





ABSTRACT BOOK

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Welcome to the 4th European Health Literacy Conference. This is the abstract book which includes all the abstracts that are presented as posters, oral research presentations, in symposia or as part of teach-in workshops. They are ordered by abstract number as indexed in the general conference programme. The general conference programme can be found at www.ehlc2019.com

The submitted abstracts reveal a vibrant health literacy community committed to advance health literacy research, policy and practice for all. We thank all contributors for their efforts.

With kind regards,

Stephan Van den Broucke Chair of the Scientific Committee Université Catholique de Louvain

Gerardine Doyle Conference Chair University College Dublin

Kristine Sørensen Executive Chair Health Literacy Europe

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#3 Maternal Mortality Prevention: Looking at Postnatal Education through a Health Literacy Lens.

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Background: Maternal Mortality is a global public health issue with local urgency. Globally, approximately 830 women die every day from preventable causes related to pregnancy and childbirth (WHO, 2018). The maternal death rate ranges from 12-239 per 100,000 live births globally between developed and developing countries respectively (WHO, 2018). In 2015, the U.S. maternal death rate was 26.4 per 100,000 per live birth (GBD, 2015). This rate is more than double the 1987 U.S. rate of 7.2 deaths per 100,000 births (CDC, 2016). A study published this year, indicated the Texas maternal death rate was 14.6 per 100,000 live births (Baeva et al., 2018). This is below the 2015 national death rate, but disparities exist. Black mothers are dying at the highest rate while disparities also exist for low-income women, women at extremes of maternal age and women from rural areas (TXDSHS, 2016). Many of these same disparities as well as others also exist in countries across the globe (WHO, 2018). Between 2011-2012, the majority of maternal deaths in Texas occurred more than 42 days after delivery and a 1:50 ratio exists for mortality:morbidity (TXDSHS, 2016).

In addition to the vast information taught at discharge, a woman's ability to understand is influenced by other factors, such as culture, degree of sleep deprivation, physical and emotional changes, possible side effects of medications, and low health literacy (Chugh et al., 2009; Roman et al., 2017). Kilfoyle et al. (2016) suggest that health literacy is related to maternal postnatal health knowledge and behaviors. In a system analysis of continuity of care from clinical to community, Roman et al. (2017) found two global themes causing disparate care for African American women include 1) difficulties understanding and communicating with their providers; and 2) socioeconomic and racial bias in care. Women may

not understand if symptoms after birth are normal, or abnormal requiring medical attention.

Objective: Few studies have evaluated the effect of health literacy on obstetric outcomes. For rates of postpartum maternal morbidity and mortality to be reduced and disparities to be addressed, hospital patient safety systems must be improved (Berg et al., 2005). Women must be instructed in a way they can understand and apply the information to selfidentify specific warning signs to call or seek a health care provider; or go to the nearest emergency department where many postpartum complications can be successfully treated (Berg et al., 2005). Between 2016 and 2030, as part of the World Health Organization Sustainable Development Goals, the target is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births.

Suplee et al. (2017) suggests improving postpartum education could improve women's ability to recognize and respond to warning signs. The authors propose future research focus on obtaining women's perceptions of information received from their providers since inequitable perception can cause health disparities. Given the gap in research available on the readability, understandability and cultural sensitivity of postnatal instruction, we hypothesize that improved health literacy and cultural sensitivity of postnatal instruction will improve communication, reduce care bias and optimize postnatal care potentially reducing maternal morbidity and mortality.

Methods: In collaboration with a university nursing program, and two hospital system community-based services, we propose to conduct the following specific aims:

AIM 1. Assess current readability, understandability and cultural sensitivity of information regarding postnatal care. Using the Patient Education Materials Assessment Tool, Frybased Readability and National Standards for Culturally and Linguistically Appropriate Services (CLAS, 2018), we will assess readability, understandability and cultural sensitivity of postnatal discharge materials in programs serving low-income patients (AHRQ, 2018).

AIM 2. Determine women's ability to access, understand, appraise and apply postnatal care instructions to evaluate current postpartum education. We will conduct one-on-one interviews and follow-up focus groups with both urban and rural patients engaging two large hospital system community-based programs serving low-income patients to assist with recruitment. Women's perceptions of information will be evaluated using The Integrated Model of Health Literacy (Sorensen et al., 2012).

Two community health workers will be contracted to conduct the interviews and focus groups after the participants are consented by the PI. By definition, CHWs are trusted health personnel from the communities they serve who bridge cultural and language barriers helping the participants feel comfortable to provide frank, honest responses.

The one-on-one interviews will be conducted in the participants home and recorded for transcription. The focus group will be conducted at a central location in close proximity to the medical facility where the mother received referral. The community health worker will oversee both after prior consent is obtained by the PI. Recorders will be stored in a locked box until transcription. After transcription, they will be stored in a locked drawer in the PI's office.

Proposed Results & Discussion: The impact of this pilot study will be identifying areas to incorporate health literacy and cultural sensitivity into postnatal education to improve women's understanding of abnormal postnatal symptoms and seeking of emergent care. The innovative aspect of this project is inclusion of women's perceptions of postpartum information at discharge to improve communication. This will inform future interventions and sustainable health systems strategies to not only improve postnatal education in underserved communities at high risk for maternal mortality but also to build health literate societies. These findings should be established by the time of the conference and can also be extrapolated to conducting similar health literacy efforts in both developed and developing countries.

Health literacy plays a role in every domain helping to improve health outcomes of individuals, families, organizations, communities and populations through clear, easy to understand information that people can apply to their particular circumstance. Building a culture of culturally sensitive, health literate postnatal care will help address maternal health disparities. By providing information tailored to the need of individual patients and groups in understanding on their own terms how to monitor postnatal symptoms in their homes and environment, we can optimize outcomes, save costs, promote postnatal health and potentially save lives.

#4 Brazilian translation, cultural adaptation, and validation of the Health Literacy Questionnaire (HLQ).

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Introduction: Health Literacy (HL) refers to the abilities of individuals and groups to obtain access to, understand and use health information for promoting, maintaining and making health decisions. It is an element of mediation in the communication process between professionals and users. Brazil does not have a multidimensional instrument that allows to assess the population's level of HL, in order to help plan health interventions suitable to the real needs of individuals, and improve health outcomes. The Health Literacy Questionnaire (HLQ) is an Australian instrument capable of exploring the HL multidimensionality. It was translated and validated over languages, in 15 internationally recognized for its methodological robustness and great clinical applicability. Objective: to validate the health literacy assessment instrument Health Literacy Questionnaire (HLQ) to Brazilian Portuguese. Method: methodological, multicentric study, which was developed in two stages: translation, and transcultural adaptation and verification of the psychometric properties of the Brazilian version of the HLQ (HLQ-Br). The

translation and transcultural adaptation process was developed according to the protocol established by the authors of the instrument: (1) translation (2) technical review and semantic assessment (3) backtranslation (4) technical review by the instrument's author (5) cognitive assessment of the instrument with 60 participants of the target population. The HLQ-Br was answered by 794 adult users of the Brazilian Unified Health System, from five cities in the Center-West, Southeast and Northeast of the country. The validity of the translated instrument was verified by means of confirmatory factor analysis through the method for diagonally weighted squares estimation and reliability was verified through the indicators Cronbach's alpha and composite reliability. Results: the cognitive assessment of the HLQ-Br showed that the instrument's items were easily understood by the participants, except for item five in part two, which had to be changed. Confirmatory analysis presented satisfactory adjustment indices: y2WLSMV (866 df) = 1698.53, p < 0.0001; CFI = 0.978; TLI = 0.976 and RMSEA = 0.035 [0.032; 0.037, IC 90%]. The Brazilian version presented good reliability through Cronbach's alpha and composite reliability with values over 0.76 in eight of the nine instrument scales. Conclusions: the Brazilian version of the HLQ was found equivalent in relation to the original version and presented satisfactory psychometric properties. It can be applied in the HL assessment of the Brazilian population, in clinical practice, teaching, and research. It should be used in other contexts to confirm its usefulness in Brazil. This confirmation can contribute to incorporate literacy into healthcare practices, with a positive impact on the health of the Brazilian population.

#5 The European Health Literacy Survey Questionnaire: the Italian pilot of the Progetto CUORE in a populationbased sample.

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Background: Health Literacy (HL) is an important determinant to improve and maintain health and quality of life during the life course. HL implies people's knowledge, motivation and competencies to access, understand, appraise and apply information to make judgements and make decisions in everyday life concerning healthcare, disease prevention and health promotion. Following a recommendation by the WHO publication "Health Literacy-the solid facts", the Action Network on Measuring Population and Organizational Health Literacy (M-POHL) was established, under the umbrella of the European Health Information Initiative of WHO Europe in February 2018, for collecting standardised and comparable data on HL in order to measure and promote the HL of citizens among MS.

Objective: The HLS-EU-Q16 questionnaire, including 16 core questions, was administered to a sample of Italian adult population under the implementation of the Health Examination Survey of the Progetto CUORE started in 2018. The pilot was implemented in order to verify and evaluate HLS-EU-Q16 questionnaire feasibility and applicability, and to collect preliminary data on self-perceived levels of HL in the general population.

Methods: One hundred subjects aged 35-74 years, examined in the center of Reggio Calabria (in the South of Italy) of the Progetto CUORE-HES, were interviewed following consecutive access to the examination. The sample was randomly selected from the resident population and stratified by gender and age group (35-44, 45-54, 55-64, 65-74 years). The Italian version of the HLS-EU-O16 questionnaire, translated and published on C. Lorini et al, BMJ Open 2017, included domains such as accessing and obtaining, understanding or appraising information relevant to healthcare, disease prevention and health promotion. It is a self-reported tool with Likert-type responses ('very easy', 'fairly easy', 'fairly difficult', 'very difficult') and an associated final score that measures interaction, comprehension, information application/function, making/critical thinking, evaluation, responsibility, confidence and navigation skills. Information on socio-demographics conditions, health determinants, life styles, risk factors and risk conditions were measured and collected under the Progetto CUORE HES. Responses were grouped in 2 classes: 0 (zero) for 'fairly difficult' and 'very difficult' and 1 for 'fairly easy' and 'very easy'; 'don't know' answers were coded as missing values. The HLS-EU-Q16 score is a sum score (range: 0–16) and according to the final score, three levels of HL have been defined: 'inadequate' HL (0–8); 'problematic' HL (9–12); 'sufficient' HL (13–16). Mean score and standard deviation were elaborated together with prevalence of the three levels of HL.

Results: Completed questionnaires were 98, since in 2 questionnaires some answers were missing. Preliminary results showed that the mean score of HL was 13.0 (SD=3.5), then in the 'sufficient HL' level, even though at the lower limit. Prevalence of persons with 'inadequate' HL was 11.2% (n=11), that with 'problematic' HL level 26.5% (n=26); overall 37.7% (n=37) of interviewed persons presented insufficient HL level; less than two/third of the sample had a 'sufficient' HL level (62.3%, n=61). Basically, no gender and age differences emerged among the three HL levels.

