and thus suggesting for complex background relationships determining such associations in this SEE population. Our results suggested that, in terms of mean HL scores, Albanian adults do better in health care, somewhat worse in disease prevention and worse in health promotion. Furthermore, better general HL is significantly associated with younger age (with those aged 26-45 years old exhibiting the highest scores for all HL indexes except for health promotion HL), higher education level and higher self-perceived social and economic status of Albanian adults. In addition, no significant differences of HL scores were noticed regarding sex, employment status and marital status of respondents. In men, education was the main determinant of general, health care and disease prevention HL but not health promotion HL whereas in women it was age for all HL indexes.
What is already known on this topic

According to the Office of Disease Prevention and Health Promotion, up to nine out of every 10 adult people in the United States experience different levels of difficulty using the health information available in different settings. This implies that these subjects might have limited or inadequate HL which limits their abilities to find health information, understand and interpret it and effectively turn it into healthy behaviors. Limited HL thus results in overuse of health services, worse management of chronic diseases, more adverse health outcomes and higher costs. In Europe, 47.6% of subjects aged 15 years or older had limited HL literacy. On the other hand, 16.5% of European adults had excellent HL and 12% of US adults had proficient HL even though the HL thresholds used in the European and US survey are not directly comparable. Subjects with less than proficient HL are not able to function adequately in the health settings since health written materials are often too complex for them and health professionals often do not take into account one’s HL level when dealing with patients, despite the given recommendations.

Most at risk of limited HL are people older than 65 years of age, those with low education and economic level, those being unemployed and with self-perceived low social status. A systematic review suggested that low HL was associated with lower likelihood of reviewing prescription information, taking medications appropriately and correctly interpreting labels and health messages. Also, the prevalence of depression, chronic diseases such as diabetes and heart failure was higher among low HL subjects, even though results were contradictory regarding other chronic diseases and mainly based on cross-sectional designs. The strength of evidence regarding the association of HL with other health outcomes was judged to be insufficient or inconsistent by the authors of this systematic review.

HL could be even more important in the context where use of health information technology is becoming increasingly present in the health system. Nowadays, patients turn to online sources of health information prior and after the medical encounter. For example, a recent study suggested that four out of every five patients sought health information online after consuming a visit with their doctor and patients who had better skills to evaluate and use online health information were more likely to seek health information online and to consult medical journal papers (trusted sources). However, as a telephone survey study suggested, the aim of consulting online health information is often not to overcome the medical authority but rather to provide oneself with better negotiation skills regarding health changes.

The effects of various interventions on HL have been explored as well. Re-design of health materials in terms of comprehension and alternative numerical presentation, using other media besides printed materials alone and making health materials more clear could improve their comprehension. Provision of specific education to patients combined with other interventions (mixed interventions) could increase the medical
tests’ completion rates or use of preventive services especially among low HL subjects.\textsuperscript{27} Also, provision of self-management teaching could improve self-management behavior.\textsuperscript{27} Recently, various eHealth interventions are suggested as an effective way to address the needs of low HL individuals.\textsuperscript{33} eHealth interventions have the advantage of reaching a large number of individuals over the internet and smartphones and the potential of supporting behavior change and prevention and management of disease.\textsuperscript{33} There is evidence that eHealth interventions resulted in significantly increased HIV and cancer knowledge, fruit and vegetables consumption, perceived risk scores, etc.\textsuperscript{33} These eHealth interventions could be of increasing importance in the context where Albania is experiencing a considerable improvement of communication systems, such as internet coverage and use of mobile phones.\textsuperscript{34}

**What this study adds**

This is the first study exploring and reporting about health literacy and its distribution by socio-demographic and socioeconomic factors in a population-based sample of adults in Albania, using a validated European HL instrument. In addition, our paper offers for the first time a direct comparability with the other 8 European countries that have used the same instrument.

We observed that the HL pattern among Albanian adults followed a similar trend to that reported among other European countries: mean HL indexes’ scores were higher for health care HL, lower for disease prevention HL and lowest for health promotion HL. The mean disease prevention and health promotion HL scores in Albania were lower than the corresponding mean values of six out of eight European countries in which the same HL instrument was applied.\textsuperscript{8} In this Albanian population-based sample, the positive association of general HL with education, social status and economic status was similar to the other European countries, whereas the inverse association with age was stronger than that reported among all European countries together.\textsuperscript{8} The strength of association of general HL score with education was very similar to those reported for Bulgaria and Poland\textsuperscript{8} whereas the association with social status and economic status were lower than those in Bulgaria and Poland.\textsuperscript{8} Understanding the factors associated with HL in Albania might be a key element in the prevention and management of diseases as various interventions to address low HL have proven to be of benefit to selected target groups.\textsuperscript{27}

**Study limitations**

Our study has several limitations. Firstly, 346 subjects could not be contacted. For these individuals, we were able to retrieve information only about their sex and age. Non-respondents were slightly younger than participants in both sexes. The response rate in our study was high (89%), even assuming that all individuals who could not be contact-
ed were eligible (77%). However, we included only individuals residing in urban Tirana, and not those residing in rural areas of Tirana district. Also, Tirana residents may not be representative to the overall Albanian adult population. Therefore, findings of our study apply only to urban areas of Tirana.

Secondly, we cannot rule out information bias in our survey especially regarding the self-reporting of economic and social status. However, we have no indices about information bias related to a potential differential reporting between the study groups. Thirdly, the cross-sectional design employed does not allow drawing definite conclusions about the temporality of events.

CONCLUSION

This is one of the few reports addressing HL in a population-based sample in countries of Southeast Europe. The factors associated with HL of the Albanian adult population are compatible with those observed in other former communist countries. Nevertheless, findings of our survey should be interpreted with caution and applied in the distinctive Albanian context characterized by a rapid political and socioeconomic transition towards a market-oriented economy.

Our findings could facilitate the tailoring of future interventions aiming to improve health status of citizens in Albania, especially in the context of the European health mandate, the fulfilment of the requirements implied by the EU candidate country status and the rapidly expanding health information technology.

Authors’ contribution

E.T., G.B. and H.B. contributed to the study conceptualization and design, analysis and interpretation of the data and writing of the article. S.M. and K.S. commented comprehensively on the manuscript. All authors have read and approved the submitted manuscript.

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REFERENCES


CHAPTER 8

General Discussion
In this concluding Chapter we summarize the main findings of this thesis and discuss them in the context of other studies and reports from the international literature giving special attention to the work already done in the region. In addition, this chapter discusses the strengths and limitations of our research work which should promote and guide future research on health literacy in these transitional countries. In the last section of this chapter, we provide recommendations for health professionals, decision-makers and policymakers of the health sector in both countries for further improving and facilitating the ways consumers and health sector interact between them.

**MAIN FINDINGS OF THE THESIS**

This research has been fueled by the fact that no report on health literacy was in place in Albania and Kosovo fulfilling this way a knowledge gap not previously addressed. In a large population-based sample of older people in Kosovo, mean health literacy scores varied significantly according to their socio-demographic characteristics. Men, the youngest individuals (participants aged 65-74 years old), urban residents, those having at least one year of formal schooling and those perceiving themselves as not poor had significantly higher mean health literacy scores compared to their counterparts. The main factors affecting health literacy scores were age and education with the oldest individuals and those having no formal schooling exhibiting extremely lower mean health literacy scores compared with their younger and the more educated counterparts.

Furthermore, we evidenced remarkable differences in mean scores of health literacy among older people according to their self-perceived health status and the presence of chronic morbidity. After controlling for age, sex, education, marital status, place of residence and self-perceived poverty, individuals with self-perceived poor health status and those reporting at least one chronic condition exhibited significantly lower mean health literacy scores compared to their healthier counterparts. The higher the number of chronic conditions, the lower the mean health literacy score.

A noteworthy finding in a large sample of primary health care users aged 18 years or older in Kosovo was the especially high prevalence of limited functional health literacy as measured by the TOFHLA instrument: four out of five (80.6%) primary health care users had inadequate (43.8%) and marginal (36.8%) functional health literacy. In multivariable-adjusted analysis, mean functional health literacy scores were significantly lower among the oldest subjects under study, individuals with lower education level, and the unemployed. Interestingly, mean functional health literacy scores were similar among men and women, but men were significantly more likely to report adequate functional health literacy levels compared to women (OR=1.45, P=0.041).

