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KONKURSAM VIDZEMES AUGSTSKOLĀ

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1.DAĻA. PRETENDENTS <i>Aizpilda analogiski iesniegumam.</i>	
Vārds, uzvārds:	Linda Veliverronena
Zinātniskais grāds:	PhD
Zinātnes nozare:	Komunikācijas zinātne, komunikācijas teorija
Amats:	Docente un pētniece
2.DAĻA. ZINĀTNISKĀ PROJEKTA PROGRESA UN REZULTĀTU APRAKSTS	
2.1. Zinātniskā projekta nosaukums	
Pacientu apmierinātības izpēte un apmierinātības pārraudzības modeļa izveide Vidzemes slimnīca	
2.2. Zinātniskā projekta ilgums	
Sākuma datums: 02.05.2017.	Beigu datums:28.12.2017
2.3. Zinātniskā projekta mērķis un uzdevumi <i>Novērtējiet uzdevumu izpildi un mērķa sasniegšanu.</i>	
<p>Projekta mērķis ir izpētīt pacientu apmierinātību ar Vidzemes slimnīcas sniegtajiem veselības aprūpes pakalpojumiem un izveidot pacientu apmierinātības pārraudzības sistēmas modeli.</p> <p>Projekta uzdevumi:</p> <ul style="list-style-type: none"> – Veikt līdzšinējo pētījumu meta-analīzi; – Ievākt un apstrādāt papildu datus esošās situācijas pilnīgākai izpētei; – Identificēt nozīmīgākās ar pacientu apmierinātību saistītās problēmas un atlasīt tās, kas tiešā veidā saistītas ar slimnīcas darbu, neiekļaujot Latvijas veselības aprūpes sistēmas problēmas, kuras nav iespējams atrisināt vienas institūcijas ietvaros; – Sadarbībā ar Vidzemes slimnīcu izveidot pacientu apmierinātības pārraudzības sistēmas modeli gan stacionārajai aprūpei, gan reģistratūras darbam; – Līdzdarboties pārraudzības sistēmas pilotprojektā vienā no slimnīcas nodaļām un slimnīcas reģistratūrā; – Veikt slimnīcas personāla apmācību par pārraudzības sistēmas regulāru datu analīzi (nodrošināt, ka slimnīcas personāls pēc pilotprojekta beigām spēj patstāvīgi analizēt datus); – Veikt projekta rezultātu izplatīšanu iesaistītajām pusēm publikāciju un prezentāciju veidā; – Veikt projekta administratīvo vadīšanu un atskaišu sagatavošanu 	
2.4. Zinātniskā projekta rezultāti un to pielietojums <i>Novērtējiet rezultātu sasniegšanu un to pielietojuma iespējas nākotnē. Sniedziet informāciju par katru kvantitatīvi novērtējamo iesniegumā minēto sagaidāmo rezultātu. Iespējams uzskaitīt arī papildus sasniegtos rezultātus.</i>	

Projekta darba rezultāti un to kvantitatīvie rādītāji:

1. Pētījums par pacientu apmierinātību un ar to saistītajiem kritērijiem. Rezultāta rādītājs: pētījuma rezultātu ziņojums.

Projektā laikā tika apzināti iepriekšējie pētījumi par pacientu apmierinātību pasaulē un Latvijā. Ibalstoties uz priekšējo pētījumu apskatu top gada projekts Komunikācijas un Sabiedrisko attiecību studiju programmā (autore Katrīna Lūsa), kā arī tas izmantots zinātniskā raksta "The role of health literacy in predicting patient satisfaction with health care" sagatavošanai.

Pacientu apmierinātības pētījums tika veikts izmantojot starptautiski atzītas mērījumu skalas (Pacientu Apmierinātības aptauja (Patient Satisfaction Questionnaire PSQ-III), Eiropas Veselībratības izpētes aptauja (European Health Literacy Survey Questionnaire - HLS-EU-Q), kā arī Uzticēšanas ārstam mērīšanas skala (Physician Trust Scale). Mērījumu skalas tika pārtulkotas un adaptētas ņemot vērā Latvijas veselības aprūpes sistēmas specifiku. Izmantota kompleksa pieeja, kas aplūko gan veselības aprūpes sistēmas ietekmi, gan indivīda faktoru ietekmi uz pacientu apmierinātību.