Conclusion: Preliminary results from the Italian pilot of the Progetto CUORE suggest that the majority of interviewed adult population have a 'sufficient' HL level (62.3%). This prevalence is higher than in the overall country (45.4%) and slightly higher than in Europe (51.6%), even though younger ages (18-34 years) and older ages (75+ years) were not included in the pilot sample. The HLS-EU-Q16 questionnaire represents a standardised and operative tool for assessing HL in the general population.

#6 Prevalence of Limited Health Literacy and Associated Factors in Patients with Type 2 Diabetes Mellitus in Malaysia: A Cross-Sectional Study.

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Background: Type 2 diabetes mellitus (T2DM) is a long-term illness which requires daily self-management activities. Patients' ability to access, understand, appraise and apply health information in order to perform these activities is known as health literacy (HL). Studies had shown that limited HL in these patients is associated with lower diabetes knowledge, self-efficacy and self-care behaviours. Previous studies looking at HL levels and associated factors in patients with T2DM had led to design and deployment of tailored interventions.

Objectives: This study aimed to measure the prevalence of limited HL in Malaysian patients with T2DM and to determine its' associated factors.

Methods: A cross-sectional study was conducted in four primary care clinics in Perak, Malaysia. Participants (n=408) were patients with T2DM who attended study clinics for follow-up in January to March 2018. HL levels were measured using the European Health Literacy Questionnaire (HLS-EU-Q47), while the diabetes knowledge and perceived social support were determined using Michigan Diabetes Knowledge Test (MDKT) and Multidimensional Scale of Perceived Social Support (MSPSS) respectively. Patient's HL level was determined by the general HL index where an index of \leq 33 points denotes limited HL. Multiple logistic regression analysis with a stepwise forward likelihood ratio (LR) method was used to determine the factors associated with limited HL.

Results: The mean HL index was 31.86 ± 7.04 , and the prevalence of limited HL was 66.2% (n=270). The independent factors that were associated with HL were marital status, ability to read English, perceived social support and participation in diabetes education. Patients who speak poor English (OR = 2.475, 95% CI 1.455-4.212), do not speak Malay (OR= 1.784, 95% CI 1.111-2.866) or English at home (OR = 2.383, 95% CI 1.267-4.481) were independently associated with limited HL. Patients who is not currently married either single, divorced, separated or widowed (OR = 0.568, 95% CI 0.322-1.002), have higher perceived social support (OR = 0.476, 95% CI 0.357-0.633) and

participation in diabetes education (OR = 0.42, 95% CI 0.263-0.672) were associated with adequate HL.

Discussion: The prevalence of limited HL is high among patients with T2DM in Malaysia. Our data highlighted significant relationships between HL levels with language abilities, marital status and social support. Since attendance to clinic diabetes education session is associated with adequate HL level, healthcare providers should ensure all patients with T2DM have access to this service.

#7 Graph literacy matters: Examining the association between graph literacy, health literacy, and numeracy in adults with lower socioeconomic status.

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Introduction: Graphic display formats are gradually used to enhance health information and promote people centered health. Yet limited attention has been paid to graph literacy in people of lower socioeconomic status (SES), lower health literacy and lower education. This study aims to: 1) examine the relationship between graph literacy, health literacy and numeracy in people of lower SES and 2) determine the impact of graph literacy on comprehension of health information presented in different visual formats.

Methods: We conducted a cross-sectional online survey among people in the US on Medicaid, and of presumed lower SES, lower health literacy and lower education. The 30-item survey assessed subjective health literacy, subjective numeracy, graph literacy, comprehension and preference of three visual display formats (table, bar chart, and icon array).

Results: The mean graph literacy score among 436 participants was low, at 1.46 (range: 0 to 4). Health literacy was higher than anticipated. The mean

graph literacy score was considerably lower than mean scores reported in a sample of US (mean: 2.21, SD 1.12) and German participants from the general population (mean: 2.03, SD 1.10). The relationship between health literacy and numeracy was statistically significant. More participants without a family history of cancer or higher levels of education reported adequate health literacy. Participants with adequate health literacy had higher subjective numeracy scores (p<.001). There was a positive relationship between graph literacy and subjective numeracy (p=.037). Only graph significantly literacy predicted the comprehension score of each visual display format (p<.001). There were notable discrepancies between comprehension scores and preferred visual display format, with tables being preferred, despite yielding the lowest comprehension score. The inverse trend was seen for icon arrays. Total comprehension was highest for the bar graph and icon arrays (respectively 1.86 and 1.80) compared to the table format (1.14). By contrast, participants preferred the table and bar graph formats (respectively 39.2% and 38.1%) compared to icon arrays (22.7%). In brief, in this lower SES sample, bar charts and icon array seemed to generate best understanding with bar chart (and table) being preferred.

Discussion: Graph literacy in people of lower SES was considerably lower than previous estimates in the US. Bar charts and icon arrays yielded equivalent comprehension scores, with icon array being least preferred. By contrast, tables were despite yielding preferred, the lowest comprehension score. Since graph literacy was the strongest predictor of graph comprehension (correlated with numeracy), it is important to reconsider the use of graphic display formats among people of lower SES, who may also have lower health literacy.

#8 Teach-back on individual and group level in Sweden: experiences and outcomes from training of health professionals and cultural mediators.

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Teach-back is a well-known method for improving communication between health professionals and patients on individual level and is often recommended in order to make health care organizations more health literate. In Sweden the method is used both on individual and group level.

Prior to the implementation of the method in Sweden it was adjusted in order to match a personcentered care approach. Foremost, the instructions were rewritten in order to ensure that the user of the method use it to control if the information or explanation given was good enough, rather than controlling that the receiver of the information understood. Teach-back gives the health professional the opportunity to improve his or her communication skills. In Sweden, we also stress the importance of mutual understanding in the patient-provider encounter. Consequently, both patients and personnel are requested to summarize given information with their own words.

Health care professionals have been trained through lectures, workshops, leaflets, pocket folders and a film, developed and produced in order to facilitate the use of the method in the healthcare. Outcomes of the training of the health care professionals show that it is easy to motivate why the method should be used and that the method is easy to learn. However, professionals have to practice it regularly to a) experience by themselves how easily misunderstandings occur and b) to adapt their communication style. When the method is used properly, misunderstandings decrease, which in turn improves patient safety. To repeat given information also increases the recollection of it. Communication becomes more person-centered and patients tend to become more involved in their health care.

In the EU project: MILSA educational platform for civic- and health communication, the Teach-back method has been adjusted in order to be able to be used on group levels with newly arrived refugees participating in courses in civic orientation, in order to make those courses more health literate. This because studies show that newly arrived refugees with limited health literacy, benefits less from health interventions than those with higher health

literacy. Cultural mediators have been trained in health literacy and in the Teach-back method in a 16 hours long online module as a part of a longer online course for cultural mediators. Outcomes of the training indicates that the Teach-back method can be used on group levels, promotes identification of misunderstandings and active dialogue participants in between. For many cultural mediators the use of the method has been an eye opener regarding their own perceptions of what is easy and understandable information — many expressed that they through the method realized that their participants often misunderstand much more of the information, than they thought.

The aim of the workshop is to:

- give a brief introduction of two Teach-back methods used in Sweden one that can be used on individual level and one that can be used in group level
- give brief information of the content and outcomes of Teach-back training for health professionals and cultural mediators in Sweden.
- give some knowledge of what to think about when using the Teach-back method on individual and group levels in order to match a people-centered care approach and promote health literacy in organizations.
- give some practical skill training in the Teach-back method on individual- and group level
- give an opportunity to discuss pros, cons and challenges regarding the method with others.

#9 Health literacy responsiveness perceived by information seeking cancer patients. A survey of users of the German cancer information service.

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Background: Health literacy (HL) is the ability to find, understand, assess and apply health information, and an important asset that facilitates patients' participation in health-related decisions. The publicly funded German cancer information service (CIS) provides evidence-based, client-

centered information to support HL and patient participation.

Objectives: Being a health literate organization, the CIS is interested in its clients' HL and their perception of information and communication provided by German oncology health care professionals (OHCP).

Methods: From June to December 2017, consecutive cancer patients (n=841) who contacted the CIS email service received an access link to an online questionnaire along with the CIS answer to their inquiry. The survey used a set of 11 items from the HLS-GER related to health care and a validated 9-item questionnaire on HL-responsive communication in health care services (HL-COM). Additionally, we captured socio-demographics, cancer type and stage, and setting of care. Descriptive analyses were performed with SPSS-V25.

Results: 372 clients followed the link (44%), n=305 (36%) completed the survey and were included in the analyses. Respondent characteristics: 62% female gender; median age 63, 46% with university degree, 52% currently on or up to three month after cancer treatment; 24% inpatient and 76% outpatient setting; type of cancer: breast 40%, prostate 18%, colorectal 6%, lung 4%; 48% rated their health status good or very good.

Respondents reported more difficulties with assessing and processing compared to finding and understanding of health information. They scored much lower on the HLS-GER health care items than the general population (mean index 24.3 vs. 30.5, mean difference -6.3 points, 95% CI: -7.4 bis -5.1, p<0.001). Applying HLS-GER scoring rules nine out of ten respondents have inadequate literacy Ratings of HL-responsive communication of OHCP were poor: mean 2.7 (95% CI 2.5 to 2.8) on a scale from 1 (full disagreement) to 4 (full agreement), and 0.6 points (95%CI -0.8 bis -0.5; p<0.001) lower compared to the validation sample of the HL-COM (mean 3.3). General health carerelated HL and perceived HL-responsive OHCP communication correlate 0.5.

Discussion: We provide real-life data from information seeking patients on their HL and perceived HL responsiveness of cancer care. The survey sample includes patients with a high level of

formal education and all these patients have been successful in finding credible health information, since they were recruited as users of the CIS. The low scores found for general HL should not be seen as individuals' inadequate health literacy but are suggestive of a health care system that makes it difficult for patients to feel and act health literate. This is underscored by the low ratings of OHCP HL-responsiveness. There is a need to improve organizational health literacy, i.e. communication and information in health/cancer care to foster patients' HL and chances to participate in health decisions. Or, in other words: we need to change our health literacy mindset from focusing on people's skills to meet the complex demands of systems towards focusing on the systems' skills to meet the complex demands of people (Sørensen 2018).

#12 Association between health literacy and medication beliefs in a Dutch medication-using population.

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Background: Over the last decade, an increasing appeal is made on patients' ability to self-manage their health and illness and to organize their care1. Health literacy plays an important role in these selfmanagement behaviors. Limited health literacy influences self-management adversely and people with limited health literacy have a poor ability to adhere to treatment recommendations2. Adherence to self-management behaviors in chronic diseases have been shown to be associated with patients' beliefs that taking medication is necessary and their concerns about harmful side effects3. Studies shows that negative medication beliefs are associated with poor medication adherence4,5. An association between medication beliefs and health literacy may be expected. However, this is not clear due to limited research on the association between medication beliefs and health literacy. Knowledge on associations between health literacy and beliefs about medicines, could give insight in patients at risk for low medication adherence, and indications for interventions to improve both medication beliefs and adherence.