The relatively large-scale validation study of two major health literacy instruments in a representative population-based sample of adults aged 18 years or older in Albania
yielded novel evidence about health literacy, a topic not previously addressed by researchers in this South Eastern European country. Both TOFHLA and HLS-EU-Q instruments showed good internal consistency (Cronbach’s alpha 0.92 and 0.98, respectively) and good test-retest reliability over time (Spearman’s rho 0.87 and 0.88, respectively). The correlation coefficient of instruments was moderate (Spearman’s rho 0.493). Functional health literacy (as measured by TOFHLA) and health literacy (as measured by HLS-EU-Q) scores were significantly associated with age, education, body mass index and economic status of participants, with education and age being most strongly associated with limited health literacy.

The study of health literacy using the HLS-EU-Q instrument in a large population-based sample of adults aged 18 years or older in Albania suggested that the mean health literacy scores were lower for health promotion domain, a bit higher for disease prevention domain, and the highest for health care domain. Mean health literacy scores were significantly lower among older respondents, individuals with lower formal years of schooling and those with lower social and economic status, in both men and women. In women, the independent variable most strongly associated with HL scores was age (Spearman’s rho coefficient ranging from -0.228 for the association with health care health literacy to -0.346 for the association with health promotion health literacy), whereas in men it was education (Spearman’s rho coefficient ranging from 0.189 for the association with health care health literacy to 0.236 for the association with health promotion health literacy).

Demographic and socioeconomic factors associated with health literacy in Albania and Kosovo versus findings from neighboring countries

Reports of health literacy are scarce in the countries of South Eastern Europe. Besides the current reports from Albania and Kosovo, health literacy has been explored only in Serbia, whereas there is lack of information from Montenegro, Macedonia and Bosnia and Herzegovina.

In Serbia health literacy was measured by TOFHLA or sTOFHLA instrument. The prevalence of limited functional health literacy in Serbia varied between 40.9% among 105 primary health care users aged ≥18 years old (21.9% inadequate and 19.0% marginal health literacy) to 46.3% among 1361 primary health care users in another study (32.0% inadequate and 14.3% marginal health literacy). In Albania and Kosovo the prevalence of limited health literacy as measured by TOFHLA was, respectively, 41.8% among 239 adults aged ≥18 years (15.9% inadequate and 25.9% marginal health literacy) and 80.6% among 1035 primary health care users aged ≥18 years (43.8% inadequate and 36.8% marginal health literacy). The extremely high prevalence of limited health literacy in Kosovo might be attributed to several factors: Kosovo is the poorest country of Europe, coming out of a recent armed conflict which disrupted all fields of life, and where the rates of lack of formal schooling are extremely high (especially...
Furthermore, the society in Kosovo seems to be quite patriarchal with a low degree of social participation. This unique environment combining several boosting factors of limited health literacy (high social disruption, low education attainment and high poverty rates) might explain our findings in Kosovo. Upon multivariable adjustment analysis, the association of limited health literacy with gender was not significant in Serbia but it was significant in Kosovo and Serbia with women being more likely to experience limited health literacy or significantly lower mean health literacy scores, respectively. This finding in Kosovo could be attributed to low levels of education among women and their status in Kosovo society, as discussed above. On the other hand, men and women in Kosovo exhibited similar mean health literacy levels (not evidenced among older people in Kosovo) pointing out to the fact that the same mean health literacy levels are “translated” differently into adequate or inadequate health literacy in men and women. The mechanisms of such differences remain unknown and thus provide excellent opportunities for future research. In general, the association of health literacy with gender is not straightforward in the international literature either, thus it is not possible to detect a clear pattern.

In those Balkan communities where health literacy has been studied, a common finding is that age and education are strongly and significantly associated with health literacy with the association with age being negative and with education being positive, in line with international reports. In this respect societies of South East Europe are similar to those in other parts of the region and beyond confirming once more the relatively well-established associations of health literacy with these two basic characteristics. The association of health literacy with economic status (and/or poverty) was significant among older people in Kosovo and individuals aged ≥18 in Albania but not significant among primary care users aged ≥18 years old in Kosovo, similar to the lack of such associations in Serbia. Thus, the association between health literacy and economic status is confirmed in population-based studies but not in clinical-settings-based samples. Clearly, the differences are due to different populations involved, which are not similar: population-based samples are different from those drawn among primary care users in many regards such as morbidity and economic status, for instance. Primary health care users in general have worse health status compared to the general population in terms of morbidity and this is the main reason that they contact primary health care services. Morbidity and multimorbidity is linked to health literacy whereas primary health care settings are more frequently used by the more disadvantaged population groups whereas rich and highly educated people make more use of private health care services. These differences in both types of samples employed (population-based vs. clinical-settings-based samples) might play a role in the lack of association between health literacy and economic status among primary health care users in our study.

Among older people in Kosovo health literacy was significantly associated with self-reported health status and morbidity: individuals with good health status and having no
chronic conditions showed significantly higher mean health literacy scores compared to their counterparts. In Serbia health literacy was positively and significantly associated with better self-perceived health status and lack of chronic conditions. However, results could not be directly compared due to different age-groups included in studies conducted in Kosovo (older people aged ≥65 years old) and Serbia (individuals aged ≥18 years old). Nevertheless, the trends of the associations are clear and in line with international reports.

Interestingly, mean TOFHLA scores were higher in Albania (mean score 76.32±16.96) than in Kosovo (mean score 61.81 ± 14.82). In the context when the mean age in both studies was similar (mean age ~43 in Albanian study and mean age ~44 in Kosovo study) we think that the low level of formal schooling in Kosovo could explain a relatively large part of the observed difference.

In summary, the factors associated with health literacy in Albania, Kosovo and Serbia are similar and generally follow the patterns observed elsewhere. Kosovo seems to be in a more disadvantaged position among the South East European countries for which data is available, as evidenced by lower mean health literacy scores and higher rates of limited (inadequate + marginal) health literacy. The disfavored situation of Kosovo could be attributed to its past and recent developments.

**Demographic and socioeconomic factors associated with health literacy in Albania and Kosovo versus European countries and world findings**

In our surveys conducted in Albania and Kosovo and European countries and world findings, age and education were consistently associated with health literacy regardless of the health literacy instrument used. The findings mimic similar associations reported in the international literature. For instance, the 2011 health literacy survey including 8 European countries using the HLS-EU-Q instrument reported negative and significant associations of health literacy with age with correlation coefficients varying from -0.141 in Austria to -0.305 in Greece (for Germany and Ireland the associations were not significant). In the Netherlands, the association of health literacy with age was positive (Spearmans’s rho = 0.097) with older individuals showing higher mean health literacy scores. The association of health literacy with age is well-established. The deterioration of health literacy with age is observed among older adults as well. A study among Medicare enrollees aged ≥65 years old reported that individuals with marginal and inadequate health literacy were on average older than individuals with adequate health literacy, similar to Kosovo findings.

Perhaps the single factor most strongly associated with health literacy is education and such associations between health literacy and education are well-established in different population and clinical settings and using various health literacy instruments. Positive associations of health literacy with education were reported with correlation coefficients varying from 0.157 in Netherlands to 0.399 in Ireland. The
association of health literacy with education was therefore consistent across the eight countries. In our study in Albania using the same health literacy instrument the correlation coefficients of health literacy with age and education were -0.275 and 0.267, respectively and these results are very similar to Bulgaria ones. Health literacy and education were significantly and strongly correlated in all our studies conducted in Albania and Kosovo.

The associations of health literacy with age and education are very important with regard to Albania and Kosovo as the populations of both countries are ageing and the share of people 65+ years old is increasing, as elaborated in Chapter 2. Since age is a non-modifiable factor then the attention should be focused on educational attainment. Public spending on education in Albania and Kosovo is lower compared to other countries of the region and EU countries. For example, according to UNICEF Albania spends 3.7% of its GDP on education, the lowest figure among South East European and European Union countries, and even lower than in Kosovo where education’s share of GDP was 4.3% in 2008. Moreover, in Albania the entire education system is currently under heavy reforms. Very recently the government decided to shut down and/or temporarily suspend a considerable number of private and public higher education institutions that did not meet minimal academic standards, a situation going on for several years now. In addition, the precarious state and poor outcomes of education in Albania were highlighted in the 2009 report of the Programme for International Student Assessment (PISA) which has become the world’s reference for evaluation of the quality, equity and efficiency of school systems. PISA gives an indication of the extent to which “students near the end of compulsory education have acquired the knowledge and skills that are essential for full participation in modern society, particularly in mathematics, reading and science”. PISA 2009 focused on reading skills implying the “range of situations in which people read, the different ways written texts are presented, and the variety of ways that readers approach and use texts, from the functional and finite, such as finding a particular piece of practical information, to the deep and far-reaching, such as understanding other ways of doing, thinking and being”. According to this report: “Research shows that these kinds of reading literacy skills are more reliable predictors of economic and social well-being than the number of years spent in school or in post-formal education.” PISA 2009 provides a summary score indicating students reading skills, knowledge and understanding. Reading proficiency ensures the basis for achievements in other areas and full participation in adult life.

