DOCTORS AND OLDER PATIENTS’ HEALTH LITERACY ON FUNCTIONAL DECLINE AND FRAILTY RELATED TO AGEING - DATA FROM Romania AND Latvia

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Abstract
This study generated data on the levels of health literacy of doctors and older patients (60+ years old) concerning the functional decline and frailty related to aging in Romania and Latvia. The study tackles the lack of data on the topic and provides insight from two EU member states that struggle with a fall in fertility coupled with a high percentage of outward migration predominantly in the young age working population. 300 doctors responded to the questionnaire. Another 301 responses were received from 60+ older patients living in Romania and Latvia. The study adapted the conceptual HLS-EU general model that defines the health literacy as basically referring to the following personal competencies: access, understand, appraise, and apply specific information. The self-declared awareness concerning the functional decline and frailty was high for both patients and doctors (over 70%). However, the overall level of health literacy on both items were determined by a degree of access, understanding, appraisal, and the application of the knowledge about the functional decline and frailty. These health literacy components are much lower in patients, with over 20% of respondents finding it difficult to access and understand the relevant information. In the case of doctors, there appears a discrepancy between the claim of a problem with health literacy and the actual responses sometimes pointing not to having a full knowledge of the issue.

Keywords: health literacy, functional decline, frailty, 60+older patients, doctors, healthy aging

1. Introduction
The present study generated data for the first time on the levels of health literacy on functional decline and frailty, related to aging, for doctors and older patients1) (60+ years old) in Romania and Latvia. The study tackles not only the lack of data on the topic, but it provides insight from two EU member states, a Central-Eastern and a Baltic member state, that (also) struggle with the fall in fertility2 coupled with the high percentage of outward migration predominantly within the early working age population. The study has its basis on two surveys, one addressed at 60+ older adult patients and another, addressed at doctors and is build on the conceptual framework of the European Health Literacy Project (HLS-EU). The survey for patients also aims to assess the awareness, opinion and attitude of the population aged over 60 regarding healthy and active aging. The survey for doctors aims to assess the awareness of doctors on functional performance (capacity) decline and frailty related to aging and their possibilities to prevent/ delay the onset of these issues and/or mitigate their consequences. Projections on the aging of the population in Romania and Latvia are particularly worrying as the fall in fertility, migration and life expectancy that is below that of the EU-15 initial member states, accelerate the impact of the projected demographic challenges5,6 at an unprecedented rate.

2. Methodology
The conceptual framework of the questionnaires was derived from the conceptual model and definition developed by the HLS-EU. HLS-EU definition states that it 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." Hence, this survey focuses

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on the ability of doctors and patients to find, understand, judge and use information to make decisions concerning the prevention of functional (capacity) decline and frailty, related to aging. Functional (capacity) decline and frailty can be defined as outlined in Annex I\textsuperscript{11\textendash}18). Annex I presents a literature review of main definitions about functional decline and frailty.

3. Conceptual Model

"The conceptual model integrates three health relevant areas (health care, disease prevention, health promotion) and four information processing stages (access, understand, appraise, apply) related to health relevant decision-making and tasks."\textsuperscript{7) Awareness is a 5\textsuperscript{th} stage we have added – and it precedes the four information processing stages, being the usual "chronological" sequence of learning about new information. To the three relevant above mentioned areas (healthcare, disease prevention, health promotion) we have added: general knowledge. This conceptual model / framework has been operationalized through specific questions within the questionnaire related to each of our two pilot surveys (for doctors and respectively, for 60+ older adult patients) and assessed (evaluation paradigm) through a 4-point self-reported scale, ranging from "very easy" to "very difficult" as well as having "don’t know" (as an answer option). "These areas and stages combined create a matrix measuring HL\textsuperscript{7) on functional decline and frailty, related to aging. Figure 1 below depicts the main parts of this model. The conceptual model for the questionnaires within the survey(s) was operationalized to cover five domains/stages and sections:

1. Awareness about functional decline and frailty related to aging
2. Ability to access information concerning functional decline and frailty related to aging
3. Ability to understand information concerning functional decline and frailty related to aging
4. Ability to appraise information concerning functional decline and frailty related to aging
5. Ability to apply information concerning functional decline and frailty related to aging
Accordingly, two sets of questions/questionnaires were developed: one embedded within the related survey for doctors and one for 60+ older adult patients, respectively. The questions were developed by an expert panel from various disciplines such as: Gerontology & Geriatrics, HL, Physical & Rehabilitation Medicine, Rheumatology, Neurology, Psychiatry, Internal medicine, Cardiology, Orthopedics, Occupational Medicine, General Practice, other. Specific attention was given to ensure plain and simple wording – despite approaching a quite new and complex field – in the development of questions. The questionnaire for doctors has been conceived in English and will be used as such. The questionnaire for 60+ older adult patients has been translated from English (the original language of the surveys) into Romanian and Latvian using translation-back-translation and in print format. Also, both kinds of questionnaires have been uploaded using an online questionnaire platform (SurveyMonkey). The conceptual model is sustained by several indices. In each case, a dimension within the conceptual model is matched by a stage of processing and each index represents this conceptualization. The two surveys also include several correlations in order to ensure construct validity as well as criterion validity to a high degree. The types of answer options enable statistical analysis in the sense that both surveys may include, too, for calculations, models such as: ordinal integrated (instead of numerical) – median (inter-quartile) frequency of correct answers, dispersion instead of variance, Somer’s delta instead of Pearson correlation coefficient – or binary (frequency of yes answers).