Objective: The aim of the current study is to find out whether respondents with lower health literacy have more negative beliefs about medicines, which may account for the worse medication adherence in this population. In this study the effects of gender, age and number of medicines used on the association between health literacy and the Beliefs about Medicines Questionnaire (BMQ)-general will also be assessed.

Methods: The data were collected using an Internet survey in a panel of medication users. Data were derived from the online 'Medication panel' of the Dutch Institute for Rational Use of Medicine, Utrecht, the Netherlands. This panel was founded in 2016 to map opinions of medicine users about different themes concerning pharmaceutical and pharmacotherapeutical care The survey was divided into three parts: a respondents characteristics section, a health literacy questionnaire (Health Literacy Europe Ouestionnaire (HLS-EU-O16) and a questionnaire to measure medication beliefs (BMQ-general). In this study, the BMQ General was used, which has two subscales of four items each. The "overuse" subscale addresses the concept of over-prescription of medication by doctors (e.g., "Doctors place too much trust on medicines"). The "harm" subscale assesses beliefs about how harmful medicines are (e.g., "Medicines do more harm than good"). The scoring method is the total subscale scores ranging from 4 to 20. Higher scores indicate stronger beliefs in overuse or harm of medicines. We used t-tests and ANOVA to compare gender (t test), number of medication (t test) and age (ANOVA) on the HLS-EU-O16, BMO-Overuse and BMO-Harm scores. Post Hoc Test Tamhana's T2 was calculated to compare means between age-categories on the HLS-EU-Q16, BMQ-Overuse and BMQ-Harm. Multivariate linear regression with stepwise selection was used to assess the association between HLS-EU-O16, BMO-Overuse, BMO-Harm, gender, age and number of medication. Statistical significance level was set at 0.05.

Results: A total of 539 of the 2,157 panel members returned the questionnaire. Most study respondents were female (67%) and the mean age was 64 (± 11.4) years old. The mean number of medications used concomitantly was 4.00 (± 2.32) and the frequency of medication intake was 2.50 (\pm 1.43) per day. 29% did not report an illness. Of all respondents, 13% had an inadequate health literacy level, 25% had a problematic health literacy level and 62% had a sufficient health literacy level. The t-test shows that females had a higher level of health literacy compared to males. The Post Hoc Test Tamhana's T2 showed that respondents with the age of 60 years and younger had a lower score on the BMQ-Overuse compared with the respondents older than 70 year of age. The Post Hoc Test Tamhana's T2 also showed that respondents with the age of 60 years and younger had a lower core on the BMO-Harm score compared with the respondents older than 60 years of age. Comparing the number of medications, respondents using less than three medicines a day had more concerns about the overuse of medication compared to respondents using three or more medicines a day. There was a significant association between health literacy and the beliefs about medicines. In a multivariate linear regression analysis, controlling for variables gender, age and number of medication, the associations between health literacy and the concerns about overuse and harm of medicine use remained significant.

Discussion: This study shows that the beliefs about medicines are associated with the health literacy level. This study implies that the healthcare professionals (e.g. general practitioner, pharmacist) should tailor the information about medicines to the health literacy level of the patients and tailor the support to the health literacy competences of their patients. The tailored information and support could cause a decrease in the degree of concerns of the patients. Decreasing the degree of concerns could result in better medication adherence4,5. The healthcare provider must also tailor the information and support on age and number of medication, to decrease the degree of concerns and increase the adherence to self-management.

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#13 Teach-in session: Health literacy online training in MILSA education platform for civic- and health communication for cultural mediators in Sweden.

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Research shows that health promotion efforts not always benefit all newly arrived refugees to the same extent, and that one reason for this may be limited health literacy both on individual and organizational level.

The MILSA education platform is a national project developing capacity for quality assured civic orientation and health communication for newly arrived migrants. The project educates civicand health communicators, i.e. cultural mediators, while at the same time supporting intersectoral collaboration and joint knowledge development for parties working in related sectors.

Civic orientation, an obligatory part of the introduction programmes for newly arrived

migrants in Sweden, has a strong potential for providing significant and positive contributions in their integration process. However, a need for national standardisation, inclusion of health communication, and stronger national intersectoral collaboration have been recognized as national priorities for development. The MILSA educational platform corresponds to these needs for development.

The core of the project is a comprehensive education in civic- and health communication for cutural mediators working within the civic orientation all over Sweden. In total about 200 cultural mediators, will take part in the education during the project period of 3 years. In total, the education will be conducted 4 times, of which approximately 40 participants will attend each round.

The educations' comprehensive education goals are:

- Improved knowledge of the purpose and importance of civic orientation; Increased security in the role as a civic and health communicator.
- Increased knowledge and skills in speaking about Sweden's political system as well as norms and values,
- Acquired in-depth knowledge of health and the themes within civic orientation.
- Developed ability to handle participants with varying degrees of prior knowledge.
- Acquired in-depth knowledge and ability to use different educational and communication tools for facilitating dialogue.
- Developed ability to acquire, understand, evaluate and critically review information.

The education consists of 22 online modules and 6 physical meetings, distributed equally between social sciences and health communication. The online modules runs for about 12 months and most modules consist of 16 hours that the participants will attend within a period of two weeks. All modules contain an equal amount of theoretical and practical learning. The physical meetings are on one day each and are spread out in a period of 18 months.

One of the modules on 16 hours is a health literacy module. The module is divided in 5 sections: health literacy, communication, presentation technology,

critical and equal communication and source criticis. All five chosen with the purpose to promote health literacy on individual and organisational level within the context of civic orientation for newly arrived refugees. Learning activites consists of a mix of online lectures, movies on internet, and written documents. In addition, a mandatory assignment which focusing on teach-back is included.

After completing the module, the aim is that the cultural mediator should know:

- what health literacy is and why it is important for health and society
- different methods that can be used to facilitate people with limited literacy
- various actions that can increase the health literacy of individuals and organisations

In addition they should be able to:

- explain what health literacy is and how health literacy can affect health and society
- explain how health literacy can affect newly arrived refugees and the work in the civic orientation
- access, understand, judge and appraies health information needed for the work in the civic orientation
- use different methods that can facilitate for people with limited health literacy in the civic orientation
- use different methods to promote health literacy of newly arrived refugees within the civic orienation
- assess the extent to which they use plain text and clear design as well as promote gender equality in the material they use in the civic orientation

So far, the educations first round's cultural mediators have taken part of the module. Feedback from the cultural mediators indicates that the module is appreciated and seen as valuable. Results from the mandatory assignment shows that teachback can be used in the civic orientation on group level in order to identify misunderstandings. Several of the cultural mediators expressed that they have increased their ability to identify misunderstanding among their participants, and that they are surprised that so many do not fully understand the information they provide.

Evaluation of the project on several levels is ongoing. An evaluation examines inter alia: how

cultural mediators is affected by participation in the MILSA education and how they implement knowledge from it in their work in the civic orientation, for example to which extent they promote and take health literacy into account in their work. Another evaluation examines how newly arrived refugees in the civic orientation are affected by the participation in the civic orientation and are experiencing the participation if they take part in a course with or without a course leader who has participated in MILSA's education for civicand health communication. In addition, the newly arrived refugees' health literacy will be assessed before and after their participation in the civic orientation and analyses performed in order to examine if all newly arrived refugees, regardless of health literacy level, benefits from the civic orientation to the same extent.

The project is funded by the European Social Fund and the Swedish Ministry of Health and Social Affairs in the period between 2017 and 2020.

The aim of this Teach-In session is to show-case the Health literacy online module for cultural mediators with others, as an example of good practice. The session starts with an introduction to the Milsa project where concrete examples of content are shared with the participants in the session. Secondly, participants will discuss how the initiative can be adapted and applied hands-on in a broader European context to overcome barriers for migrant health literacy in Europe.

#14 Development, Content and Implementation of the German National Action Plan on Health Literacy.

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Introduction: Health literacy has been examined in various international and national studies during the past several years. According to the first German Health Literacy Survey (HLS-GER) every second individual has limited health literacy in Germany and therefore finds it difficult to find, understand, appraise and apply health relevant

information. Thus, a majority of the German population is confronted with challenges to maintain health, prevent diseases and use the healthcare system. Promoting health literacy is a task for all of society which requires a systematic program. The German National Action Plan on Health Literacy presents an agenda for this task.

Material and methods: Based on the results of the HLS-GER, vulnerable groups, deficits and operational fields were identified by a group of 15 experts from academia, practice and policy. In six meetings this expert committee developed a first draft of the national action plan to promote health literacy in Germany. The draft was refined based on various stakeholder consultations. The development of the action plan was funded by the Robert Bosch-Foundation and the Federal Association of the AOK and coordinated by Bielefeld University and Hertie School of Governance.

Results: Data of the HLS-GER show that more than half of the German population perceive great problems in processing health relevant information. Especially vulnerable groups are individuals in older age, with migration background, chronic disease, and low socioeconomic status. Therefore, the plan focuses on four areas of action and presents 15 specific recommendations to improve and strengthen health literacy in Germany. The first area focuses on fostering health literacy in daily life and highlights the importance of the education system and the workplace. The other areas are: making the health care system more user-friendly, health literacy and chronic illness, and expanding health literacy research. The plan follows 5 key enabling participation, principles, e.g. implementing the recommendations into good practice.

Conclusions: The plan was launched in February 2018 and has received great attention in Germany. For the implementation of the national action plan four workshop to specific recommendations will be performed. The first workshop focused on the recommendation 'Enable the education system to promote health literacy early in life'. It was discussed with experts from the education system. The results were included and published in a policy paper.

#15 Online health information - a challenging resource.

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Introduction: The Internet is today one of the main sources for patients to obtain health-related information. Described benefits with patients' increased possibilities for knowledge acquisition are for example that it represents a step towards more person-centred care and enhancement of patients' empowerment. Though, apprehensions are often raised concerning the varying quality of health-related websites, as well as of whether the offered health information matches the eHealth literacy of a population majority. A common focus is also on whether the development of Internetinformed patients affects the interaction between patients and healthcare professionals. The aim of this study was, therefore, to explore primary health care nurses' experiences of meeting patients who obtain health-related information on the Internet.

Method: In this qualitative study, individual, semistructured interviews were conducted with eight primary healthcare nurses from three primary health care centres. The interviews had a focus on their experiences of meeting patients who had obtained health-related information on the Internet. The transcribed interviews were analysed using qualitative content analysis.

Results: The nurses experienced the phenomenon of Internet-informed patients to be both a resource and a challenge. A general view among the nurses was that online health information often caused anxiety in patients who could not sort through, critically evaluate and correctly interpret the massive supply of online information and thereby believed themselves to suffer from "worst imaginable diseases". The nurses also expressed problems patients had that many with distinguishing accurate from inaccurate information, which made the patients confused. Dealing with (e.g. calming, normalising, arguing) these patients was described to be a common and time-consuming part of the nurses' everyday work. The nurses expressed that the development caused changes in roles, as many patients questioned and marginalised the nurses' knowledge and claimed to be experts. Reliable information and correctly interpretation and utilisation of obtained Internet information was considered to be useful for both patients and healthcare, as it facilitated patients' self-care and participation in their care.