In Albania, 57% of 15 year old students have a proficiency level of 1a or less or, otherwise, are functionally illiterate meaning that they know how to read but they don’t understand what they are reading. This is the highest prevalence of functional illiteracy in the South Eastern region (in Montenegro the corresponding figure is 49.5%, in Serbia 32.9%) and in Europe. Moreover, in Albania the proportion of students performing below level 1b (the lowest level of reading proficiency) is extremely high: 11.3% vs. 5.9%, 2% and 1% in Montenegro, Serbia and Croatia, respectively. Additionally, the
gender gap in reading proficiency in Albania is higher than in any other country with girls largely outperforming boys as measured by mean levels of reading proficiency.\textsuperscript{43}

This means that the Albanian education system is far from being efficient and equitable. Anecdotal information suggests that the situation of education system is not better in Kosovo. The PISA report states that “countries with large numbers of students who struggle to master basic reading literacy skills at age 15 are likely to be held back in the future due to substantial proportions of the adult population lacking skills that are needed in the modern workplace and society”.\textsuperscript{43} In this perspective, investing in education is a powerful strategy that might foster the development.\textsuperscript{43} In the light of the strong associations between health literacy and education, it becomes evident that there is an imperative need to improve the education system and quality in both Albania and Kosovo. Particularly, efforts to improve boy’s reading proficiency skills could have a significant effect on the overall achievement in Albania.\textsuperscript{43} These targets are likely to require major reforms and efforts.

The associations of health literacy and gender are controversial. Among older people in Kosovo males exhibited significantly higher mean health literacy levels compared to females\textsuperscript{1} but this association was not evidenced in individuals aged ≥18 years old using a different health literacy instrument even though males were significantly more likely to exhibit adequate health literacy compared to females.\textsuperscript{3} No sex-differences were noticed in studies conducted in Albania.\textsuperscript{4,5} The international literature reports such controversy as well as some studies have evidenced significant associations between gender and health literacy\textsuperscript{16,27,28,30,36,38} with females being more\textsuperscript{9,28} and less likely to have limited health literacy and/or lower health literacy scores,\textsuperscript{16,27,30,36,38} whereas some other did not find an association.\textsuperscript{15,26,30,32,38,44,45}

An interesting pattern could be spotted regarding the association of gender with health literacy. Whereas in developed countries usually women score better on health literacy levels, the opposite is true for South East European countries such as Kosovo,\textsuperscript{1,3} Serbia,\textsuperscript{6,7,9} and Turkey.\textsuperscript{28} In Albania, females tend to have better health literacy scores even though differences are very small and not significant.\textsuperscript{4,5} These results are unexpected since girls always outperform boys in every aspect of reading, mathematics and science skills and these countries experience the largest girl-boy gaps in such skills.\textsuperscript{43} We think that the main reason for this “reversed” gender pattern is the patriarchal type of societies in these countries,\textsuperscript{14,46-48} which contributes to gender disparities, disadvantaging of women and impedes their empowerment and self-fulfillment.

We didn’t find significant differences in health literacy levels by marital status neither in Albania\textsuperscript{5} nor in Kosovo.\textsuperscript{1,3} This findings are in concordance with reports from the region\textsuperscript{6,7} (even though among single women in Serbia the prevalence of adequate health literacy was significantly higher\textsuperscript{4} and beyond.\textsuperscript{49,50}

Employment status and income are also associated with health literacy with those unemployed and/or with lower income or economic status exhibiting lower health literacy levels.\textsuperscript{7,8,16,17,28,29} These trends were present in Albania and Kosovo as well.\textsuperscript{1,3-5}
Unemployment and income determine a part of health literacy level as proposed in the Paasche-Orlow et al.’s “causal pathways between limited health literacy and health outcomes”. Unemployment rates in Albania (18% in first trimester of 2014) and Kosovo (30% in 2013) are relatively high. The income distribution inequality, as measured by GINI coefficient, in Albania and Kosovo in 2005 was around 30%. Since Albania and Kosovo are the poorest countries in Europe, subject to continuous major reforms and inefficient education systems, as we have explore earlier, then unemployment and income will continue to contribute considerably to lower health literacy scores among the respective populations, especially in the post-conflict Kosovo. However, the magnitude of such effects is a challenge to future studies.

**Health status, health outcomes and health literacy in Albania and Kosovo versus international findings**

The study of health literacy among 1154 individuals aged ≥18 years old in Albania using the validated Albanian version of HLS-EU-Q instrument provided us with information that is comparable to other European countries. The mean general health literacy score in Albania was 34.4 which is relatively high compared to other European countries and is lower only to Netherlands, Ireland and Poland and Germany. The mean health literacy scores were higher for health care followed by disease prevention health literacy whereas lowest mean scores were noted regarding health promotion, similar to European countries. In Albania, the mean score of health care health literacy was higher compared to the European average but scores for the two other health literacy indexes were lower than European averages. Therefore, in Albania we confirmed the tendency that people find it more easy to find information about health care and follow medical instructions and find it more difficult when it comes for issues regarding disease prevention and health promotion. Obviously, disease prevention and health promotion require more elaborated reading proficiency and critical thinking skills involving wider dimensions such as judging certain policies, for example. However, this is a major drawback especially for Albania (and Kosovo) where rates of functional illiteracy are high. Preventive services are key to early detection of diseases and improving accessibility to such services could reduce differences in the health status of individuals, especially among low health literacy subjects.

The study among older people in Kosovo provided interesting information about the associations of health literacy with self-perceived health status and self-reported morbidity. We found that mean health literacy scores were significantly lower among subjects reporting poor health status and a higher number of chronic conditions or more adverse health outcomes. This finding is in line with results from Serbia and international literature.

Low health literacy is associated with a wide range of adverse health outcomes. For example, people with lower health literacy make less use of screening services (Pap-
tests, mammography, colon cancer screening, HIV testing), have higher hospitalization and emergency department rates, lower immunization rates and less access to health insurance schemes.\textsuperscript{56,57} Low health literacy individuals experienced lower adherence to specific prescription regimes, lower rate of reviewing prescription information and appropriately taking medication, a higher probability of misinterpreting label instructions and health messages, lower asthma-managing skills, higher prevalence of mental disorders and chronic illnesses, lower diabetes and prostate cancer control, poorer self-reported health status, higher mortality rates and higher emergency department costs.\textsuperscript{56,57} However, the strength of evidence for the abovementioned associations of health literacy is moderate to low in the majority of studies and based generally on cross-sectional observations.\textsuperscript{57}

Nevertheless, there are little doubts that health literacy is a key determinant of health. The wide range of factors determining health literacy and the wide range of health outcomes it leads to, resembling to the bridge model mentioned in Chapter 1, are sufficient arguments for health literacy to be high on the health agenda of Albania and Kosovo. Unfortunately, this topic has not yet been discussed in these two South East European countries. Given that both countries experience pitfalls in education, health and economic grounds, the addressing of health literacy and interventions to improve it, as we will discuss in the next section, becomes even more imperative in order to improve the overall wellbeing of these transitional communities.

\textit{Health literacy interventions}

Berkman and colleagues provided a thorough literature review regarding the interventions to mitigate the effects of limited health literacy and their results.\textsuperscript{57} The review indicated that single intervention strategies such as alternative document design (i.e. putting essential information first, presenting only essential information, etc.), use of illustrative materials, alternative numerical presentation of information, adding icons, using alternative media formats such as adding videos to verbal narratives and alternating readability, improved comprehension among low literacy individuals.\textsuperscript{57} The strength of evidence linking such interventions with improved health literacy was, however, low.

In addition, mixed intervention strategies such as preventive service education for providers and/or patients could increase the rate of using of preventive services whereas promoting medication adherence could decrease the rate of hospitalization and emergency room visits.\textsuperscript{57} Individual or group-counselling could improve the self-management behaviors and verbal instructions to patients plus using of icons could improve medication adherence among low literacy individuals.\textsuperscript{57} The combination of simple language, simple organizational structure of health materials, pictures and strengthening of self-management skills lead to better disease control among low literacy individuals.\textsuperscript{57} Interventions that aimed to increase knowledge of individuals regarding different topics, to increase self-efficacy and medication adherence showed mixed
results. Other mixed interventions including patient education, skill building, graphic medication labels, monitoring of adherence and notification of providers could decrease the costs of health care.