Pacientu apmierinātības aptauja norisinājās no 2017.gada jūnija līdz novembrim. Anketu varēja aizpildīt elektroniski, gan arī tās tika izplatītas dažādās organizācijās Vidzemes reģionā, kā arī ViA studentes Līga Švarca un Katrīna Lūsa aptauju veica Vidzemes slimnīcas stacionārā. Aptaujas anketa, ko aizpildīja Vidzemes slimnīcas pacienti tika adaptēta sadarbībā ar slimnīcu.

1.pētījumā brīvprātīgi un anonīmi piedalījās 457 respondenti – 253 (55,4 %) sievietes un 204 (44,6 %) vīrieši vecumā no 18 līdz 81 gadiem ($M = 41,32$, $SD = 13,43$). Respondentu formālās izglītības ilgums bija no 4 līdz 33 gadiem ($M = 15,52$, $SD = 3,04$). Pētījuma dalībnieku izglītības līmeņa procentuālais sadalījums ir šāds: pamata izglītība 2,9 %, vidējā izglītība 30,8 %, koledžas izglītība 12,5 %, bakalaura izglītība 28,1 %, maģistra izglītība 24,4 %, doktora izglītība 1,3 %. Pētījumā atsevišķi tika analizēti dati par respondentiem ($N = 271$), kuri Vidzemes slimnīcā ir saņēmuši ambulatoru vai stacionāru palīdzību – 182 (67,2 %) sievietes un 89 (32,8 %) vīrieši vecumā no 18 līdz 80 gadiem ($M = 40,82$, $SD = 13,11$).

2.pētījumā Vidzemes slimnīcā tika aptaujāti 119 respondenti – 86 (72,3%) sievietes un 33 (27,7%) vīrieši vecumā no 19 līdz 90 gadiem ($M = 52,6$, $SD = 21,08$). Dalība aptaujā bija brīvprātīga un tika ievērota konfidencialitāte. Pētījuma dalībnieku izglītības līmeņa procentuālais sadalījums ir šāds: pamata izglītība 23,5 %, vidējā izglītība 46,2 %, koledžas izglītība 10,1 %, bakalaura izglītība 14,3 %, maģistra izglītība 5,0 %, doktora izglītība 0,8 %.

Izmantotā pieeja ļāva savstarpēji salīdzināt Vidzemes reģiona iedzīvotāju apmierinātību ar veselības aprūpes pakalpojumiem un Vidzemes slimnīcas pacientu apmierinātību, tādējādi identificējot vai Vidzemes slimnīcas pacientu apmierinātība ir virs vai zem reģiona vidējā apmierinātības līmeņa.

Pētījuma rezultāti par pacientu apmierinātību prezentēti Vidzemes slimnīcas pārstāvjiem 2017.gada novembrī.

Pielikums Nr.1. Aptaujas anketa

Pielikums Nr.2. Pacientu apmierinātības aptaujas rezultātu apraksts

2. Pacientu apmierinātības pārraudzības modeļa metodoloģija. Rezultāta rādītāji: metodoloģijas un modeļa apraksts.

Tika izveidots Pacientu apmierinātības pārraudzības modeļa priekšlikums un iesniegts Vidzemes slimnīcai. Tas paredz pacientu apmierinātības aptaujas datu uzkrāšanu ilgtermiņā, lai iespējams izsekot līdz veselības aprūpes pakalpojumu izmaiņām.

Pielikums Nr.3. Metodoloģijas un modeļa apraksts

3. Pacientu apmierinātības pārraudzības sistēmas modeļa pilotprojekts. Rezultāta rādītāji: pilotprojekta plāns un izvērtēšanas ziņojums.

Pacientu apmierinātības pārraudzības modelis neparedz pacientu apmierinātības mērīšanu ar drukātu aptaujas anketu palīdzību – izmantojot šādu pieeju aptaujas datu apstrāde ir laiktietilpīga un tādēļ nav piemērota apmierinātības datu uzkrāšanai un analīzei ilgtermiņā. Līdzšinējā pieredze liecina, ka drukātas anketas, kas pēc tam jāatdod medicīnas personālam attur pacientus izteikt patiesu viedokli, kā arī iepriekšējo aptauju laikā notikuši gadījumi, kad aptaujas anketas, kurās izteikts negatīvs viedoklis par personālu, nenonāk līdz atbildīgajam darbiniekam par datu ievadīšanu. Šo iemeslu dēļ jaunais modelis paredz interaktīvu standu ieviešanu, kas paredzēti klientu ekspressaptaujām un efektīvi ļauj pārsūtīt uz datoru klientu ievadīto informāciju jau apkopotā veidā.