Following the survey analysis methodology in healthcare, provided by Ian McDowell, the construct of these two surveys reflected on construct validity and reliability making sure appropriate correlations are in place.

### Structure of the questionnaire for 60+ older adult patients

The questionnaire for 60+ older adult patients consists of 48 questions (Annex II)

### Structure of the questionnaire for Doctors

The questionnaire for doctors consists of 47 questions (Annex III)

Each questionnaire consists of six sections: one section with general personal information about the respondent and five sections collecting information on awareness, access, understanding, appraisal and application of information on functional decline and frailty related to aging.

### 4. Ethics

All respondents were informed about the aim of the survey and how the results will be used and disseminated and expressed informed consent before answering the questionnaire. Please see Annex II and Annex III to consult the informed consent information presented to respondents.

### 5. Materials and Methods

301 responses were received from 60+ older patients living in Romania and Latvia, 300 doctors responded to the questionnaire: 148 doctors practicing in Romania and 150 in Latvia, 1 Romanian doctor indicated Andorra was his main place of practice and another one indicated Nigeria as his main country of practice. These two surveys included separate customized questionnaires on the subject matter for 60+ older patients as well as for health professionals and were carried out between April-October 2014. The responses were collected, analyzed and joined together with related EU policy recommendations, between October-April 2015. The respective questionnaires have adapted, as for functional decline and frailty related to aging, the conceptual HLS-EU general model, that defines health literacy as basically referring to the following personal competencies, i.e. to: access, understand, appraise and apply specific information. Statistical analysis was done using SPSS V22.0, last accessed 06.11.2014, at 14.00 hours.

### 6. Results

Concerning 60+ older patients, most respondents were aged between 65 and 74 years (38.2%), 65% live with their family, 73.4% were fully retired whereas only 8.3% were not retired. 12.6% declared that family and home were their work. A very high number of patients declared to be aware of age-related functional decline: 76.4%. The main source of information on functional decline is represented by doctors (54.8%), health broadcasts (22.9%), relatives, friends (20.3%) and journals (19.9%). As for frailty the responses were similar: 50.8% saw doctors as a main source of information and instead of journals, magazines were on the
Please see Annex IV and Annex VI that present a summarized overview of patients’ results as well as full graphic overview of their answers. A rather significant percentage of patients found it difficult to access information on the functional decline (18.6%). Most respondents, however, found it easy to access functional decline information (46.18%). The related answers about frailty were similar, ranging from easy (46.51%) to very easy (10.96%) and – again – a rather significant percentage indicated it is difficult to access information (18.27%). The most trusted sources of information were: doctors, health broadcasts, nurses, pharmacists and magazines. 44.2% of respondents indicated that TV and radio programs, a hotline where the public could call, an increase in awareness of physicians and the young generation about these issues are measures that should be implemented to prevent functional decline and frailty, related to aging. Based on the conceptual model of HLS-EU and the results summarized in Annex IV, over 20% of patients have problematic health literacy. Significant difficulties to access, understand, appraise and apply the concepts exist. While the levels of access may be improved, the understanding of functional decline and frailty is even a bigger problem with around 20% of the respondents having difficulty understanding and only around 10% having difficulty accessing information.*NB: Within the answers to the questionnaire for 60+ older patients, it was possible for respondents to give free answers to questions; unfortunately, such options have not been translated from Latvian into English. As such, those answers could not be processed and compiled. Regarding doctors: the Romanian sample was clearly skewed in favor of “young” ages. This reflects the increasing number of younger physicians. By comparison, Latvian respondents were over 44 years old. As for the doctors’ specialties we registered a disproportionate number of psychiatrists in the Latvian sample and of neurosurgeons in the Romanian sample. While 88.5% of the Romanian doctors declared a single specialty, only 48.7% of Latvian respondents declared a single specialty, and 38.7% did not state any specialty. Fortunately for our study, most of the respondents (82.2%) treat/see, at least weekly, elderly patients. Most of the Romanian doctors (78.4%) see elderly patients on a daily basis, while nearly half of the Latvian ones (46.7%), see elderly patients weekly. 82.43% of the respondents were aware of the functional decline concept, among which it is significant to note that all Latvian doctors answered they were aware of it (the same goes for Latvian doctor answers regarding the concept of frailty), and slightly fewer respondents declared awareness on frailty (78.9%). Yet, the data from the Latvian respondent doctors to this survey contained identical answers to 6 questions, in all the 150 questionnaires, and all Latvian doctors declared that functional decline assessment “does not apply to their field of practice”; respectively, 35.46% of the Romanian respondents stated they did not know any related assessment scales\textsuperscript{20(21)(22)(23)} only. 53 respondents (17.79%) were aware of at least 1 scale for assessing functional decline – all Romanian. The overwhelming majority (82.76%) of the respondents declared they do not assess functional decline and frailty. Please see Annexes V and VII that present a summarized overview of the results for doctors and a full graphic overview of the doctors’ responses. The self-declared awareness on functional decline and frailty, related to aging, is high for both 60+ older patients and doctors in Latvia and Romania (over 70%) but overall levels of health literacy, both on functional decline and frailty, related to aging, are also conditioned by degrees of access, understanding, appraisal and application – in order to mitigate functional decline and frailty – which may reduce it. All these components are lower for patients, with about 20% of respondents finding it difficult to access information, understand it and/or to demonstrate knowledge about functional decline and frailty, related to aging. On the other hand, for the doctors, there is a discrepancy between claiming no problematic awareness, access, understanding, and the respective appraise and apply components – as defined in the common background of this study – and some of their answers. For example, only half of doctors considered a priority to gain knowledge on functional decline related to aging and respectively 70% of doctors considered frailty a low priority (all of the Latvian ones). Additionally, 24.5% of the respondents were not familiar or did not use any of the functional decline assessment scales and 31.9% of the respondents were not familiar or did not use any of the frailty assessment scales.