Conclusion:It is of great value for healthcare professionals to keep awareness of patients' health information seeking behaviour and the varying eHealth literacy levels and needs among patients. By encouraging a mutual discussion about the patients' interpretation and perceptions of the Internet findings, healthcare professionals will be able to give adequate patient support, regarding, e.g. arisen questions and feelings, medical decision making and navigation to credible websites.

#16 Children's Health Literacy: A Systematic Policy Analysis.

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Background/Objectives: Health literacy has developed into an important policy-making target. While recent non-governmental policy reports highlight to (a) address health literacy already early in life, especially among children and in schools and (b) include health literacy more rigorously in governmental policies, there is no research available on child-related health literacy policies. The aim of this research is to present evidence that can help inform the policy-making regarding children's health literacy.

Methods: The mixed-method design comprises of (1) systematic review methods (database and online search, expert consultation), (2) expert interviews with policy stakeholders, and (3) research synthesis.

Results: The initial search has identified policies for 28 countries including case-law (e.g. USA, Germany), government supported action plans and national strategies (e.g. Australia, China, Taiwan, Scotland, Ireland, Wales, Austria, USA, Singapore), or policy strategies developed by national key experts to inform governmental policy-making (e.g. Canada, Germany). Policies on children's health literacy from South America and

Africa were not identified, although general health literacy was covered in some countries in the context of health, healthcare and NCDs. Three educational health literacy policies could be identified (Australia, Finland, USA). Children are either addressed directly (1) via early approaches and specific programmes, (2) by including health literacy to school health and creating health literate / health literacy friendly school settings, (3) through their parents, (4) in context of healthcarerelated action, or (5) by using a combination of those areas. However, there is almost no evaluation data available nor are these policies underpinned by health literacy evidence generated within the children's population. Most policies are designed for adult populations rather than children.

Discussion: While the approaches vary regarding children's health literacy policies several limitations make it difficult to evaluate the quality of the different policies. To secure and sustain more effective, child-focussed policies, current knowledge gaps regarding children's health literacy levels, available interventions, and evaluations of the policy programs should be addressed.

#17 Beyond knowledge and understanding: health literacy as the capacity to act.

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Background: Many definitions and models of health literacy exist. While some have a narrow scope on functional skills (e.g. reading, numeracy) others predominantly look at information processing aspects (the ability to understand and appraise health information). These types of models focus on cognitive skills ('the capacity to think'). More recent models include behavioural, operational, affective and conative attributes, which are essential to act upon information. We refer to these types of skills as 'the capacity to act'. In psychosocial models, the capacity to act is seen as a major driver of behavioural change.

Most health literacy interventions, however, still have a limited focus on functional/cognitive skills. Studies show that the effects of health literacy

interventions on several outcomes are mixed or limited. This might be because of their narrow focus on cognitive skills.

Objective: In this study we examined the impact of both aspects of health literacy (functional/cognitive and capacity to act) on specific health care outcomes (health care use, experiences with patient-centered care, shared-decision making, self-management).

Methods: In a sample of a national panel of people with a chronic disease (NPCD) questions about health literacy (HLS-EU 16), patient activation (PAM) and outcomes with regard to health care behaviours and experiences were asked. The HLS-EU was used as the instrument to measure the functional / cognitive aspects, the PAM to measure the capacity to act. The outcomes were: number of visits to GP, questions concerning patient-centered care, shared-decision making and self-management (P3C_EQ).

Results: 1341 patients with at least one chronic disease were included in the analyses. 39,9% had limited HL levels and 36,9% had a low activation score. Combined, 22,7% of the sample scored low on both aspects, whereas 45,8% had adequate levels on both. Patients who score low on both use more health care and have less positive experiences with patient-centered care, shared-decision making and self-management. Patients who have adequate competency levels in both respects have the best outcomes.

Conclusions: Both cognitive and non-cognitive aspects of health literacy are important and they enhance each other. The capacity to act is especially important for the extent to which people feel able to self-manage.

#18 Improving quality of care for patients with limited health literacy: care providers' challenges and promising tools for clinical practice.

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This symposium is aimed at researchers, health care providers and policy makers and will consist of three parts:

- 1. Presentation of the results of a recent mixed methods study in the Netherlands among 400 health care providers in primary and secondary care. In this presentation, the challenges of care providers when facing patients with limited health literacy are described. The challenges are ordered following the phases of the patient journey (before, during and after the consultation). Dr. Monique Heijmans
- 2. Presentation of a selection of the most promising tools for clinical practice, with a special focus in the 'teach back' method. Dr. Mirjam Fransen
- 3. Interactive session of 45 minutes with the audience, led by Prof. Dr. Rademakers, on two topics:
- a. which tools are considered to be most promising and feasible in clinical practice? Which experiences do people in the audience have with specific methods?
- b. what is necessary to implement these promising tools on a larger scale in health care practises and organisations? What should be the next steps in research, practice and policy?

#20 Health literacy Knowledge and Perception, and the Communication Skills of Healthcare Professionals.

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Health literacy (HL) is considered as an interaction between the demands of health systems and the skills of individuals. According to the concept of HL, people needed more than general literacy skills to be able to navigate the complexities of a health system. Although there is a considerable overlap between general literacy and HL, it is documented that even well-educated people can have limited-HL. Considering that low HL is an epidemic, current global approach demands health professionals and organizations to be more

accountable for universal precautions approach and improve communication skills, and employ strategies to confirm patient's understanding. It is more rational to consider HL as an interaction between the demands of health systems and the skills of individuals.

There are limited number of studies that reveal the HL perception of healthcare professionals (HCPs) and their communication skills and according to these studies, the knowledge and attitudes of HCPs and/or their usage of HL practices, the awareness of HL and practices of HCPs are limited.

Health communication is interpersonal or mass communication activities which are directed towards improving the health status of individuals and populations and it may involve the integration of mass and multi-media communication with more local and/or personal traditional forms of communication. Improving communication quality in healthcare organizations and to implement universal HL precautions to provide understandable and accessible information to all users of the healthcare system, regardless of their HL levels is a better approach.

Aim: The aim of this study is to evaluate HCPs' awareness of HL and compare the findings among the subgroups of HCPs. Moreover, the frequency of using several universally accepted communication skills was evaluated.

Method: An online survey was developed following a comprehensive literature review, which was conducted to evaluate the knowledge, attitudes, practices, and perceived barriers of HCPs. The study protocol and survey were evaluated by the institutional review board of humanitarian research of the authors' institution and received ethics approval. We selected eight questions to evaluate sociodemographic characteristics, 9 questions to evaluate knowledge, and 12 questions to evaluate attitudes and practices. The number of questions for each participant varied between 26 and 29 depending on his or her answers. The The survey link was distributed by physicians' and nurses' professional societies.

Results: Among the 277 participants who answered the questions, 184 were physicians and 78 were nurses and the remaining 15 were other HCPs. The nurses (35.5 \pm 6.1 years) were significantly younger than the physicians (48.9 \pm 8.9 years; p < 0.0001). Totally, 63.5% of the HCPs were female and while the gender distribution among physicians was equal, 92.3% of the nurses were female. Nearly half of the participants were working in university hospitals (44.0%) followed by private hospitals (21.7%), research and training hospitals (14.8%), state hospitals (4.7%) and occupational health units (4.3%). The average duration of employment (mean \pm standard deviation) of the participants was 19.4 \pm 10.3 years.

More physicians (38.0%) than nurses (18.4%) declared that the first time they heard about the term "HL" was through this survey. significantly greater percentage of nurses (36.8%) than physicians (14.0%) first heard of it when they were students. Although most of the participants did not receive any HL-related training, 92.7% of nurses and 77.3% physicians stated their willingness to receive information/training on the subject. physicians (64.6%) were more likely than nurses (43.8%) to believe that their professional experience enabled HCPs to understand the HL level of a patient and that they would not need a test to measure the HL level.

The frequency of using methods that improve communication with patients and whether the participants' think that the health system/work environment does not support the use of such method were also evaluated. Methods like providing "information specifically designed according to patients' HL level" (8.6%), "individualized, condensed health education session" (10.5%), and "transferring a patient with difficulty to an education centre (11.0%)" were stated as not supported by the health system.

Nurses tend to frequently/always use some of the communication methods more than physicians such as asking the last graduated school, providing written information and training material, reading and repeating the information with the patient, asking the patient to recall the information, calling the patient for follow-up, requesting help from or transferring patient to a more qualified HCP. Providing a shame-free, comfortable environment is the only method that was frequently/always used by more physicians (86.3%) than nurses (72.2%). Fortunately, some of the essential methods that ease the communication with patients were used by

more than 75% of the members of both professions frequently/always, such as, "using everyday language, free of medical terminology", "describing/demonstrating how to use medication, the amount of medication to be taken at a time, and the frequency of taking the medication", "speaking slowly and clearly", and "asking the patient whether the information provided is understood or whether he or she has any questions". According to obstructing HCPs. factors communication with patients were lack of time, complexity and amount of the medical information, and language differences.

Discussion: These results emphasize the urgent need of initiatives to be taken to improve the of HCPs on HLand their awareness communication skills. The current structure of the roles and responsibilities of the HCPs needs to be evaluated to make it more HL-sensitive. HCPs' education, skills, workload, and the infrastructure of their institutions may not comply with the requirements of these initiatives. A global change is needed in the mind-set of the decision makers and educators, job definitions of HCPs, and their work environment. With a national multidimensional approach, results will be achieved, and the problems caused by low HL will be diminished.

#22 Health literacy and active aging – preliminary results from a study among older Finns.

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Background: Taking care of one's health plays a key role in old age wellbeing. With increasing age, most individuals will encounter deteriorations in health and functioning, with which they need to learn to cope. In the face of these changes, older persons focus their resources on what they perceive to be most important to them, i.e. what their goals are, what they are able to do, what they have an opportunity to do and what they actually do. This is what we call active aging. In gerontological research, the concept of active aging is widely used, however it has mainly been defined and modelled

as a goal of a society. Our research team was the first to suggest a definition that looks at active aging from the perspective of the individual and outlined it as "the striving for elements of wellbeing through activities relating to a person's goals, functional capacities and opportunities".

Based on previous studies we know that health literacy is associated with several health-related outcomes among older adults, the trend being that low health literacy is related to less favorable health outcomes. However, the role of health literacy in the active aging process has not been investigated before.

Objective: First, this study examined the feasibility of the short form of the European Health Literacy Survey Questionnaire (HLS-EU-Q16) for use among older Finns. Second, we explored whether health literacy correlated with indicators of health and functioning and finally, if health literacy was associated with active aging in this population.