Šī modeļa ieviešana saistīta ar izmaksām tehnoloģiju nodrošināšanā un no projekta īstenotājiem neatkarīgu iemeslu dēļ tas vēl nav noticis.

Pielikums Nr.4. Vidzemes Slimnīcas apliecinājums par sadarbību projektā

4. Slimnīcas personāla (līdz 10 dalībniekiem) apmācība sešu akadēmisko stundu apjomā. Rezultāta rādītāji: apmācību satura plāns, dalībnieku saraksts, apmeklējuma reģistrācijas lapa.

Tā kā pacientu apmierinātības uzraudzības modelis vēl praksē nav ieviests, tad šobrīd nav nepieciešamība pēv apmācībām. Pēc modeļa ieviešanas praksē projekta darbinieki turpinās darbu ar Vidzemes slimnīcas pārstāvjiem, lai skaidrotu kā apstrādāt ekspressaptaujā iegūtos datus par pacientu apmierinātību.

5. Projekta rezultātu izplatīšana. Rezultāta rādītāji: konferences pieteikums, konferences prezentācija, publikācijas teksts, informācija par projektu un rezultātiem ViA un slimnīcas mājas lapās, prezentācijas slimnīcas personālam un Valmieras pašvaldības darbiniekiem, rakstisks projekta rezultātu kopsavilkums, prezentācija ViA HESPI zinātniskajā pēcpusdienā.

Sagatavots zinātniskais raksts un iesniegts starptautiskajā zinātniskajā konferencē „SABIEDRĪBA, INTEGRĀCIJA, IZGLĪTĪBA”, kas notiek no 2018.gada 25.-26.maijam Rēzeknē. Dalība konferencē paredzēta arī ar prezentāciju. Konferences krājumā iekļautie raksti tiek indeksēti - Thomson Reuters datu bāzē (ISI Web of Science), CrossRef, SciLit, Google Scholar, OpenAire, WordCat. Šobrīd sagatavota un iesniegta zinātniskā publikācija “The role of health literacy in predicting patient satisfaction with health care”. Ievāktie dati ir daudzveidīgi un uz to bāzes iespējams veidot citas vēl citas publikācijas.

Par projekta rezultātiem sniegta informācija gan ViA mājas lapā, gan Vidzemes slimnīcas mājas lapā. Februārī plānota pētījuma rezultātu prezentācija Valmieras pilsētas pašvaldībai, kā arī 2018.gada pavasarī HESPI zinātniskajā pēcpusdienā.

Pielikums 5. Zinātniskais raksts “The role of health literacy in predicting patient satisfaction with health care”

Pielikums 6. Informācijas apliecinājums Vidzemes slimnīcas mājas lapā un FB par pacientu apmierinātības pētījumu

Es apliecinu, ka pēc manā rīcībā esošās informācijas šajā zinātniskā projekta atskaitē sniegtā informācija ir patiesa.

Es apliecinu, ka esmu iepazinies ar Nolikumu par Valmieras pilsētas pašvaldības finansēto zinātnisko grantu konkursu Vidzemes Augstskolā un, parakstot šo atskaiti, es apliecinu gatavību uzņemties finansējuma saņēmēja atbildību, t.i. atmaksāt saņemto finansējumu, ja nav sasniegti projekta pieteikumā noteiktie darba rezultāti.

Es atļauju publicēt Vidzemes Augstskolai un Valmieras pilsētas pašvaldībai tās interneta lapā vai citā atbilstoša medijā šādu informāciju:

1. finansējuma saņēmēja vārdu, uzvārdu, zinātnisko grādu un ieņemamo amatu;
2. informāciju par zinātniskā projekta nosaukumu un aktivitātēm;
3. informāciju par mērķu un rezultātu sasniegšanu un pielietojamību;
4. piešķirtā finansējuma kopējo summu.

Pretendenta vārds un uzvārds: Linda Veliverronena

Pretendenta paraksts:

Vieta: Valmiera



Datums: 31.01.2018.