The authors concluded that in order for the interventions to have some effects in improving the adverse effects of low health literacy they should be pilot-tested before full scale application and in general they should be intensive, theory based, concentrate on skill building and the intervention should be delivered preferably by a health professional.

In conclusion our remark is that interventions aiming to mitigate adverse effects of health literacy are complex and will require much efforts to be prepared and appropriately delivered. In a broad sense, the mix of interventions described above mainly to making the health system, health environment or health information simpler, more readable and easier to be understood and to capacity building of subjects experiencing low levels of health literacy. Another intervention could be the improving of health literacy skills in the population. Both main pillars (individual capacity building, making health system more readable and improving health literacy of the population) are achievable in Albania and Kosovo if there is a substantial improvement in the management of actual resources and better priority setting. For example, efforts to improve the efficiency and quality of the education system in both countries could result, even though in long-term, in a considerable improving of the overall education level of the population including reading, mathematics and science proficiency which definitely will contribute to increase the level of health literacy as well. Since education is the factor most strongly and universally associated with health literacy then, to our opinion, the commitment toward improvement of education in general in Albania and Kosovo is the most plausible and feasible intervention to address shortcomings in health literacy in these transitional South East European countries. In parallel, all efforts should be taken to make the (health) system easier and to put in practice as many successful interventions as possible suggested by the experience of other countries. These include focusing on promoting better access to and use of information through Information and Communication Technology and Empowerment, indispensable in a highly-technological age, and also the need for collaboration of professionals of health, education and other relevant sectors. Obviously, all efforts should be adapted to the respective local contexts.

**Health literacy perspectives, policy, programs and innovations**

Even though health literacy has not been explored in many countries it is now clear that every nation is experiencing issues that could be impacted by health literacy, some of which are included in Millennium Development Goals (MDGs) such as the reduction of non-communicable disease burden and effective management of public health emergencies. Developing countries like Albania and Kosovo are facing the demographic and
epidemiologic transition as discussed in detail in Chapter 2 and therefore these remarks are relevant to these countries too. Improving health literacy could have a positive impact on all aspects affected by it. Therefore, the importance of health literacy is being increasingly recognized and considered a key action area.59,60

As such, health literacy is high on international agenda. In 2012, the WHO introduced the National eHealth Strategy Toolkit aiming to support governments to develop an e-health strategy and action plan.60 Other initiatives focusing on empowerment and health literacy promotion are underway in Europe and USA as well.60 The UN Economic and Social Council (ECOSOC) stated in 2009 that health literacy is an important determinant of health outcomes and there is need to develop action plans to promote and foster health literacy, reinforced by the UN General Assembly meeting in 2011.60 The WHO Innovation Working Group (IWG) task force is working to create innovative ways to deliver health care, such as checklists and scorecards,60 obviously interventions aiming to make the “system” easier and more understandable, as suggested by current research. An interesting change in health literacy perspectives is the notion that health literacy is different from health education and programs to improve health literacy shouldn’t be focus only in schools.60 The online and mobile technologies are creating phenomenal opportunities to foster health literacy and many interventions based on this concept are currently underway, especially in the USA.60

In USA efforts are being made to make health literacy a part of all types of health action.60 Moreover, health literacy has been introduced in the federal legislation as well and there is a National Action Plan to Improve Health literacy, focusing on information dissemination, provision of health care services, education of people, delivering of services through community-based organizations, collaboration between stakeholders, conducting research and evaluating it.60

In Canada, health literacy interest began in the 80s when the research results showed that it was an important determinant of health, leading finally to national surveys to measure health literacy.60 Health literacy efforts in Canada have been focused in health promotion efforts.60 Many innovative programs, initiatives and activities are taking place to improve health literacy.60 There are initiatives to develop a national strategy to promote health literacy and to raise health literacy awareness of physicians.60 More than 30 health literacy projects are being realized across the country.60

In Australia efforts are concentrated on how to incorporate health literacy into existing standards of safe and high-quality care and supporting health services to make it easier for low health literacy individuals to use and understand health information and health services.60 In Italy, the Adult Literacy and Life Skills Survey, conducted in 2008, suggested that low health literacy is rather widespread and there is incongruence between skills of the public and demands of the health system.60 Health literacy initiatives were further elaborated in 2011 with the aim to improve oral and written communication skills of health professionals.60 In Ireland the International Adult Literacy Survey, conducted in 1997, suggested that 23% of Irish adults had low literacy levels.60 In 2013,
a new assessment was conducted. In 2000, the National Health Promotion Strategy was introduced acknowledging the importance of health literacy. Initiatives to improve health literacy focus on use of plain English, producing of health literacy teaching materials, ensuring that key stakeholders share a common understanding of the concept of health literacy, sharing of best practices in health care sector, fostering government debate and policy and promoting health literacy. Future perspectives require health literacy to be integrated into national health campaigns, screening efforts, undergraduate curricula, accreditation criteria and to promote national awareness about low health literacy.

In 2012 the HLS-EU consortium conducted the health literacy survey in 8 European countries and reported that about half of surveyed individuals had limited health literacy. Results of this survey contributed to foster the incorporation of health literacy in EU health agenda.

As regards innovations in health literacy, Israel is an example to be taken. The country ranks 17th among 192 countries for digital communication rate. Despite not being a national level issue, health literacy is part of the national strategic plan for reducing health disparities. Health literacy initiatives take place in various settings such as community, primary care and hospital settings and online. Vast numbers of physicians and nurses are trained each year whereas workshops about culturally appropriate lifestyle and self-management are held in different community settings. In hospitals the “Ask Me 3” initiative is being implemented, part of a WHO health promoting initiative. An online program for health literacy is currently functioning as well where users can obtain results of examinations together with its interpretation and there are about 2.5 million hits each month. Another innovation is the development of an online nutrition game for children, that became very popular. A computer-based program has been developed in order to improve communication skills of physicians and nurses. Other initiatives are underway as well making Israel one of the countries where a vast array of health literacy activities and innovations take place.

In Europe, based on HLS-EU survey, the perspectives are to look at national differences among countries testing the hypothesis that a country’s health system and society shapes the levels of health literacy. Other research directions include finding out where people find information, who are the gatekeepers, and what are the effects of education on national beliefs, religions and society. Furthermore, efforts will be focusing on incorporating health literacy in school curricula as a way to put health literacy on national agendas.

Communication and communication measurement is essential for health literacy. Future perspectives should address the way communication is measured as until now little is done in this regard. Another area for potential intervention is the need to address and counter misinformation in public and private place where people obtain health information through various regulations, education and shaping of context in which people perceive and understand health issues. Also, after understanding how
health literacy is influenced by peoples characteristics then health messages can be shaped and tailored to specific needs and demands. Lastly, future perspectives of health literacy obviously should engage electronic media technology that is already the main source of public information. The challenge, however, will be to connect stakeholders tackling health literacy in various settings through the use of e-technology.

STRENGTHS AND LIMITATIONS OF THIS STUDY

Our survey conducted in Albania and Kosovo has several strengths, which are briefly summarized below:

- **Study sample**: our survey made use of several study samples from the general population and primary care settings: we employed a large nationwide representative sample of older men and women in both urban and rural areas of Kosovo; a sample of 1035 primary care users aged ≥18 years old in three regions of Kosovo; a sample of 239 randomly selected urban adults aged ≥18 years in Tirana and a large sample of 1154 randomly selected urban adults aged ≥18 years in Tirana. The variety of target populations and subsequently the respective drawn samples allowed us to explore health literacy from different perspectives.

- **Response rate**: the response rate in the population-based and primary care settings based surveys in Albania and Kosovo was remarkably high in both men and women. Based on the sampling technique, the relatively large sample size and the high response rate, findings from our study samples in Kosovo can be generalized to the overall population of Kosovo aged ≥65 years and to all primary care users aged ≥18 years in Kosovo. In Albania the findings are generalizable only to urban residents aged ≥18 years old.

- **Data collection**: our measuring instrument for the assessment of demographic and socioeconomic conditions associated with health literacy among selected target populations in Albania and Kosovo consisted of internationally used health literacy instruments, validated in Albanian settings. These instruments, tackling health literacy from the medical and public health perspective, yielded information which was comparable to other international research.