Methods: Data for this cross-sectional study come from a study entitled "Active aging – resilience and external support as modifiers of the disablement outcome" (AGNES), which is cohort study, funded by the European Research Council, and currently under way at the University of Jyväskylä in Finland. For the current analyses we used data which was collected between October 2017 and April 2018 in the city of Jyväskylä in Central Finland. Altogether 292 men and women, aged 75, were interviewed face-to-face in their homes by interviewers trained using questionnaire. In addition, we conducted a testretest, for which 18 persons answered to the HLS-EU-Q16 for a second time approximately one week after the initial interview.

Background information included gender, level of education, occupational status in working age, perceived financial situation, marital status, living status (alone or with someone) and being a family caregiver. Health literacy was measured with the Finnish translation of the HLS-EU-Q16, cognitive functioning with Mini-Mental State Examination (MMSE), depressive symptoms with the Center for Epidemiologic Studies Depression Scale (CES-D), life-space mobility with the University of Alabama at Birmingham Study of Aging Life-Space Assessment (LSA), physical performance with the Short Physical Performance Battery (SPPB) and active aging with the new University of Jyväskylä

Active Aging Scale (UJACAS). Participants were also asked to rate their self-rated health on a five-point scale from very good to very poor.

The test-retest reliability of the HLS-EU-Q16 was determined by calculating intra-class correlation (ICC) coefficient. Health literacy score, ranging from 0 to 50, was computed. Chi square tests were used to compare health literacy scores between participants by different background variables, and Spearman correlation coefficients were calculated to study the associations of health literacy with cognition, depressive symptoms, chronic conditions, life-space mobility, physical performance and active aging.

Results: 57.5 percent of the participants were women. The mean health literacy score for all participants was 35.05 (Standard Deviation, SD 6.32). In the test-retest, the mean health literacy score obtained from the home interview was 35.9 (SD 5.9) and from the retest 35.4 (SD 5.5) and the intra-class correlation coefficient for these data over the one-week interval was 0.782, p<0.001. Participants who rated their financial situation and self-rated health as very good had the highest health literacy scores. Better health literacy correlated with better cognitive status (Spearman correlation coefficient, r=0.125, p=0.034), fewer depressive symptoms (r=-0.342, p<0.001) fewer chronic conditions (r=-0.277, p<0.001), higher life-space mobility (r=0.236, p<0.001) and better physical performance (r=0.235, p<0.001). In addition, higher health literacy was associated with higher scores on the active aging scale (r=0.460, p<0.001).

Discussion: We found the HLS-EU-Q16 to be a feasible measure for use in older populations. The correlations between health literacy and indicators of health and functioning and active aging indicate that in old age health literacy is a resource for It may help prevent age-related health. deteriorations in health and functioning and promote wellbeing, however these findings need to be confirmed and more closely investigated in larger samples with a wider age-range. The observed association of health literacy and active aging lays a foundation for more detailed analyses on the topic. The results draw attention to the research on the possibilities of older people to promote their wellbeing by themselves.

#23 Improving individual and organizational health literacy (HL) through HL-training in a rural region in Austria.

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Introduction: The HL-Survey-EU-2011 showed that health literacy in the Austrian population and in particular in the federal state of Styria was under European average. The project Gesundheitskurs – gesundheitskompetent in Feldbach" (Jan 2018 - Dec 2020) focus on the compensation of this inadequacy and will be implemented at community setting. Feldbach is a rural town with 13.300 inhabitants in the region of Styria. The present infrastructure and businesses are small structured and there is each form of education except university. The target of the project is to enhance the individual and organizational health literacy by HL-trainings in companies and for the local government and at the population level

The specific aims of the project are:

- To enhance the consciousness of decisionmakers concerning organizational health literacy
- To improve the knowledge and competences (communication, reasoning, strategy making) and skills of multipliers in different companies regarding organizational and individual health literacy
- To increase health literacy at the population level

Methods: The processes will be developed by citizen participation in cooperation with decision-makers and related organizations. The project team consists of experts from the fields of health management, regional development, education, empirical research, active mobility and e-learning methods. Firstly, a local survey was conducted in order to measure health literacy on population level and within companies. Based on the results, two education concepts including grounded HL-theories, training methods and working documents will be developed: firstly, for local decision-makers in companies and on government level and secondly for multipliers within companies.

Additionally, the trained participants will initiate activities within their specific company to improve health literacy of employees and customers. Moreover, a MOOC (massive open online course) will be a low-threshold form for knowledge and competence transfer to population.

Preview: Although, workplace health promotion is a common initiative and well known, the focus on health literacy is new. It might be a challenge to convince company leaders to be part of the planned activities. Further, it might be a key factor to point out the benefits for companies in order to demonstrate the importance of this project for stuff, customers as well as employers.

#24 Development and Implementation of a pilot participatory workshop to build staff capacity towards a sustainable health literate hospital environment.

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Background: A hospital health literacy committee was established at Galway University Hospitals (GUH) in 2015 which identified activities to ameliorate the limitations identified in a health literacy audit including some in relation to written materials. In 2017 the committee wrote and ratified a health literacy policy to assist staff to produce accessible and usable written appropriate. information with processes streamlined and presented in an algorithm. The committee also decided to develop and provide participatory workshops in a supportive environment to facilitate staff in the development of written information using the resources developed. The purpose of the workshops is to raise awareness of health literacy and promote the use of the developed resources (a checklist based on the CDC Communication Index and an evidence informed Do and Don't information sheet for those writing information for patients).

Methods: Workshops were delivered form January-May 2018 and attended by 13 participants. A process and impact evaluation was undertaken to inform further developments for workshop format and delivery. Instruments used included a pre and post survey and a rapid appraisal. The Durlak and DuPre (2008) framework was used to guide the implementation evaluation.

Findings: While recruitment methods were effective, there were high levles of attrition for the second set of workshops. The majority of participants had not developed any patient information materials before. Participants reported increased self-confidence for writing patient information materials (PIMs) and were very satisfied with all aspects of the workshop delivery. Comparison of the CDC Index tool scores showed a significant increase in scores after completing the workshops. Participant feedback highlighted the need for longer sessions, to increase the number of sessions offered and to have smaller class sizes. The addition of peer to peer review and support was also requested.

Conclusion: Health care staff appreciated the value of the workshops. The findings will be used to improve the format and delivery of future workshops

#25 Facilitators and Barriers to The Development Of Health Literacy Capacities Over Time: Findings From A Longitudinal Qualitative Study.

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Background: Health literacy concerns the capacities of people to meet the complex demands of health in modern society. While the research evidence consistently demonstrates poorer health outcomes linked to lower levels of health literacy, relatively little is known about how people develop their health literacy skills in the context of managing their health and illness, how this changes over time and the barriers and facilitators that may be experienced in this process.

Aim: To investigate how individuals develop and practice health literacy in the management of their health and illness over time and to identify the facilitators and barriers in the process.

This study employs a longitudinal Methods: qualitative study design with three waves of data collection over a 12 month period. Purposeful sampling was employed and semi-structured interviews (informed by Sørensen's model) undertaken with participants who attended a -based structured cardiovascular community disease risk reduction programme (T1 N= 26; T2 n= 19; T3, N=17). The HLS-EU 47 item instrument was also completed at T1 and T3 to determine levels of health literacy. The interview data were analysed using thematic analysis (Braun & Clarke, 2006) for within time analysis (at T1, T2, and T3). A matrix format (Miles & Huberman, 1994; Miles, Huberman and Saldana, 2013) to order and summarise data across all cases was also used for the overall longitudinal analysis. The HLS-EU conceptual model was used as the framework to examine how participants access, understand, appraise and use health information as well as the barriers and facilitators to this process.

Findings: Preliminary findings from analysis of T1 to T3 suggest that: participants have strived to embed knowledge, motivation and sustained health practices over time despite experiencing adverse life/illness events; relationships with health care providers (HCP), including perceived support provided experience positive and of communication, are central to facilitating the development of health literacy capacities; participants have gained control and experienced empowerment through the development of health literacy capacities; participants have moved from a focus on cure and care towards disease prevention and health promotion and have acquired an increased understanding of the broader determinants of health including a greater emphasis on mental wellbeing.

Conclusions: Our findings show that interactions with HCPs permeate all aspects of health literacy capacity development from accessing, understanding and appraising information through to support for use of health information in healthcare decision-making. The findings

underscore the importance of including the health care environment (role of HCPS) to understand the potential for heath literacy capacity development at the individual level. From a practice perspective, findings reiterate the necessity to include an understanding of the antecedents and consequences of health literacy in communication training of health care providers.

#26 Improving Galway University Hospitals Health Literacy-Developing the Policy on Written Patient Information.

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Background: The Intervention Research on Health Literacy among Aging populations (IROHLA) (2012-2015) project identified barriers to patient's access and use of hospital services in Galway University Hospitals (GUH). Following this study a Health Literacy Committee was established in GUH in 2015, which includes multidisciplinary staff from GUH and NUIG, as well as service-user representation. The aim of the committee is to create a health literacy friendly organisation by improving written and verbal communication and reducing health literacy demands on service users. One of the committee's objectives was to redevelop the policy on written patient information, which was difficult to follow and was not being used by staff when writing patient information materials. Over a period of 18 months, and numerous iterations, the committee created a new userfriendly policy for the development of written information.

The Initiative: The Health Literacy Committee sought to write a policy that streamlined the process of writing and updating written patient information. A step-by-step algorithm, together with tools, checklists and examples guide staff through the procedure.

Specifically the policy aims to;

☐ Help staff to produce appropriate, accessible and usable written information, which is health literacy friendly and reduces health literacy demands on service users ☐ Ensure a standardised, co-ordinated approach in the production and distribution of written information ☐ Ensure that the agreed procedures in the development of written information are followed ☐ Ensure that all written information produced is easily understood, accurate and evidence-informed Central to the policy is an evidence informed 'Do's and Don'ts' tool and Health Literacy Checklist. This checklist is based on the CDC Clear Communication Index (2014) and ensures that all written patient information produced is clear, accessible, health literacy friendly and meets the aims of the policy.

Next Steps: The committee is currently facilitating staff workshops to promote the policy and ensure that information materials that do not meet the agreed standards are updated and implemented into use in GUH.

#27 Different aspects of health literacy assessed among adolescents with and without immigration background - results of the study "Measurement of Health Literacy Among Adolescents".

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Background: Some studies on health literacy among adults in English speaking countries show lower health literacy among people with immigration background. The connection between health literacy and immigration background in adolescents has not been researched thoroughly. Few international studies that evaluated media health literacy or functional health literacy have shown inconclusive findings. Germany is a country with about 30% of young people (10-20 years-old) who have an immigration background. Up to date there is no study in Germany examining different types of health literacy among adolescents with and without immigration background.

Objective: The objective of our study was to analyse whether there are any differences in the above mentioned population groups regarding different aspect of health literacy.