BOOSTING TOURISM BUSINESS GROWTH THROUGH HIGHER VOCATIONAL EDUCATION

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February 2, 2018



Research activity – review of secondary data

- Aim – to identify the skillset needed in Latvia, Estonia and Finland in higher education to **support the growth and competitiveness of tourism sector**
- Review of secondary data
 - Previous research
 - National strategic planning documents
 - Employers' internship feedback
 - Existing higher education



Results - review of bachelor level study programmes

- Professional bachelor level study programmes in tourism & hospitality (15)
- Overview of study programmes suggests
 - Rather generalized and standardized tourism study programmes (Latvia)
 - Practical, hospitality oriented study programmes, correspond to specific strategic tourism products (e.g.spa and wellness) (Estonia)
 - Rather specialized tourism study programmes (e.g.product design, marketing) (Finland)
- Internships are significant in all study programmes
- Proportionally high number of general introductory study courses in management



Results - review of strategic documents and previous studies

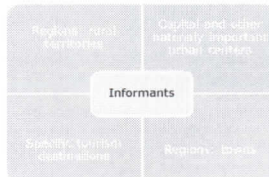
Shared priorities

- Sales and marketing (including far East markets), innovative product development, networking
- Nature as significant tourism resource
- Customer service
- Quality management
- ICT
- Multisectoral competence, entrepreneurship competences (not formal and generalized)
- Other recommendation to tourism educators - life long learning, collaboration between educators and tourism sector, hands-on approach



Research activity – primary data collection and analysis

- Data collection method – semi structured interviews, group interviews and FGD
 - NGO, private sector, state and municipality
 - Hospitality business, destination marketing, tourist sites etc.
- Method of data analysis – qualitative content analysis
- The number of interviews according to the criteria (February – April, 2017)
 - Finland - 32
 - Latvia - 44
 - Estonia - 26



Results

Identified categories of skills

- Cultural awareness and internationalisation
- Multichannel sales and marketing communication
- Tourism product development
- Managing business operations
- Multisectorality and collaboration

Additional needs

- Digitalization
- Languages
- Self-efficacy, personal traits
- Customer service
- Industry specific knowledge

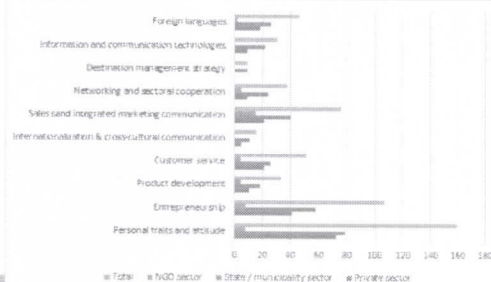


Specific skills with high significance

- **Primary needs for sector development**
 - Lack of cooperation and networking
 - Shortage of innovative products and experience design
 - Managerial skills
 - Online information delivery and social media marketing
 - Sales
- **Secondary needs for the sector development**
 - Specific IT skills in tourism
 - Communication competences / intercultural competences
 - Relationship management between customer and organization



The perspective of different sectors in tourism industry of Latvia - frequency count of needed skills - and personal attributes



«If there are any entrepreneurship education it should be much closer to reality. Tourism entrepreneur is just another entrepreneur. If I as a youngster should have made choice what to study, I would go for entrepreneurship - the business in reality. What is tourism – business just a bit specific. And then tourism education program management should prove - why you should not choose entrepreneurship.»

«Tourism enterprises seek personnel with master's level attitude and vocational education skills»

«The applicants of tourism programs should be monitored more closely in order to help them to understand whether the tourism is their field or not [...] This is important - plenty of people should never work in client service or in hospitality. They should do another thing, this a space for monitoring.»



Conclusions and topics for discussion

1. Role of higher education in tourism
2. Balance between vocational and liberal approaches in curriculum design
3. Content and methods
4. Activation of meaningful cooperation between higher education institutions



THE ROLE OF HEALTH LITERACY IN PREDICTING PATIENT SATISFACTION WITH HEALTH CARE

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Abstract. *Patient satisfaction has become one of the central indicators to measure quality of provision of health care services. However, it has been made clear in previous literature that the effectiveness and efficiency of the health care services is not directly proportional to the satisfaction level, because an array of patient's personal, psychological, and cognitive factors such as beliefs, expectations, knowledge and others may come into play. In this current article, we report on a study aiming to examine the role of health literacy in predicting patient satisfaction with health care in Latvia. In summer-autumn 2017 data were collected from a random sample of 451 participants (44 % male) in age from 18 to 81 years. The participants filled-in the questionnaire consisting of: Patient Satisfaction Questionnaire (PSQ-III, Ware, Snyder, & Wright, 1976) and European Health Literacy Survey Questionnaire (HLS-EU-Q, HLS-EU Consortium, 2012). We measured four out of the seven aspects of PSQ, namely, general satisfaction, technical quality, interpersonal aspects, and communication. HLS-EU-Q contains three subscales: health care, disease prevention, and health promotion. Study results confirm that one of the health literacy aspects - health care - was the most important predictor of all patient satisfaction aspects, while health promotion predicted technical quality.*