Conversely, the separate studies conducted in Albania and Kosovo have the potential limitations of cross-sectional studies and therefore prone to biases of selection and information:

- Although our sampling frame consisted of the most valid and reliable source in Kosovo namely the Ministry of Social Welfare lists, and notwithstanding the high response rate, we cannot exclude entirely the possibility of selection bias in the study among older people in Kosovo. In the study among primary health care users in Kosovo the potential of selection bias still exist even though we included consecutive
patients showing up at selected study centres. In the two studies conducted in Albania the selection bias cannot be ruled out either: in the smaller scale validation study the potential of selection bias is greater but this bias cannot be rule out even in the study among 1154 individuals in Tirana.

- The information bias cannot be ruled out in any of the studies conducted in Albania and Kosovo even though questions on basic socio-demographic and economic information are routinely used in similar surveys. However, the self-perceived poverty, health status, economic status and self-reported morbidity always bear the potential of information bias. Information bias might have been present when reporting information on health literacy questions as well as the oldest or the more disadvantaged might have had poorer understanding of respective items compared to their counterparts. However, there is no conceivable reason to assume differential reporting between different groups differing in their demographic and socioeconomic characteristics. Yet, the possibility of information bias cannot be excluded, as it is an inherent drawback of this kind of (cross-sectional) studies.

- More importantly, relationships reported in cross-sectional studies of this nature are not assumed to be causal. Therefore, confirmation and replication of our findings ideally from prospective studies is needed in order to firmly inform policy.

**CONCLUSIONS**

*Based on the surveys conducted in Albania and Kosovo, the following conclusions are derived:*

- A high proportion of individuals in Albania and especially in Kosovo have limited and/or low mean scores of health literacy.

- In Kosovo female individuals experience lower health literacy levels compared to men, a trend which is the opposite of that noticed in the vast majority of other countries. This is a sign of the patriarchal model of society dominating in Kosovo.

- The demographic and socioeconomic factors associated with health literacy in Albania and Kosovo are similar to those reported in the neighboring countries and beyond, with some differences.

- Age and education are the factors most often affecting health literacy. Low education is the main determinant of low health literacy in Albania and Kosovo. This could be attributed to inefficient education systems in both countries, even though the origin of “disruption” is different: in Albania prevails the non-meeting of academic standards whereas in Kosovo large part of inefficiency is still attributable to its past under ex-Yugoslavia and the recent armed conflict.
• Health literacy is also associated with self-perceived health status and self-reported chronic morbidities among older people in Kosovo, thus resembling previous international research data.
• TOFHLA and HLS-EU-Q could be used in Albania and Kosovo for exploring health literacy in large-scale studies.
• In Albania the lowest mean health literacy scores were noticed regarding health promotion domain, followed by disease prevention and health care domain in which people performed better in terms of health literacy. These results are similar to findings in other European countries.
• Health literacy has never been an issue of health policies neither in Albania nor in Kosovo.

Recommendations for policy formulation in Albania and Kosovo

Given that Albania and Kosovo are in similar development stage, both are experiencing major reforms and both are characterized by similar political and social tensions, and based on the surveys conducted in these countries, the following recommendations are outlined for policy formulation:
• In the context that health literacy is associated with numerous adverse health and economic outcomes then health literacy should be introduced as soon as possible into health policy agendas and be part of government, professional and public debate in both countries.
• Health literacy research in Albania and Kosovo should be increased at a much higher level in order to provide thorough and comprehensive estimates of health literacy and the extent to which different factors contribute to health literacy at national levels.
• Maybe there is need to establish the Committee of Health Literacy which will provide the necessary guidelines and regulations and will foster and promote health literacy research and the ways to mitigate its adverse effects, as in other countries where health literacy is central to health policy.
• Given the high prevalence of low health literacy there is urgent need to react to this situation through a series of interventions, traditional and innovative ones, as suggested by international literature and based on best experiences and practices.
• Given that education is a strong determinant of health literacy both in Albania and Kosovo then this is another compelling motive for urging respective governments to increase education financing and ensure that the education system is efficient, of high quality and equitable in order for it to fulfill its mission.
• Every effort should be made in order for health literacy activities to reach the most disadvantaged population groups such as older people, the least well off and the least educated.
Concluding Remarks

This study provides important evidence on the socio-demographic and economic factors associated with health literacy in Albania and Kosovo and for the first time provides information on health literacy and the prevalence of limited health literacy in these two transitional South East European countries. Both countries are characterized by heavy political turmoil, vast reforms, high levels of corruption, disoriented education system and lack of accountability. These findings offer valuable baseline information for decision-makers and policy-makers involved in the health care sector in Albania and Kosovo. The topic of health literacy has not been previously reported for Albania and Kosovo. Therefore, these are amongst the few countries of Western Balkan where health literacy has been studied. We have reported on important associations between socio-demographic and socioeconomic characteristics, self-perceived health status and self-reported chronic morbidity with health literacy and also gave a detailed overview of the prevalence of limited health literacy in these populations of South East Europe. Indeed, the prevalence of health literacy and factors associated with it in the Albanian speaking-populations of the Western Balkans has received very little attention in the literature. From this point of view, this study makes a useful international contribution.

Nevertheless, findings of our study require confirmation and replication in future studies in Albania and Kosovo and in other emerging/transitional populations in order to provide a solid foundation for policy formulation. This study, hopefully, will serve to stimulate such further research on this topic.
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CHAPTER 9

Summary
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BACKGROUND, AIM, AND RESEARCH QUESTIONS

Health literacy is recently gaining increasing attention from the international scientific community because of its potential multidimensional links with both health determinants and outcomes. Being explored mainly in the United States, Australia, Canada and Western Europe the concept of health literacy is largely overlooked in Western Balkan countries whereas no reports are available for Albania and Kosovo. In this context, this is the first study exploring the concept of health literacy, its distribution and associated factors in these Albanian speaking countries.

The aim of this study was four-fold:

• To validate the HLS-EU-Q and TOFHLA, two international instruments measuring health literacy, in the adult population of Albania and Kosovo;
• To assess the associations of health literacy with socioeconomic factors, self-perceived health and self-reported chronic morbidity in a large nationwide representative sample of older men and women (individuals aged ≥65 years) in the Republic of Kosovo;
• To assess the socio-demographic and socioeconomic factors associated with functional health literacy in a representative sample of primary health care users (individuals aged ≥18 years) in the Republic of Kosovo;
• To assess the associations of health literacy with socio-economic and socio-demographic factors in a representative population-based sample of individuals aged ≥18 years in Albania.

We hypothesized that health literacy is associated with background demographic and socioeconomic characteristics of the adult population under study in Albania and Kosovo. Furthermore, we hypothesized that health literacy is positively associated with self-reported health status, but inversely related to self-reported chronic morbidity of the target study populations. In addition, we hypothesized that health literacy is negatively related to measures of obesity (such as e.g. body mass index) of the respondents.

METHODS

We conducted three separate surveys in addition to one validation exercise in line with the aims of this research work:

• A nationwide survey (cross-sectional study) was conducted in Kosovo in January-March 2011. This study employed an age- sex-and residence (urban vs. rural)-
A stratified sample of 1753 individuals aged 65 years and over (886 men, mean age 73±1 years; 867 women, mean age 74±7 years; overall response rate: 77.4%).

- Another survey (cross-sectional study) was conducted in November 2012-February 2013 in Kosovo including a representative sample of 1035 primary health care users aged ≥18 years old (414 males, mean age: 44.7±17.2 years; 621 females, mean age: 44.0±16.8 years; overall response rate: 86.3%).
- A large-scale validation study of HLS-EU-Q and TOFHLA health literacy instruments was conducted in September-December 2013 in Tirana, Albania including a population-representative sample of adults aged 18 years and older (92 men, mean age: 47.6±18.3 years; 147 females, mean age: 40.0±16.7 years; overall response rate: 87.2%).
- A third survey (cross-sectional study) was conducted during September 2012-February 2014 in Tirana, Albania including a representative sample of 1154 individuals aged 18 years or older (501 men, mean age: 46.0±16.7 years; 653 females, mean age: 45.2±16.1 years; overall response rate: 88.6%).

RESULTS AND DISCUSSION

In a large population-based sample of older people in Kosovo, mean health literacy scores varied significantly according to their socio-demographic characteristics. Men, the youngest individuals (participants aged 65-74 years old), urban residents, those having at least one year of formal schooling and those perceiving themselves as not poor had significantly higher mean health literacy scores compared to their counterparts. The main factors affecting health literacy scores were age and education with the oldest individuals and those having no formal schooling exhibiting extremely lower mean health literacy scores compared with their younger and the more educated counterparts.