Method: The cross-sectional paper-and-pencil survey was conducted among adolescents aged 14-17 years. A stratified random sample of addresses from four districts of Berlin's City (Germany) residents' registration office was used. Between April and June 2017, a postal survey was administered. Immigration background (yes/no) was assessed with questions about country of origin of both parents and respondents. A person, who was not born in Germany and/or whose parents both were not born in Germany, was regarded as a with an immigration background. person Functional health literacy was assessed using the Newest Vital Sign Test (NVS), subjective general health literacy using the German version of the Health Literacy Assessment Tool (HLAT-8) and health-related knowledge with 8 multiple-choice questions. To explore differences between the groups, we conducted either Chi-squared or U-Mann Whitney test (rank test) for independent groups. Regression models were used to control for other socio-demographic characteristics (age, sex, educational level, and socioeconomic status of the family).

Results: The response rate was 23.8%. In our analyses we included n=618 cases with complete data on immigration background (1.1% missings). In the Berlin sample 26.21% (n=162) adolescents had an immigration background. The distribution of adolescents with immigration background within age-groups and gender was similar. Comparable to other studies of Germany, the respondents with immigration background had a lower educational level. Our results showed that limited functional health literacy (NVS score <4) was more frequent among adolescents with immigration background (32.45% vs. 18.82%). The adolescents with immigration background answered less of the eight health related knowledge questions (median = 4) correctly than those without immigration background (median = 5). After adjusting for socioimmigration demographic characteristics. background seemed to be relevant only for healthrelated knowledge. The difference among adolescents was also observed regarding subjective general health literacy. However, the difference

was small and disappeared after other sociodemographic factors were considered.

Discussion: The findings of the Berliner sample indicate that differences among adolescents with and without immigration background depended on what aspect of health literacy is being assessed. Comparable findings were found in the German Health Literacy survey (HLS-GER) for the adult population. The differences were evident for functional health literacy and health related knowledge, but negligible for subjective general health literacy. Further research should be conducted to reason those differences and to examine differences within a heterogeneous group of young people with immigration background living in Germany. We should consider what differences in adolescent health literacy levels could be relevant during the life span and therefore how these people can be supported. Since functional health literacy and knowledge were most strongly associated with educational levels of adolescents, the school setting could be an optimal place to improve health literacy.

#28 Health literacy and decision making: self-efficacy moderators the relationship between health literacy and decision conflict in prostate cancer patients.

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Background: In Ireland, more than 3000 men are diagnosed annually with prostate cancer. A number of treatment options are available to patients and include surgery, brachytherapy and external beam radiotherapy with or without hormonal therapy. Active surveillance and watchful wait are also methods used to manage this condition. In the absence of a gold standard treatment men are given the opportunity to decide which treatment path they will follow. Although all options offer similar outcomes in terms of survival, the impact of these treatments on health related quality of life varies. Late side effects range from fatigue to sexual, urinary and bowel dysfunction.

For men faced with decision making in this context, their health literacy: ability to obtain, process, understand and apply information, is essential in order to reduce the likelihood of decision regret in this population. Although studies have identified that men with higher levels of self-efficacy are better able to engage with their doctor in relation to decision making about prostate cancer screening, little is known about the role of self-efficacy and health literacy in prostate cancer patients at the time of decision making about treatment.

Objective: As part of a larger mixed methods study, this study aimed to test the hypothesis that self-efficacy moderates the relationship between health literacy and decision conflict in prostate cancer patients faced with decision making about treatment.

Method: Cross sectional data from a convenience sample of prostate cancer patients attending two radiation oncology clinics in Ireland were obtained. To be eligible for this study, participants needed to be male, over 18 years of age, with a diagnosis of non-metastatic prostate cancer who had more than one treatment option available to them and had not yet commenced treatment. Those without a good standard of English or deemed by the radiation oncologist to be unable to give written consent were not eligible to participate in this study. Social demographics and medical characteristics were obtained. The short version of the European Health Literacy Survey tool (HLS-EU-Q16) was used to measure health literacy with scores ranging from 0-16 (higher scores indicate higher health literacy). Self-efficacy was measured using the 10 item generalized self-efficacy scale developed by Schwarzer and Jerusalem (1995). The score for each question ranges from 1 to 4 with higher scores indicating a greater generalized sense of selfefficacy. A mean score of 2.92 for normative samples has been reported by the developers. The Decision Conflict Scale (O Connor, 1995), validated in healthcare and oncology settings, was used to measure decision conflict. Scores range from 0 to 100, with higher scores indicating greater decisional conflict.

Results: Of the 150 surveys distributed, 68 surveys were returned (45% response rate). The mean age of participants was 66.33 years (SD=8.24) and all but 2 participants were Irish. Of the 56 participants

in a relationship, 53 (78%) were living with their partner, and 12 participants (18%) were not in a relationship at the time of data collection. Education level ranged from primary level education (28%) to third level/postgraduate level education (26%). In terms of employment, 40 were not working due to retirement (52%) or unemployment (7%), 16 were working full time (24%) and 9 were working part-time (13%). More than half of the participants (n = 40) had a family history of cancer with 28% having a family member diagnosed with prostate cancer, and 51% had a friend/friends diagnosed with prostate cancer.

Overall the sample showed high levels of health literacy ($M=13.39,\ SD=2.96$) but more than a quarter (28.6%) scored 12 or less indicating insufficient or problematic levels of health literacy. A mean score of 3.23 (SD=0.52) was found for self- efficacy in this sample. Indicating low decision conflict, the mean decision conflict score was 19.82 (SD=17.99).

A statistically significant negative relationship was found between health literacy and decision conflict (r = -.27, p = .04), and self-efficacy and decision conflict (r = -.39, p < .001). Higher levels of decision conflict were associated with lower levels of health literacy and lower levels of self-efficacy. A hierarchical multiple linear regression revealed that self-efficacy significantly moderated the relationship between health literacy and decision conflict (B = .26, t (52) = 2.08, p = .04), when age, relationship status, perceived social support and prostate cancer knowledge were controlled. Higher levels of decision conflict were seen in men with low levels of health literacy and low self-efficacy in comparison to men with low health literacy but high self-efficacy.

Discussion: This highlights the important role health literacy plays in decision making, particularly in men with low self-efficacy. In order to reduce decision regret and increase quality of life in prostate cancer survivors it is important to educate men about treatment using understandable formats, so all patients can participate in shared decision making about prostate cancer treatment.

#29 Children`s Health Literacy: A Systematic Policy Analysis.

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Background/Objectives: Health literacy has developed into an important policy-making target. While recent non-governmental policy reports highlight to (a) address health literacy already early in life, especially among children and in schools and (b) include health literacy more rigorously in governmental policies, there is no research available on child-related health literacy policies. The aim of this research is to present evidence that can help inform the policy-making regarding children's health literacy.

Methods: The mixed-method design comprises of (1) systematic review methods (database and online search, expert consultation), (2) expert interviews with policy stakeholders, and (3) research synthesis.

Results: The initial search has identified policies for 28 countries including case-law (e.g. USA, Germany), government supported action plans and national strategies (e.g. Australia, China, Taiwan, Ireland, Wales, Austria, Scotland, Singapore), or policy strategies developed by national key experts to inform governmental policy-making (e.g. Canada, Germany). Policies on children's health literacy from South America and Africa were not identified, although general health literacy was covered in some countries in the context of health, healthcare and NCDs. Three educational health literacy policies could be identified (Australia, Finland, USA). Children are either addressed directly (1) via early approaches and specific programmes, (2) by including health literacy to school health and creating health literate / health literacy friendly school settings, (3) through their parents, (4) in context of healthcarerelated action, or (5) by using a combination of those areas. However, there is almost no evaluation data available nor are these policies underpinned by health literacy evidence generated within the children's population. Most policies are designed for adult populations rather than children.

Discussion: While the approaches vary regarding children's health literacy policies several limitations make it difficult to evaluate the quality

of the different policies. To secure and sustain more effective, child-focussed policies, current knowledge gaps regarding children's health literacy levels, available interventions, and evaluations of the policy programs should be addressed.

#30 How to respond to patients with varying health literacy strengths and limitations? A responsibility of health professionals and institutions.

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Background: Although health literacy is commonly defined as an individual trait—the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions—there is a growing appreciation that health literacy does not depend on the skills of individuals alone. Health literacy emerges when the expectations, preferences, and skills of individuals seeking health information and services meet (Rudd & Anderson 2006). Recognizing that addressing health literacy is critical to delivering person-centered health care, a wide range of organizations have emphasized the need to tackle system-level factors to ensure that consumers can make informed health care decisions. Health literate health care organizations recognize that miscommunication that negatively affects patient care and outcomes is very common. Health literate health care organizations also recognize that individuals who ordinarily have adequate health literacy may have difficulty processing and using information when they are sick, frightened, or otherwise impaired (Walt et al. 2010). Systems must therefore be redesigned to accommodate the unpredictability of health literacy skills. Under the stewardship of health care organizations that are committed to being health literate, everyone benefits from communication that is clear and easy to understand.

Aims: This Workshop is based on 10 attributes that qualify a health literate health care organization (Brach et al. 2012). Health care organizations that embody these attributes create an environment that enables people to access and benefit optimally from the range of health care services.

The workshop attempts to launch health care organizations on their journey to becoming health literate and aims to provide travelers with some guideposts. Workshop participants will have various opportunities to explore their role in creating a health literacy responsive health care environment, learn strategies to improve teaching-and communication abilities in small group work. Learning outcomes: Participants will...

- know the ten attributes of a health literate health care organisation
- be able to self-asses the health literacy responsiveness of the health care institution they work in
- be capable to identify levers for change in their health care institutions
- become familiar with strategies and skills to improve heath literacy responsiveness Schedule (Total 60 to 75 minutes)
- Theoretical input including self-assessment of HL-responsiveness of the participants institutions (TED-survey based on Kowalski et al, 2015)
- Strategies to enhance organisational HL
- Small group work: How to increase organisational HL in my Institution?
- Presentation of small group work
- Plenary discussion.

The workshop agenda also includes introduction of some helpful, easy to use skills and tools that make communication and information more comprehensible and client/patient-centered and foster patient participation: the teach-back and chunk and check techniques for spoken communication and text analysis tools for written health information, readily available online in many languages.

The Workshop is meant to sensitize participants for the issue and their own responsibility in supporting their clients'/patients'ability to act health literate, pointing out key issues and requirements.

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#31 Health literacy and medication adherence: identification of successful interventions.

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Background: Information and motivation are the key factors associated with increased adherence to medication. Literature, especially around cardiovascular disease and diabetes, has determined the importance of targeting subgroups, such as patients with inadequate health literacy, in order to minimize health inequities and common risk factors.

Objectives: To systematically review published evidence on interventions conducted by healthcare professionals to enhance patients' health literacy and resultant medication adherence. Secondary objectives were to determine improved rate of hospitalisation, clinical outcomes and primary care burden in relation to health literacy interventions and establish which health literacy interventions can be used by pharmacists in community pharmacies.