7. Discussion

These preliminary results – only from Romania and Latvia – show data that complements the results from the European Citizens’ Digital Health Literacy Eurobarometer Study\textsuperscript{24} as well as the HLS-EU survey findings\textsuperscript{9}. The European Citizens’ Digital Health Literacy Eurobarometer report aims to assess the extent and use of the internet to manage health. It also tries to identify and understand which are the sources of health information citizens prefer other than the internet. The study finds that 79% of respondents ask their doctor when searching for information elsewhere than the internet (European Citizens’ Digital Health Literacy Eurobarometer Study, p. 64). In Romania, the percentage is 77% and in Latvia 84%. Furthermore, patients in Latvia and Romania indicated to prefer TV and radio broadcasts as a means to
improve awareness of functional decline and frailty. This correlates with the decreased digital access and preferences of the older population. Moreover, a high percentage of patients considered necessary actions on prevention of functional decline and frailty. An objective limitation of the survey consists in the fact that some free answer questions, unfortunately, have not been translated into English, and therefore, they could not be processed and compiled; respectively, although a European/international trial, specific data available for processing have been (at least until now) provided – only from two countries: Romania and Latvia. So, even if emphasizing some very interesting aspects, it is questionable whether its results could be, at this stage, extrapolated to all the European citizens. Another possible limitation of our trial consists of some sort of equivocal answers received in the trial for doctors – for instance: at question Q no. 14 vs. Q no. 7 and at Q no.15 vs. Q no. 8 (please see ANNEX 8). So, additionally, we strived to check concordance levels within several such answers and used reliability filters as explained at the end of ANNEX 8. Considering the limited editorial space for an article, including ours, we have placed this endeavor in ANNEX 8.

8. Conclusion
The results have shown that many older patients in Latvia and Romania saw a need for prevention of functional decline and frailty. It was also interesting to note that digital access is low and so are preferences for it among the older patients responding to the survey.

We recommend to replicate the research in more EU member states because increased knowledge concerning functional decline and frailty, related to aging, could bring added value, at EU level, in support of healthy and active aging strategies and needs.

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Notice:

i. ANNEX I
Definitions of frailty and functional decline

ii. ANNEX II
http://www.cpme.eu/survey/health-literacy-of-frailty-and-functional-decline/
On the SurveyMonkey, where the respective questionnaire has been displayed, question 42 has been inserted, by mistake, two times; this has been corrected on the occasion of using, for this survey the translation-back-translation and in print format.

iii. ANNEX III
http://www.cpme.eu/survey/health-literacy-of-frailty-and-functional-decline/

iv. ANNEX IV: Table summarizing main results from the patients’ questionnaire

v. ANNEX V: Table summarizing main results from the doctors’ questionnaire

vi. ANNEX VI: Patient results

vii. ANNEX VII: Doctors results

viii. ANNEX VIII: Statistical analysis – level of concordance

About the authors:
The authors declare no conflicts of interest in relation to this article.

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