Key words: *patient satisfaction, health literacy*

Introduction

Latvia traditionally has given low priority to health care system, and consequently it suffers from poor public financing in long term. In fact, expenditure for the health care system in Latvia is almost twice as low as average public spending in OECD countries, also health status of Latvians lags behind other OECD countries (OECD, 2017). According to Health Consumer Powerhouse's Euro Health consumer Index, in 2008 Latvian health care was ranked as the most unfriendly health care system in Europe. Despite improvements, eight years later, in 2016, it was still ranked among at least patient-centred health care systems. As the comparative study demonstrated, patients must cover themselves a substantial part of the costs across all health services (OECD, 2017). Under these conditions, patient health literacy becomes increasingly significant, as it is associated with maintenance of health, wellbeing, prevention of illnesses, and ability to seek, understand and utilise health care information (Sørensen et al., 2012), which is highly needed and essential to navigate individuals through Latvian health care system.

Latvian government has introduced a set of legal norms aimed to reform our health care system and urge medical care institutions to show greater interest into patient satisfaction with the provision of health care services. Medical care institutions in Latvia establish patient satisfaction measurement systems gradually; however, main attention is focused to the systemic aspects that affect patient satisfaction, while individual factors are neglected (Ministry of Health of the Republic of Latvia, 2017). Based on the argument that patient's awareness, and knowledge of health-related issues impact the patient satisfaction, this study focuses to the individual aspect of patient – health literacy.

The aim of the current study is to explore the role of health literacy in predicting patient satisfaction with health care in Latvia. The study strives to promote the debate about the importance of health literacy in Latvian public space. Research data were collected during survey with a random sample consisting of 451 participants.

Number of previous studies have focused on the relationship between patient satisfaction and health literacy (e.g. Shea et al., 2007; Kaphingst et al., 2014; Altin & Stock, 2015; Komenaka et al., 2014; 2016; Macleod et al., 2017; Verkissen et al., 2014); yet, health literacy only recently has gained attention of researchers in Latvia and is not enough discussed topic in public space. Few isolated studies focus on health literacy in Latvia such as Policy recommendations of health literacy by The Standing Committee of European doctors and Latvian Human Development report 2015/2016 on Mastery of Life and Information Literacy contained the chapter of health literacy. (Rasnača et al., 2017)

During last few decades, medico-social services, patient care relations and patient guidance counselling have been introduced in health care institutions (Von Wagner et al., 2009). The overall trend in health care to treat patients as clients (Priporas et. al 2008; Gourley, & Duncan, 1998) urges hospitals to measure not only quality of delivered health care services but also patient satisfaction. Consequently patient satisfaction has become one of the critical indicators for measuring the health care quality. It contradicts traditional approach when quality evaluation was based on provided medical services (Von Wagner et al., 2009). Overall patient satisfaction is multidimensional, hard-to-define and measure concept, depending on various socio-demographic characteristics of patients (Shea et al., 2007). Availability of services, reliability, continuity, reliability, efficiency, treatment results, service provider's communications skills are cited as factors affecting patient assessment of received health care. (Naidu 2009: 367-368) However, effectiveness and efficiency of the health care services is not directly proportional to the satisfaction level, because an array of patient's personal, psychological, and cognitive factors such as beliefs, knowledge and others may come into play. Previous studies have generated lists of influences, e.g. Naidu (2009: 371-372) indicates that patients expectations are related to the culture and specifics of

health care system. Priporas et al. (2008) states patients do not have clear expectations in clinical setting, and their criteria for satisfaction measurement also depends on severity of illness, on the stage of treatment as at some stages patients are unable to draw conclusions. (Priporas et al., 2008: 324-325). DiMatteo et al. (2014) cites low health literacy as one of the major impediments to accurate assessment of patient's adherence.