Furthermore, we evidenced remarkable differences in mean scores of health literacy among older people according to their self-perceived health status and the presence of chronic morbidity. After controlling for age, sex, education, marital status, place of residence and self-perceived poverty, individuals with self-perceived poor health status and those reporting at least one chronic condition exhibited significantly lower mean health literacy scores compared to their healthier counterparts. The higher the number of chronic conditions, the lower the mean health literacy score.

A noteworthy finding in a large sample of primary health care users aged 18 years or older in Kosovo was the especially high prevalence of limited functional health literacy as measured by the TOFHLA instrument: four out of five (80.6%) primary health care users had inadequate (43.8%) and marginal (36.8%) functional health literacy. In multivariable-adjusted analysis, mean functional health literacy scores were significantly lower among the oldest subjects under study, individuals with lower education level,
and the unemployed. Interestingly, mean functional health literacy scores were similar among men and women, but men were significantly more likely to report adequate functional health literacy levels compared to women (OR=1.45, P=0.041).

The relatively large-scale validation study of two major health literacy instruments in a representative population-based sample of adults aged 18 years or older in Albania yielded novel evidence about health literacy, a topic not previously addressed by researchers in this South Eastern European country. Both TOFHLA and HLS-EU-Q instruments showed good internal consistency (Cronbach’s alpha: 0.92 and 0.98, respectively) and good test-retest reliability (Spearman’s rho: 0.87 and 0.88, respectively). The correlation coefficient of instruments was moderate (Spearman’s rho: 0.493). Functional health literacy (as measured by TOFHLA) and health literacy (as measured by HLS-EU-Q) scores were significantly associated with age, education, body mass index and economic status of participants, with education and age being most strongly associated with limited health literacy.

The study of health literacy using the HLS-EU-Q instrument in a large population-based sample of adults aged 18 year or older in Albania suggested that the mean health literacy scores were lower for health promotion domain, a bit higher for disease prevention domain, and the highest for health care domain. Mean health literacy scores were significantly lower among older respondents, individuals with lower formal years of schooling and those with lower social and economic status, in both men and women. In women, the independent variable most strongly associated with HL scores was age (Spearman’s rho coefficient ranging from -0.228 for the association with health care health literacy to -0.346 for the association with health promotion health literacy), whereas in men it was education (Spearman’s rho coefficient ranging from 0.189 for the association with health care health literacy to 0.236 for the association with health promotion health literacy).

In conclusion, this study provides important novel evidence on the levels and socioeconomic correlates of health literacy in Albanian settings of the Western Balkans – a particularly under-researched topic in this area of Europe undergoing a particularly rapid political and socioeconomic transition and striving for accession in the European Union. Health care professionals, but particularly decision-makers and policymakers in Albania and Kosovo should be aware of the importance of assessment of health literacy levels and the respective consequences for the health status and wellbeing in their populations. Nevertheless, future research should replicate and expand our findings employing particularly prospective studies in order to establish the causal links between health literacy levels and health outcomes.
Samenvatting

ACHTERGROND, DOEL EN ONDERZOEKSVRAGEN

De wetenschappelijke wereld besteedt momenteel aandacht aan gezondheidscompetenties in verband met de multi-dimensionale connectie met zowel de factoren die hierin bepalend kunnen zijn als ook de effecten ervan. Het concept van gezondheidscompetenties dat met name onderzocht is in de Verenigde Staten, Australië, Canada en West-Europa, heeft niet of nauwelijks aandacht gekregen in de Westerse Balkanlanden alwaar geen rapporten over Albanië en Kosovo beschikbaar zijn. Dit is de eerste studie in deze context die het concept van gezondheidscompetenties onderzocht alsmede de verspreiding daarvan en van aanverwante factoren in deze Albaanse spraakende landen.

Het doel van de studie was vierledig.

- Ter validatie van de HLS-EU-Q en TOFHLA, twee internationale meetinstrumenten voor gezondheidscompetenties, onder de volwassen bevolking van Albanië en Kosovo.
- Het bepalen van associaties inzake gezondheidscompetenties met sociaal-economische factoren, hoe gezondheid ervaren wordt en gerapporteerde chronische ziekten in een grote, nationale bevolkingsgroep van 65-plussers (m/v) in Kosovo.
- Het bepalen van sociaal-demografische en sociaal-economische factoren gelieerd aan functionele gezondheidscompetenties in een representatieve groep (≥18 jaar) die gebruik maakt van eerstelijnsgezondheidszorg in Kosovo.
- Het bepalen van verbanden met betrekking tot gezondheidscompetenties met sociaal-economische en sociaal-demografische factoren in een representatieve groep inwoners van ≥18 jaar in Albanië.

In de studie is ervan uitgegaan dat gezondheidscompetenties in verband gebracht kunnen worden met de demografische achtergrond en sociaal-economische factoren van de volwassen populatie die betrokken was bij de studie in Albanië en Kosovo. Verder werd verondersteld dat gezondheidscompetenties positief geassocieerd kunnen worden met de eigen bevindingen voor wat betreft gezondheidsstatus, maar dat het juist andersom is als het gerelateerd is aan eigen bevindingen van chronische ziekte van de doelgroep. Aanvullend hieraan is ervan uitgegaan dat gezondheidscompetenties negatief gerelateerd zouden worden indien ze gemeten werden aan zwaarlijvigheid (zoals o.a. body mass index) van de ondervraagden.
METHODEN

Er zijn drie afzonderlijke onderzoeken verricht als aanvulling aan een gevalideerde studie in lijn met de doelstellingen van dit onderzoek.

• Een nationaal onderzoek (dwarsdoorsnede studie) is uitgevoerd in Kosovo gedurende de periode januari-maart 2011. Deze studie omvatte een leeftijd-, gender- en (stedelijk versus landelijk) woonplaats-gestraficeerde steekproef onder 1753 personen van 65 jaar en ouder (886 mannen, gemiddelde leeftijd 73±1; 867 vrouwen, gemiddelde leeftijd 74±7: totale respons: 77.4%).

• Een andere (dwarsdoorsnede) studie is uitgevoerd in Kosovo in de periode november 2012-februari 2013 waarin een representatieve groep van 1035 mensen ≥18 (414 mannen, gemiddelde leeftijd: 44.7±17.2; 621 vrouwen, gemiddelde leeftijd: 44.0±16.8; totale respons: 86.3%) die gebruik maakten van eerstelijnsgezondheidszorg.

• Een grootschalige validatie-studie van HLS-EU-Q en TOFHLA-instrumenten voor gezondheidscompetenties, is uitgevoerd in de periode september-december 2013 in Tirana, Albanië, inclusief een representatieve bevolkingsgroep van volwassen van 18 jaar en ouder (92 mannen, gemiddelde leeftijd 47.6±18.3; 147 vrouwen, gemiddelde leeftijd: 40.0±16.7; totale respons: 87.2%).

• Een derde representatieve studie werd uitgevoerd in de periode april 2012-februari 2014 te Tirana, Albanië. Deze behelsde een representatieve steekproef van 1154 personen van 18 jaar of ouder (501 mannen, gemiddelde leeftijd: 46.0±16.7; 653 vrouwen, gemiddelde leeftijd: 45.2±16.1; totale respons: 88.6%).

RESULTATEN EN DISCUSSIE

In een omvangrijke steekproef, onder de ouderenpopulatie in Kosovo, verschilten de gemiddelde scores op gezondheidscompetenties aanzienlijk al naar gelang de sociodemografische eigenschappen. Mannen, de jongste personen (leeftijd deelnemers 65-74 jaar), wonende in een stad met tenminste één jaar formeel onderwijs/opleiding, die zichzelf niet arm vinden, hadden een significant hogere gemiddelde score op gezondheidscompetenties dan hun tegenhangers. De belangrijkste factoren die gezondheidscompetenties beïnvloeden, bij de oudste personen, zijn leeftijd en onderwijs. Zij die geen formeel onderwijs/opleiding hadden genoten toonden extreem lagere gemiddelde scores voor wat betreft gezondheidscompetenties in vergelijking met hun jongere en meer opgeleide tegenhangers.

Bovendien werden aanzienlijke verschillen geconstateerd in de gemiddelde scores met betrekking tot gezondheidscompetenties onder oudere personen al naar gelang de wijze waarop ze hun eigen gezondheid zagen en het hebben van een chronische ziekte. Na verificatie op leeftijd, gender, educatie, huwelijkse staat, woonplaats, en personen
die zelf vinden dat ze in armoede leven en zij die melden dat ze tenminste aan één chronische kwaal lijden, toonden significant lagere gemiddelde scores op gezondheidscompetenties dan hun tegenhangers. Hoe hoger het aantal chronische kwaal, hoe lager de gemiddelde gezondheidscompetentiescore.