Methods: Identified search terms were adapted for use to search literature across the specified databases. Primary research studies, systematic reviews, reviews and meta-analyses written in the English Language published from the year 2000 onwards were included whilst Grey literature was excluded. The electronic sources searched were: MEDLINE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), International

Pharmaceutical Abstracts (IPA), Cochrane Library including the Cochrane Database of Systematic Reviews (CDSR) and Web of Science. Relevant references of identified papers were searched manually. Inclusion criteria were: patients who are 18 years or older, on prescribed chronic medication for non-communicable diseases, with inadequate health literacy and inadequately adherent with their medication. Primary outcomes include the definition and scope of health literacy, and a statistically significant enhancement in knowledge and medication adherence. Secondary outcomes include improved clinical outcomes and decreased primary care burden and hospitalisation. Primary and secondary outcome data were extracted and recorded on a pre-set data extraction sheet compiled by the reviewers. Quality assessment of selected studies were carried out separately by a minimum of two reviewers and will be established based on the Critical Appraisal Skills Programme (CASP) tools. Discrepancies in quality assessment between the two reviewers will be discussed and agreed upon by the review team.

Results: A total of 31,893 citations were retrieved: 12,890 in Medline, 3,695 in CINAHL, 1,259 in IPA, 3,785 in Cochrane Library and 10,264 in Web of Science. After screening, 8,217 duplicates were removed and a total of 1,377 potential titles were kept. Of these 1,377 titles, 128 titles that pertained to communicable diseases were excluded. Following abstract screening based on inclusion and exclusion criteria, 73 full papers with special focus on successful interventions with statistically significant improvement in health literacy and medication adherence, were retained. The systematic review is currently in its data extraction and quality assessment phase and will be concluded by the end of January 2019.

Conclusion: Identifying and reporting successful interventions to enhance health literacy and resultant medication adherence in patients with non-communicable diseases, while highlighting research gaps, could serve as a reference for future research. Findings of this systematic review could also serve as foundation for the adoption and implementation of identified successful interventions into practice.

#32 The role of health literacy and its mediators in the onset of chronic kidney disease.

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Introduction: Low health literacy (LHL) is the inability to deal with health information related to one's health, and has been associated with poor outcomes in chronic kidney disease (CKD) patients, a very prevalent and burdening chronic disease. Some studies suggest that the prevalence of LHL might vary across individuals with different levels of renal impairment (renal function stages), and that LHL might be involved in the deterioration of renal function. However, the effect of LHL on the onset of CKD hasn't been studied. Furthermore, it could be that this effect is mediated by the CKD risk factors, namely the presence of hypertension, diabetes, and metabolic syndrome, and the use of and nonsteroidal tobacco, alcohol, inflammatory drugs. This hypothesis also hasn't been tested, and it stems from the already known association between LHL and worse health behaviors and worse disease management. Therefore, understanding the distribution of LHL and its association with the onset of CKD, as well as the mediators involved in this association, is important for developing more efficient preventive interventions against CKD.

Objectives: To assess (1) the prevalence of LHL at the different stages of renal function, (2) the association between LHL and the onset of CKD, and (3) whether the CKD risk factors mediate this association.

Methods: This study was performed using data from the Lifelines Study, a multidisciplinary prospective population-based cohort among 167,729 individuals living in the North East region of the Netherlands. Data from 93,885 adult participants were analyzed at baseline and after approximately four years of follow-up. Health literacy was assessed using a validated screening questionnaire and patients' renal function was calculated using values of serum creatinine and proteinuria. Participants were considered as

positive for CKD onset of they had a normal renal function at baseline (above the CKD threshold) that dropped to a low renal function at the follow-up assessment (below the CKD threshold). We performed the analysis for both the classical CKD threshold of 60ml/min/1.73m2 and the more recently recommended threshold of 45ml/min/1.73m2. The three objectives were analyzed using, respectively, Pearson's chi-square tests, logistic regression, and structural equation modeling.

Results: At baseline, the overall prevalence of LHL was 27.5%, and this prevalence was higher in worse stages of renal function (26.4%, 29.3%, 37.2%, 41.7%, 40.9%, and 50.0% in stages 1, 2, 3a, 3b, 4, and 5 respectively, with p<.05). LHL was significantly associated with the onset of CKD, considering both the 60 and 45ml/min/1.73m2 thresholds (OR 1.39 and 1.44, respectively). These associations were mediated by hypertension, diabetes, metabolic syndrome, high intake of nonsteroidal anti-inflammatory drugs, and not smoking (26.8%, 31.9%, 21%, 34.1%, 10.9%), but not by alcohol intake. All results above are adjusted for the confounders age and sex.

Discussion: We found that the prevalence of LHL in our sample was comparable to the Dutch population, and this prevalence was higher in worse stages of renal function. This trend was present even in stages 1, 2 and 3, where individuals are likely asymptomatic, suggesting most association between LHL and renal function deterioration. Furthermore, LHL was positively associated with the onset of CKD for both the 60 and 45ml/min/1.73m2 thresholds. An important explanation for this association could be the worse health behaviors and comorbidities presented by LHL individuals, as examined in our mediation analysis. We detected that the association between health literacy and CKD onset was positively mediated by hypertension, diabetes, metabolic syndrome, and high intake of nonsteroidal antiinflammatory drugs. These findings are in line with other studies showing the negative effects of LHL on disease management, adoption of healthy lifestyles, and drug-regimen adherence and understanding. Thus, this suggests that a large part of the CKD onset in LHL individuals could potentially be preventable with the improvement of health-related behaviors, disease management, and with the education about the conscientious use of nonsteroidal anti-inflammatory drugs.

In contrast to our hypotheses, not smoking showed a positive mediation and alcohol intake did not appear to be a mediator in the association between LHL and CKD onset. A large part of the participants that smoked or had a high alcohol intake didn't have values of renal function at the second assessment. Because of this, these participants were not included in the analysis, what could have changed the risk profile of our final sample and may explain our results.

In conclusion, our study may have important public health and policy implications. By understanding the mediation factors that explain the relationship between LHL and the CKD onset, it becomes possible to design interventions targeting not only the general LHL problem, but also more specifically modify the mediators, i.e. health-related behaviors, existing comorbidities, and the excessive use of nonsteroidal anti-inflammatory drugs. These measures could be taken already from stages with minor renal impairment, when individuals are not even ill yet. In this way, we could achieve a more tailored and effective prevention and care for LHL persons.

#33 Signs of a health literate organization? A comparative assessment of the linguistic landscapes of Austrian and Canadian hospitals.

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Background: Wayfinding in hospitals is a complex issue, as patients are usually under stress and often must navigate to multiple locations within a single visit. Additionally, temporary staff, junior doctors as well as medical students are challenged by route planning and lives are potentially endangered as a result. The time needed to redirect patients and visitors, is estimated to correspond to ten additional hours per patient per bed per year. Research on wayfinding in healthcare comes from various disciplines, such as health literacy, environmental psychology, policy, management and sociolinguistics. Research on linguistic landscapes

in the health sector deals with the multilingualism and accessibility of orientation and health-promoting signage and how they symbolically create the healthcare system. Similarly, the white paper, "Ten Attributes of Health Literate Health Care Organizations" describes what healthcare organizations can do to reduce barriers for people to access health information and services. This project examines the health literate attributes and perceptions of the linguistic landscapes of hospitals in Austria and Canada from patients' perspectives. Methods:

A purposeful convenience sample of four participants were selected for this project. Participants were recruited based on their age and their language proficiency. As older patients have trouble with wayfinding, one participant over the age of 60 was selected from each country. While language barriers influence the perception and comprehensibility of signage one non-native speaker from Austria and Canada were selected. For the purposes of anonymity participants were assigned the code names A1 (Older Austrian), A2 (Second Language Speaker in Austria) and C1 (Older Canadian), C2 (Second Language Speaker in Canada). The study was conducted in the entrance and lobby areas of four general hospitals in Canada and Austria. A survey with both quantitative and qualitative questions was given to the four participants. Part one asked for demographic information. Part two consisted of six questions. The first question asked participants to generally reflect on how healthcare organizations communicate through signage. The second and third questions required participants to rank their confidence in navigating through hospital as well as the extent to which the signage made them feel welcome using a 5 point Likert scale. Questions four and five asked participants about the language used in the signs, namely whether they noticed if signs contained medical jargon that might be difficult to understand and whether there were signs or pamphlets in languages other than the dominant language in their country. Question six asked patients if the signs created any communication barriers. Finally, part three of the questionaire was open-ended. Participants were asked to visit the entrance area of hospital in their community and take six pictures of signs, pamphlets or other visual examples of language within the facility. After taking the photographs participants were asked to write a caption for each photograph that expressed why they took the photograph, how the image made them feel and what they were thinking about when they took it. Participants were instructed to critically reflect on the signage. The questionnaires, photographs and descriptions were analyzed from a discourse analytic perspective. Additionally, the researcher analyzed the photographs and visited the entrance areas of the four hospitals to assess how they corresponded with the ten attributes of a health literate organization.

Results: Participants ranged from ages twenty-five to sixty-four years. Three out of four participants were Caucasian and one participant was Asian. Two participants had German as their first language, one participant's mother tongue was English and one participant was a bilingual Tamil and English speaker. The participants selected a total of twenty-four photos of signs, maps, symbols, posters and works of art.

The descriptions include five discourses: 1) wayfinding 2) patient centeredness 3) health promotion 4) regulation 5) multilingualism. Four common themes emerged from the photovoice pictures and captions documented in Canada: clear signage, the importance of hand hygiene, the relevance of multilingual signs and feeling connected to the staff. The photovoice pictures and captions from Austrian hospitals revealed three common themes: the need for clear wayfinding information, trust in the competence of the staff and feelings of irritation and confusion. All participants found medical jargon on signage difficult to understand. In general, the Canadian hospitals appeared have signage written to and communication that was easier to understand and act on than in Austrian hospitals. Signage in Canadian hospitals was people-centred and referred to patients as part of the healthcare team. Three out of four of the hospitals had signs with consistent symbols, words and graphics as well as large easy to read font.

Conclusion & Future Perspectives: This pilot study shows that hospitals in Austria are hardly adapted to serve multilingual populations with their signage. In Canada, multilingual signage appeared to be more symbolic than practical and most of the information appeared in English only. Based on participant perceptions, it appears that Austrian and Canadian hospitals are linguistic spaces tailored to native speakers. Patient-centredness was valued by

all participants and it appeared that Canadian hospitals were more inclined to design health care facilities with features that help patients find their way. All participants appreciated signage and messaging that took their needs and dignity into account. A larger scale study with a more extensive sample size might provide more concrete and generalizable results. To obtain a more holistic perspective, future studies will involve interviews with the hospital administrators in order to determine if there are policies, strategies and or goals in these hospitals to improve the multilingualism of the signage as well as the health literacy of the organization.

#34 Plain Language for Patient Safety and Usability: Health Literacy in Medical Affairs

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Applying health literacy research communications about drugs and treatment options can improve patient safety and health outcomes. This symposium will describe how [Global Biopharmaceutical Company] applies health literacy principles in communications with thousands of health care professionals (HCPs) around the world. [Global Biopharmaceutical Company] has a network communication system for professional, scientific discussions through its medical affairs division. Medical interactions are non-promotional and focused on scientific exchange. These discussions are a way for clinicians and other providers to ask questions, share their feedback on the available scientific evidence for its products and share their professional experiences.