Patient activation enhance patient satisfaction and the shift in the patient-physician relationship suggests patients should actively participate in their health care, through engaging in shared decision making, asking questions, and other services (Shea et al., 2007); however, there are pre-conditions for the person to be able actively engaged in the process of health maintenance or disease treatment. Previous studies cite list of factors having negative impact to patient activity such as limited health literacy, low level of confidence, emotions and individual characteristics of patients. From the perspective of service providers, the barriers for patient involvement are time pressure, limited communication skills, and attitude (Laidsaar-Powell et al., 2014: 99-100). The complexity of modern health care system settings emphasizes the increasing need to patient health literacy (Berkman et al., 2014) Health literacy, just like patient satisfaction, is widely discussed and defined concept; however, all definitions have common *“the focus on individual skills to obtain, process and understand health information and services necessary to make appropriate health decisions”* (Sørensen et al., 2012). Health information seeking has important role in the process of patient empowerment because it is considered *“purposeful and goal oriented activity rather the result of passive exposure to information”* (Graffigna et al., 2017:1919). Patient health literacy and specifically the ability to seek, understand and use of information is critical determinant defining if the person is able to participate in the health care process (Jordan et al., 2010: 36).

Recently, studies move beyond individual focus and consider health literacy *“as an interaction between the demands of health systems and the skills of individuals”* (Sørensen et al., 2012). Broader understanding of health literacy emphasizes the significance of health context and circumstances which may be outside of individuals control. (Jordan et al., 2013) The framework of Health literacy management scale extends the concept of health literacy by including number of domains such as proactive health related behaviour, being able to ask for social support, capacity to communicate to health care professionals, socioeconomic considerations defining to what extent individual can afford health care (Jordan et al., 2013:233). Komenaka et al. (2014) has found limited health literacy is a barrier for patient-physician communication. Other studies indicate patients with inadequate health literacy are at risk not being able to proceed information that they are provided by the physicians (Verkissen et al., 2014). In summary: health literacy has become central in the context of

empowerment of the patient and patient – physician communication in the increasingly complex health care system.

The association between patient health literacy and health outcomes is well established (Von Wagner et al., 2009), as low health literacy has been associated with wide range of health related outcomes, including poorer overall health status and higher risk of hospitalization (McCray, 2005). At the same time, it is unlikely that health literacy has direct effects on most health outcomes as its impact is mediated by external factors attributed to health care system or health care provider (Von Wagner et al., 2014).

Previous studies suggest that the level of patient health literacy can predict overall patient satisfaction with provided health care (Macleod et al., 2017). Findings of the study by Shea et al. (2007) confirm that health literacy although weakly but yet consistently predicts primary care patient dissatisfaction. Macleod et al. (2017) claims individuals with insufficient health literacy express lower satisfaction with physicians and overall health care delivery. Findings allow to identify characteristics shared by adults with insufficient health literacy, - more likely they are to be older, male, minorities, have lower income and education and they generally are in poorer physical and mental condition (Macleod et al., 2017: 335). Altin and Stock (2015) have explored the patient satisfaction with primary care services in the context of individual`s health literacy, patient centred communication and shared decision making. Their study demonstrates that patients with limited health literacy skills and experiencing poor patient-centred communication are likely to be less satisfied with provided care (Altin & Stock, 2015).

Method

Participants. In the study 451 adults (44 % male) in age from 18 to 81 years ($M = 41.28$, $SD = 13.31$) participated. The duration of formal education of respondents was from 4 to 33 years ($M = 15.53$, $SD = 3.05$).

Instruments. The participants filled-in the questionnaire consisting of: Patient Satisfaction Questionnaire (PSQ-III, Ware, Snyder, & Wright, 1976) and European Health Literacy Survey Questionnaire (HLS-EU-Q, HLS-EU Consortium, 2012), as well as responded a number of questions about the frequency of illnesses that have required or had not required medical assistance, and respondents' demographic information such as age, gender, and length of formal education.

Patient Satisfaction Questionnaire (PSQ-III, Ware, Snyder, & Wright, 1976) was adapted in Latvian as part of this study. Patient Satisfaction Questionnaire consists of seven sub-scales, of which four sub-scales were used in this study: *General Satisfaction* (e.g. “very satisfied with care”), *Technical Quality* (e.g. “doctors are competent, well-trained”), *Interpersonal Aspects* (e.g. “very friendly and courteous”) and *Communication* (e.g. “explain the reason for

tests”). The three sub-scales *Time Spent with Doctor*, *Financial Aspects*, and *Access / Availability* were not used in this study for following reasons: 1) *Time Spent with Doctor* includes only two items, 2) *Financial Aspects* and *Access / Availability* consist of items related to health system problems in Latvia and the interest of researchers was more focused on the personal aspects of patient satisfaction. 28 items were used in the instrument, and the five-point scale was used for answers: 1 – strongly agree, 2 – agree, 3 – uncertain, 4 – disagree, 5 – strongly agree. In previous studies Cronbach's alpha varies from .82 to .88 (Hay, Davies, & Ware, 1987), in this study the variation is from .77 to .82.