In een grote groep personen van 18 jaar en ouder, die gebruik maakt van eerstelijnsgezondheidszorg in Kosovo, was vooral de prevalentie van beperkte functionele gezondheidscompetenties (gemeten met behulp van het TOFHLA-instrument) een opmerkelijke bevinding; vier van de vijf (80.6%) personen die gebruik maakten van de eerstelijnsgezondheidszorg hadden inadequaten (43.8%) en marginale (36.8%) functionele gezondheidscompetenties.

In multivariabel-aangepast onderzoek waren de gemiddelde scores voor functionele gezondheidscompetenties significant lager onder de oudste patiënten, personen met een lager opleidingsniveau alsook werklozen. Verrassenderwijs waren de gemiddelde scores voor functionele gezondheidscompetenties hetzelfde bij mannen als bij vrouwen, maar mannen waren meer geneigd om adequate functionele gezondheidscompetenties te melden in vergelijking met vrouwen (OR=1.45, P=0.041).

De relatief grootschalige validatie-studie van twee grote gezondheidscompetentie-instrumenten, in de vorm van een steekproef onder een representatieve populatie onder volwassenen van 18 jaar of ouder in Albanië, leverde verrassend bewijs inzake gezondheidscompetenties; een onderwerp waar onderzoekers zich nog niet eerder mee hebben bezig gehouden in dit zuidoost Europees land. Zowel TOFHLA alsook de HLS-EU-Q gaven een goede interne consistentie weer (Cronbach’s alpha: respectievelijk 0,92 en 0,98) en goede test-hertest betrouwbaarheid (Spearman’s rho: respectievelijk 0,87 en 0,88). De correlatiecoëfficiënt was gemiddeld (Spearman’s rho: 0,493). De scores van functionele gezondheidscompetenties (gemeten door TOFHLA) en gezondheidscompetenties (gemeten door HLS-EU-Q) waren duidelijk te relateren aan leeftijd, educatie, body mass index en de economische status van de deelnemers, waarbij opleiding en leeftijd het meest geassocieerd konden worden met beperkte gezondheidscompetenties.

Het onderzoek naar gezondheidscompetenties waarbij de HL-EU-Q werd gebruikt in een groep van volwassenen van 18 jaar of ouder in Albanië, suggereerde dat de gemiddelde gezondheidscompetenties lager waren op het gebied van gezondheidspromotie, een beetje hoger op het vlak van ziektepreventie en het hoogst in de gezondheidszorg. De gemiddelde scores – voor zowel mannen als vrouwen – met betrekking tot gezondheidscompetenties waren significant lager bij oudere respondenten, personen die weinig onderwijs hadden genoten en zij die een lagere sociaal-economische status hadden. Bij vrouwen speelde de leeftijd de belangrijkste rol in relatie tot gezondheidscompetentie (Spearman’s rho coefficiënt variërend van -0,228 voor de associatie met gezondheidscompetenties tot -0,346 voor de associatie met gezondheidspromotie in relatie tot gezondheidscompetenties. Bij mannen was het echter de opleiding (Spearman’s rho coefficiënt variërend van 0,189 voor de associatie met gezondheidszorg in relatie tot
gezondheidscompetentie tot 0.236 voor de associatie met gezondheidspromotie in relatie tot gezondheidscompetenties).

Concluderend kan gesteld worden dat deze studie belangrijk nieuw bewijs levert op diverse vlakken en sociaal-economische niveaus van gezondheidscompetenties in Albanese settings van het westelijke deel van de Balkan, een gebied in Europa waarin te weinig onderzoek is gedaan, dat een bijzonder snelle politieke en sociaal-economische transitie doormaakt en dat streeft naar toetreding tot de Europese Unie. Gezondheidsdeskundigen, maar vooral beleidsmakers in Albanië en Kosovo, zouden zich bewust moeten zijn van het belang van toetsing van niveaus van gezondheidscompetenties en de daaraan verbonden consequenties voor de gezondheidsstatus en het welbevinden van hun bevolking.

Desalniettemin, zou in de toekomst herhaalonderzoek dienen te worden verricht om onze bevindingen uit te breiden, waarbij met name gebruik gemaakt zou moeten worden van toekomstgerichte studies om zo het causaal verband aan te tonen tussen niveaus van gezondheidscompetenties en gezondheidseffecten.
Përmbledhje

SFONDI, QËLLIMI DHE PYETJET E HULUMTIMIT

Koncepti i kompetencave shëndetësore po të rëheq një vëmendje në rritje nga komunite- ti shkencor ndërkombëtar për shkak të lidhjeve potenciale shumë-dimensionale të tyre me faktorët përcaktues dhe gjendjeve të shëndetit. I hulumtuar kryesisht në Shtetet e Bashkuara të Amerikës, Australi, Kanada dhe Europën Perëndimore, koncepti i kompetencave shëndetësore është studuar pak në vendet e Ballkanit Perëndimor kurse për Shqipërinë dhe Kosovën nuk disponohen të dhënat lidhur me këtë çështje. Në këtë kontekst, ky është studimi i parë që heton konceptin e kompetencave shëndetësore, spërndarjen dhe faktorët e lidhur me të në Shqipëri dhe Kosovë.

Qëllimi i këtij studimi ishte i katërfishtë:
• **Validimi** i HLS-EU-Q dhe TOFHLA, dy instrumentë ndërkombëtarë për matjen e kompetencave shëndetësore, në popullatën adulte të Shqipërisë dhe Kosovës;
• Përcaktimi i lidhjeve të **kompetencave shëndetësore** me faktorët social-ekonomikë, shëndetin e vetë-perceptuar dhe sëmundshmërinë kronike të vetë-raportuar në një kampion të madh përfaqësues nga mbarë vendi të burrave dhe grave të moshuara (individët e moshës ≥ 65 vjeç) në Republikën e Kosovës;
• Vlerësimi i faktorëve socio-demografikë dhe socio-ekonomikë të lidhur me **kompetencat shëndetësore funksionale** në një kampion përfaqësues të përdoruesve të kujdesit shëndetësor parësor (individë të moshës ≥18 vjeç) në Republikën e Kosovës;
• Vlerësimi i lidhjeve të **kompetencave shëndetësore** me faktorët socio-demografikë dhe socio-ekonomikë në një kampion përfaqësues të bazuar në popullatë të individëve të moshës ≥18 vjeç në Shqipëri.

Ne supozuam që kompetencat shëndetësore janë të lidhura në mënyrë statistikore me karakteristikat bazë demografike dhe socio-ekonomike të popullatës adulte në studim në Shqipëri dhe Kosovë. Gjithashtu, ne supozuam që kompetencat shëndetësore janë të lidhura në mënyrë pozitive me gjendjen shëndetësore, kurse lidhjet me sëmundshmërinë kronike të vetë-raportuar të popullatave target në studim janë negative. Së fundmi, ne supozuam edhe që kompetencat shëndetësore janë të lidhura në mënyrë negative me madhësitet matëse të obezitetit (të tillë si indeksi i masës trupore) të subjekteve në studim.
MATERIALI DHE METODA

Ne ndërmorëm tre studime të vecanta si dhe një ushtrim për validimin e instrumentave matës të kompetencave shëndetësore në përputhje me qëllimet e këtij punimi shkençor:

- Një studim në shkallë kombëtare (i tipit kros-seksional) u realizua në Kosovë në Janar-Mars 2011. Ky studim përfshirë një kampion të stratifikuar sipas moshës-gjinisë dhe venbanimit (urban vs. rural) të 1753 individëve të moshës 65 vjec e lart (886 meshkuj, mosha mesatate 73±1 vit; 867 femra, mosha mesatare 74±7 vjet; nivel i përgjithshëm i përgjigjies: 77.4 %)

- Një tjetër studim (i tipit kros-seksional) u realizua në Nëntor 2012 – Shkurt 2013 në Kosovë duke përfshirë një kampion prej 1035 përdoruesve të kujdesit shëndetësor parësor të moshës ≥18 vjec (414 meshkuj, mosha mesatare: 44.7±17.2 vjet; 621 femra, mosha mesatare: 44.0±16.8 vjet; nivel i përgjithshëm i përgjigjies: 86.3%).