Health Literacy Survey Questionnaire (HLS-EU-Q, HLS-EU Consortium, 2012) consists of three sub-scales: Health care (16 items), Disease prevention (15 items), and Health promotion (16 items) about ability to access health related information, ability to understand health related information, ability to interpret and evaluate health related information, and ability to make informed decisions on medical and health issues (Sorensen et al., 2012). The five-point scale was used for answers: 1 – very difficult, 2 – fairly difficult, 3 – fairly easy, 4 – very easy, 5 – don't know. In this study Cronbach's alpha varies from .89 to .90. In the survey carried out by European Health Literacy Project the variance was from .91 to .92 (HLS-EU Consortium, 2012).

Procedure. In summer-autumn 2017 data were collected using Google forms. Respondents were invited to participate in the study using social networking sites and e-mail. The respondents were introduced to the topic of the study and informed about the anonymity. Participation in the study was voluntary.

Data analysis. Data was analysed using IBM SPSS Statistics 22. Correlation analysis and hierarchical regression analysis was performed. The results were considered at the level of significance $p < .05$, $p < .01$ and $p < .001$.

Results

Hierarchical regression analysis was performed to determine the role of health literacy in predicting patient satisfaction. The assumptions of linearity, normally distributed errors, and uncorrelated errors were checked and met. Means, standard deviations and correlations are presented in Table 1.

Regression analysis was performed on four aspects of patient satisfaction – general satisfaction, technical quality, interpersonal aspects, and communication. The following variables were included in the first stage of hierarchical regression analysis: gender, age, education, frequency of illness that does not require medical assistance, and frequency of illness requiring medical assistance.

Table 1. **Descriptive statistics, Cronbach alpha and correlations of patient satisfaction and health literacy subscales**

	α	M	SD	2.	3.	4.	5.	6.	7.
1. General Satisfaction	.80	2.43	.62	.67	.68	.61	.32	.21	.27
2. Technical Quality	.82	3.00	.56		.76	.76	.40	.27	.33
3. Interpersonal Aspects	.81	2.93	.63			.77	.40	.28	.32
4. Communication	.75	3.22	.67				.41	.26	.28
5. Health Care	.89	2.93	.42					.68	.55
6. Disease prevention	.89	2.90	.48						.69
7. Health promotion	.90	2.80	.48						

Note. All the correlation coefficients in the table are statistically significant $p < .01$

In case of general satisfaction all controlling variables explained 9 % of the variance ($F(5,435) = 8.90, p < .001$), gender ($\beta = .12, p < .05$), age ($\beta = -.13, p < .01$) and frequency of illness that does not require medical assistance ($\beta = -.26, p < .001$) were significant predictors. When all health literacy aspects were added, they improved the prediction and 17 % of the variance was explained ($F(8,432) = 11.48, p < .001$). Individuals who were less likely to suffer from illnesses that did not require medical assistance, as well as men, were slightly more satisfied with medical care. Health care as one of health literacy domains ($\beta = .30, p < .001$) was significant predictor of patient general satisfaction. In case of technical quality, controlling variables explained only 3 % of the variance ($F(5,434) = 2.58, p = .026$), frequency of illness that does not require medical assistance ($\beta = -.12, p < .05$) was predictor of technical quality. In case of interpersonal aspects, controlling variables explained 4 % of the variance ($F(5,436) = 3.66, p = .003$) and education turned out to be the predictor of satisfaction with interpersonal aspects ($\beta = .10, p < .05$). In case of communication, controlling variables were explained only at 4 % of the variance ($F(5,435) = 3.35, p = .006$). When all health literacy domains were added, they improved the prediction and 18 % of the variance was explained in case of technical quality ($F(8,431) = 11.83, p < .001$), 19 % – in case of interpersonal aspects ($F(8,433) = 13.04, p < .001$), and 19 % – in case of communication ($F(8,432) = 12.28, p < .001$). In all cases health care was significant predictor of patient satisfaction (general satisfaction $\beta = .30, p < .001$, technical quality $\beta = .38, p < .001$, interpersonal aspects $\beta = .37, p < .001$, communication $\beta = .40, p < .001$). All standardized coefficients and R square change are presented in table 2.