- Një studim në shkallë të gjërë për validimin e instrumentëve matës të kompetencave shëndetësore HLS-EU-Q dhe TOFHLA u realizua në Shqipëri në Shtator-Dhjetor 2013 në Tirane, duke përfshirë një kampion përfaqësues të bazuar në popullatë të adultëve të moshës ≥18 vjec (92 meshkuj, mosha mesatare: 47.6±18.3 vjet; 147 femra, mosha mesatare: 40.0±16.7 vjet; nivel i përgjithshëm i përgjigjies: 87.2%).

- Një tjetër studim (i tipit kros-seksional) u realizua në Shtator 2012-Shkurt 2014 në Tirane duke përfshirë një kampion përfaqësues prej 1154 indivi ësh të moshës ≥18 vjec (501 meshkuj, mosha mesatare: 46.0±16.7 vjet; 653 femra, mosha mesatare: 45.2±16.1 years; nivel i përgjithshëm i përgjigjies: 88.6%).

REZULTATET DHE DISKUTIMI

Në një kampion të madh të bazuar në popullatë të të moshuarve në Kosovë, rezultati mesatar i kompetencave shëndetësore varionte në mënyrë domethënëse sipas karateristikave socio-demografike të tyre. Meshkujt, individet më të rinj në moshë (pjesëmarrësit e moshës 65-74 vjeç), ata që banojnë në zonat urbane, individet me të paktën një vit edukimi formal si dhe individet që e perceptojnë veten si jo të varfër paraqitën rezultate mesatare të kompetencave shëndetësore në mënyrë domethënëse më të larta krahasuar me koleg ët e tyre. ¹ Faktorët kryesorë që ndikojnë në rezultatin e kompetencave shëndetësore ishin mosha dhe edukimi ku individet më të moshuar dhe ata pa arsim formal paraqitën rezultate mesatare të kompetencave shëndetësore në mënyrë domethënëse më të ulëta krahasuar me kolegët më të rinj në moshë dhe me nivel të lartë edukimi.

Përveç kësaj, ne evidentuam diferenca domethënëse të rezultateve mesatare të kompetencave shëndetësore midis të moshuarve sipas statusit shëndetësor të vetë-perceptuar dhe pranisë së sëmundjeve kronike. Pas kontrollit të efekteve të moshës,
gjinisë, edukimit, gjendjes civile, vendbanimit dhe varfërisë së vetë-perceptuar, individët që e vetë-perceptojnë statusin e tyre shëndetësor si të dobët dhe ata që raportojnë të paktën një sëmundje kronike paraqiten rezultate mesatare të kompetencave shëndetësore në mënyrën domethënëse më të ulëta krahasuar me kolegjat e tyre më të shëndetshëm. Sa më i lartë numri i sëmundjeve kronike aq më shumë rritet rezultati mesatar i kompetencave shëndetësore.

Një gjetje interesante në një kampion të madh përdoruesh të kujdesit shëndetësor parësor të moshës 18 vjeç e lart në Kosovë ishte prevalenca jazhtëzakonisht e lartë e kompetencave shëndetësore funksionale të kufizuara në maturë nëpërmjet instrumentit TOFHLA: katër në pesë (80.6%) përdorues të kujdesit shëndetësor parësor kishin kompetenca shëndetësore funksionale të papërshtatshme (43.8%) dhe në kufi (36.8%). Në analizën multivariate, rezultatet mesatare të kompetencave shëndetësore ishin në mënyrën domethënëse më të ulëtë midis individëve me më të moshuar, me nivel të ulët edukimi dhe të papunë.³ Në mënyrën interesante, rezultatet mesatare të kompetencave shëndetësore ishin në njëshme midis meshkujve dhe femrave por meshkujt kishin në mënyrën domethënëse më shumë të ngjarë të raportonin nivele të përshtatshme të kompetencave shëndetësore funksionale krahasuar me femrat (OR=1.45, P=0.041).

Studimi relativisht i madh për validimin e dy instrumentëve për matjen e kompetencave shëndetësore në një kampion të madh përfaqësues të bazuar në popullatë të individëve 18 vjeç e lart në Shqipëri nxorri në pah fakte të reja lidhur me kompetencat shëndetësore, një koncept i pa-studuar më parë në këtë vend të Europës jug-lindore. Të dy instrumentët, TOFHLA dhe HLS-EU-Q paraqiten qëndrueshmëri të brendshme të mirë (Cronbach’s alpha 0.92 dhe 0.98, përkatësisht) dhe besueshmëri të mirë të tipit test–ritest në kohë (Spearman’s rho 0.87 dhe 0.88, përkatësisht). Koeficientët i korrelacionit të dy instrumentëve ishte i moderuar (Spearman’s rho 0.493). Rezultatet e kompetencave shëndetësore funksionale (të matura nëpërmjetojnën instrumentit TOFHLA) dhe kompetencave shëndetësore (të matura nëpërmjetojnën instrumentit HLS-EU-Q) ishin të lidhura në mënyrën domethënëse me moshën, edukimin, indeksin e masës trupore dhe statusin ekonomik të pjesëmarrësve, ku edukimi dhe mosha rezultuan variablalet e lidhura më fort statistikisht me kompetencat shëndetësore të kufizuara.

Studimi i kompetencave shëndetësore nëpërmjetojnë instrumentit HLS-EU-Q në një kampion të madh përfaqësues të bazuar në popullatë të individëve të moshës 18 vjeç e lart në Shqipëri sugjeroi që rezultatet mesatara të kompetencave shëndetësore ishin më të ulëta për dimensionin e promocionit të shëndetit, disi më të larta për dimensionin e parandalimit të sëmundjeve dhe më të larta për dimensionin e kujdesit shëndetësor. Rezultatet mesatara të kompetencave shëndetësore ishin në mënyrën domethënëse më të ulëta midis subjekteve më të moshuar, individëve me më pak vite edukimi formal dhe ata me nivel të ulët ekonomik dhe social, si në meshkuj ashtu dhe në femra. Midis femrave, faktori i pavarur i lidhur më fort me rezultatin mesatar të kompetencave shëndetësore ishte mosha (koeficienti Spearman’s rho varioant nga -0.228 për lidhjen me kompetencat shëndetësore të kujdesit shëndetësor deri në 0.346
për lidhjen me kompetencat shëndetësore të promocionit të shëndetit), ndërsa në meshkuj ky faktor ishte edukimi (koeficienti Spearman’s rho varionte nga 0.189 për lidhjen me kompetencat shëndetësore të kujdesit shëndetësor deri në 0.236 për lidhjen me kompetencat shëndetësore të promocionit të shëndetit).

Në përmbledhje, ky studim ofroi të dhëna të rëndësishme të padisponente me nivelin dhe faktorët demografikë dhe socio-ekonomikë përçaktues të kompetencave shëndetësore në vendet Shqip-folëse të Ballkanit Perëndimor – një fu- shë veçanërisht e nën-studuar në këtë zonë të Europës që po përjeton një tranzicion të shpejtë politik dhe socio-ekonomik në kudër të aspiratave për t’u bërë pjesë e Bash- kimit Europian. Profesionistët e kujdesit shëndetësor, por veçanërisht vendim-marrësit dhe politikë-bërësit në Shqipëri dhe Kosovë duhet të ndërgjegjësohen rreth rëndësisë së vlerësimit të nivelit të kompetencave shëndetësore dhe pasojave përgjegjëse për gjendjen shëndetësore dhe mirëqëzëni e komuniteteve të tyre. Sidoqoftë, është e nevojshme që kërkime shkencore të mëtejshme të mbështesin dhe zgjerojnë gjetjet aktuale, mundësisht nëpërmjet studimeve prospektive, në mënyrë që të përcaktohen në mënyrë të padyshimit të lidhjet shkakësore midis nivelit të kompetencave shëndetësore dhe gjendjeve shëndetësore.
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Ervin Toçi was born on November 29th, 1979 in Elbasan, Albania. He studied at the Medical Faculty, University of Tirana, where he graduated as “General Practitioner” (GP). Ervin holds an International Master of Public Health (IMPH) degree in public health and he is a public health specialist.

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In 2010 he was appointed as coordinator of the European School Survey Project on Alcohol and Other Drugs (ESPAD) for Albania, a position which he holds currently as well.

Since 2007 Mr. Toçi has been lecturing epidemiology and research methods at the Department of Public Health, Faculty of Medicine, University of Tirana. Currently, Mr. Toçi holds the position of lecturer in the premises of Faculty of Public Health, University of Medicine, Tirana, Albania.
List of publications


Health literacy in the Western Balkans
The example of Albania and Kosovo
Ervin Toçi