Table 2. **Summary of hierarchical regression analysis for variables predicting patient satisfaction**

Independent variables	Dependent variables: Patient satisfaction							
	General Satisfaction		Technical Quality		Interpersonal Aspects		Communication	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.09		.03		.04		.04
Gender	.12*		.04		.08		.05	
Age	-.13**		-.08		-.06		-.06	
Education	.01		.09		.10*		.07	
Frequency of illness ^a	-.26***		-.12*		-.11		-.07	
Frequency of illness ^b	.07		-.001		-.05		-.11	
Step 2		.08		.15		.15		.15
Gender	.12*		.04		.09		.06	
Age	-.08		-.01		.004		.004	
Education	-.03		.04		.04		.03	
Frequency of illness ^a	-.23***		-.07		-.06		-.03	
Frequency of illness ^b	.09		.02		-.03		-.08	
Health Care	.30***		.38***		.37***		.40***	
Disease prevention	-.11		-.13		-.08		-.12	
Health promotion	.11		.19*		.14		.11	
R^2		.17		.18		.19		.19

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

Frequency of illness^a – does not require medical assistance

Frequency of illness^b – requiring medical assistance

Discussion

This study focused on an under-researched area in the field of patient satisfaction, namely, the role of health literacy in predicting patient satisfaction with health care services in Latvia. Arguing that along with the systemic aspects, the patient individual aspects such as health literacy should be given an equally significant role, we carried out our survey with a patient satisfaction measurement instrument that specifically focused on communication, interpersonal aspects, technical quality and general satisfaction of patients. Further, based on our results, we discuss the role of health literacy in predicting these four aspects of patient satisfaction. We distinguish between three domains of health literacy, based on Sorensen et al. (2012): health care, disease prevention, and health promotion that all shape and entail patients' knowledge, competences and, motivation to access, understand, evaluate and apply health-related information and make informed decisions, and take action.

In our study the general satisfaction was mainly predicted by frequency of illness that does not require medical assistance, and the gender played a role too, – male respondents turned out to be slightly more generally satisfied with the health care services than females. Based on this we can conclude that patients

who have less experience with health care services, are more satisfied. Individuals having better understanding of health related information and ability to interpret and evaluate information, are more satisfied with the competencies and medical experience of physician, which might suggest they more appreciate health care service providers.

In spite the fact that previous studies suggest that the level of patient health literacy, especially in older population, can predict overall patient satisfaction (Macleod et al., 2017), our findings show that, measured separately, each domain of health literacy has only a weak relationship with patient satisfaction. However, when all health literacy domains were added to regression, they improved the prediction of patient overall satisfaction to 17 - 19 %. Our findings thus are in line with the results of previous studies (e.g., Shea et al., 2007) pointing out that health literacy does not alone predict general patient satisfaction. Our findings suggest that one of the health literacy domains - health care - turned out to be the strongest predictor of patient satisfaction in all cases, while patient's satisfaction with the technical quality of the health care services was predicted by the domain of health care, and additionally by the domain of health promotion. The least predictor among all three was the domain of disease prevention.

Three conclusions can be derived from these findings: first, the patient's ability to access, understand and and evaluate relevance of various risk factors - elements that are associated with disease prevention and are in line with the concept of active and empowered individual (Shea et al., 2007) who interacts with health care professionals - should be examined more closely. It is due to the fact that in our study, the disease prevention domain showed no significance in predicting patient satisfaction, while previous studies (e.g., Jordan et al., 2013) emphasize the crucial role of proactive health related behaviour of patients. Second conclusion is that the domain of health promotion of health literacy plays an important role regarding satisfaction with interpersonal aspects and communication, which means that patients who are more informed and knowledgeable on the domain of health promotion, are more able to understand the received information and as a result more satisfied with the health care services. Attention therefore should be paid towards educating patients and explaining them the diagnosis and treatment recommendations. Medical personnel might need specific training to recognise low health literacy and develop strategies that enhance the communication between patient and doctor to make sure that patients understand what they have been told. This might lead to higher level of adherence, as the previous research show (Komenaka et al., 2014; Verkissen et al., 2014). And finally, health literacy should not be overlooked as a sole predictor of patient satisfaction. Instead, future studies should take a complex and multidimensional approach and combine patients individual aspects such as health literacy with the ones associated with the systemic influences.

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