Our team in the patient safety group of this company identified an opportunity to improve patient safety and potentially make it easier for HCPs to talk to their patients about the benefits and risks of treatment through health literacy training. This symposium would describe how we approached this issue, what we identified as a significant challenge, how we broke this issue down to better understand the root cause, our specific solution that applied plain language research to address the systemic need, how we built

that solution into a health literacy training program and executed it, and then how we are continually collecting feedback to evaluate the value of our solution.

#35 Therapeutic patient education: an opportunity to meet health literacy needs of patients with low literacy skills. A pedagogical intervention model.

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Introduction: In France, therapeutic patient education (TPE) is an important contribution to the development of the autonomy of people with chronic diseases. Low health literacy (HL) is a major obstacle to accessing this education, particularly among illiterate patients. There is every indication that these individuals would first need to have their LS increased in order to be able to take a TPE. However, it seems possible to reverse this reasoning by considering LS no longer as an obstacle to health education but to think of TPE as an opportunity to meet the specific needs of LS and literacy more broadly. The aim of this work is to develop a pedagogical intervention model to adapt TPE to the specific needs of chronic patients with illiteracy.

Methods: This qualitative research is based on three sequential methods: two scoping reviews, a focus group with 10 TPE programs coordinators and semi-structured interviews with 11 people experiencing illiteracy and 9 experts in the field of illiteracy.

Results: According to systemic and socioconstructivist logics, the results show that taking into account illiteracy in TPE is possible and could contribute to the increase in LS skills and more broadly in literacy skills. In a logic of proportionate universalism, the model proposes two different educational approaches, depending on the educational opportunity of the moment. The first is an adaptation of TPE programs and their constituant stages. The second involves proposing therapeutic education actions that could strengthen the current educational offer and adapt to a vulnerable public.

Discussion: While TPE could be considered as a first step towards a return to learning for illiterate people, taking LS into account in care will require the establishment of links between the health and socio-educational sectors in order to provide a gateway for these groups, which are often far from the care system. The training of carers/educators and the recognition of different educational formats would make it possible to adapt the educational offer in its content and methods.

Conclusion: The proposed pedagogical intervention model responds to inequalities in access to TPE of illiterate people. It promotes a singular and global vision of the person contributing to his or her autonomy in health within the framework of a personal medicine. Future intervention research in collaboration with all stakeholders should make it possible to test the feasibility and then the effectiveness of such a pedagogical model.

#36 Health Literacy and preferred information resources among immigrants in older age in Germany. Findings from a cross-sectional survey.

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Background: Abilities and skills to find, understand, appraise, and apply health related information named health literacy (HL) are essential for an informed and self-determined decision-making and navigating the healthcare system. Empirical evidence indicates that older people as well as people with migration background tend to have lower health literacy levels. Thus, immigrants in older age are of special interest as they unite two facets of vulnerability.

Objective: Therefore, the aim of this analysis is to learn more about health literacy, especially the different phases of information processing, and factors associated with it among immigrants in older age and older non-immigrants in Germany.

Methods: For this analysis, a subsample of the HLS-NRW study with 500 older people aged between 65 and 80 years with migration background (n=250) and without migration background (n=250) was used. Data were collected by a quota sample based on age, gender, education, migration background, region in North Rhine-Westphalia, Germany, by computer assisted personal interviews (CAPI) in German, Russian, and Turkish. Comprehensive HL was assessed using the HLS-EU-Q47, assessing perceived difficulties in information processing. Functional HL was measured by the Newest Vital Sign (NVS). Age, gender, net household income, educational level, social status, and chronic illness were included as general covariates. Furthermore, migration experience, country of birth language mainly spoken at home and nationality were assessed as migrant specific variables. In addition, preferred information resources were assessed. Data analyses comprised descriptive statistics, bivariate and multivariate analyses.

Results: The majority of older immigrants and non-immigrants seeks for information at their GP (43.2%; 46.8%), followed by a Specialist (15.4%; 16.6%) and the Pharmacy (17.4%; 16.6%). A greater proportion of older immigrants compared to non-immigrants seeks for information at their families (14.8%; 9.4%). Emergency units, friends, internet, brochures and information centers are preferred by less than 7% of both groups as an information resource.

Mean comprehensive health literacy (27.19; SD 7.17 vs. 30.55; SD 7.16) and functional health literacy (3.99; SD 1.89 vs. 4.68; SD 1.55) is lower among immigrants compared to non-immigrants (p<0.01). Finding and evaluating information are perceived more difficult than understanding and applying among both groups, though mean scores are significantly lower among immigrants (p<0.01). Among older immigrants age, education, income, social status and functional health literacy are correlated with all steps of information processing (p<0.01). Immigrants not speaking mainly German at home have significantly lower health literacy in all phases of information processing compared to immigrants speaking German. In addition, nationality is correlated with understanding information (p<0.05). Multivariate regressions show that functional health literacy is the strongest predictor for all steps of information processing among immigrants in older age. Immigrants not speaking German at home perceive more difficulties in finding, understanding, and applying health information. Furthermore, social status is associated with perceived difficulties in applying health information among immigrants.

Discussion: An analysis of information processing older immigrants provides useful information for developing tailored interventions. There is need for measures to improve health literacy of older immigrants, especially in finding and evaluating health information. In addition to health professionals, families play an important role in the information process among immigrants and therefore need to be targeted. However, immigrants are a heterogeneous group and only some relevant co-variates could be included in the analyses. The results indicate that special attention should be devoted to older immigrants with poor German language skills. There is need for further analysis also taking into account migrant specific health literacy (e.g. abilities and competencies to seek for interpreter services) and not only general health literacy. Interventions aiming at reducing difficulties in health information processing among older immigrants need to strengthen individual competencies and improve system related aspects such as enabling health professionals to better communicate or use preferred information resources.

#37 The Crystal Clear Mark: Building Literacy Friendly Pharmacies in Ireland.

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This symposium will outline the development of the Crystal Clear Pharmacy Mark and what literacy friendly practices it is built upon. The Crystal Clear Mark is an innovative approach to recognise pharmacies that incorporate literacy friendly practices into their organisational structure. The Crystal Clear programme recognises the critical role pharmacies play in helping patients understand and take action to improve their health. This symposium will look at the challenges facing pharmacists as they work on organisational changes and how the advocacy and support of the Irish Pharmacy Union can help address some of

these challenges. A recent formative evaluation on the Crystal Clear programme will also be used to highlight what practices Crystal Clear pharmacies are using, including the most common and the most innovative practices. The voices of the pharmacists will also be heard from interviews conducted in the evaluation.

Symposium Learning Objectives: The aims of this symposium are to:

- 1. Trace the development of the Crystal Clear programme and the nine quality standards used to measure literacy friendly practices.
- 2. Introduce the unique position of pharmacists in health care and the challenges they face that can make literacy friendly practices difficult to implement.
- 3. Present an assessment of literacy friendly practices based on data gathered through the online self-audits.
- 4. Highlight coordinated actions to address some of the major challenges and set up more literacy friendly practices for the future.
- 5. Invite participants to consider how a similar approach might work to make their organisations more health literate.

Section #1: The History and Development of the Crystal Clear Pharmacy Mark (10 minutes, 5 for questions and discussion)

The creation of the Crystal Clear Pharmacy Mark included partnerships between the National Adult Literacy Agency (NALA), the Irish Pharmacy Union (IPU) and MSD, which led to funding, development, advertising, and administration of the Crystal Clear Mark review system. This initiative was supported by Ireland's national framework for action to improve the health and wellbeing of people in Ireland - http://www.healthyireland.ie/ The framework was the first government policy on health literacy which committed to: "Address and prioritise health literacy in developing future policy, educational and information interventions." The speaker will also point out the importance of nine quality standards in demonstrating literacy friendly practices.

Section #2: The Important Role of Pharmacies and the Challenges They Face (10 minutes, 5 for questions and discussion)

Pharmacists are often involved at every step of medication adherence with their customers.

Customers also usually talk more frequently to pharmacists than to other health providers. Yet pharmacists who try to use literacy friendly practices can run into problems due to regulations on written materials such as prescription labels and product instruction leaflets. Electronic systems for labeling and vendors for signage can also make it difficult to use best practices.

Section #3: What Literacy Friendly Practices are Irish Pharmacists Using and How Has Applying for the Mark Affected Practices. (15 minutes, 5 for questions and discussion)

The presenters will highlight the results of a formative evaluation that a visiting consultant conducted in 2017. The evaluation analysed all of the data that pharmacies submitted to become a Crystal Clear Pharmacy, interviewed Crystal Clear pharmacists and conducted site visits. Participants will hear about the best practices and innovative approaches from the evaluation and then a pharmacists' thoughts on the process to become a Crystal Clear pharmacy.

Section #4: Advocacy and Future Approaches (10 minutes, 5 for questions and discussion)

The role of the Irish Pharmacy Union (IPU) is invaluable in advocating for electronic record changes and signage vendors. Incorporating health literacy into the education of all three pharmacy schools in the country will gradually increase the value of literacy friendly approaches throughout the country.

Section #5: What can Participants Take Back to their Organisations and their Countries? (25 minute discussion)

One of the goals of the symposium is to present an organisational approach that could be replicated in different countries and different organisations. One of the presenters will briefly show how NALA is using a similar Crystal Clear system to recognise general practitioner offices and presenters hospitals. The will challenge participants to consider how a similar approach to building health literacy organisations might work in their own settings. The symposium will end with a discussion about the possibilities.

#38 Patients' and healthcare professionals' perspectives on health literacy in relation to asthma and COPD self-management.

<u>**Dr. Iris van der Heide¹**</u>, Dr. Iraj Poureslami², Prof. Mark FitzGerald², Drs. Jessica Shum²

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Introduction: According to the World Health Organization, an estimated 235 million people, worldwide suffer from asthma and 64 million from chronic obstructive pulmonary disease (COPD), placing a high burden on healthcare systems and negatively affecting people's quality of life. Studies have found that health literacy (HL) is an important determinant of asthma and COPD selfmanagement.

There is an increased recognition that HL is not merely an individual attribute, but rather a construct that emerges from the interaction between individuals/patients and healthcare contexts, including healthcare professionals (HCPs), healthcare organizations and healthcare systems. Nevertheless, HL is generally not framed as a shared responsibility between patients and professionals.

In order to enhance asthma and COPD self-management practices, it is of the utmost importance to enhance HL by focussing on both the patient and the HCP side of the medal. In other words, it is essential to obtain more insight into factors related to either patients' competences and HCPs' performances that may affect HL in the context of asthma and COPD self-management. Insight is currently lacking in this regard. Furthermore, the voices and perspectives of patients and HCPs are largely neglected in the HL research paradigm in general and specifically with respect to HL in relation to asthma and COPD self-management.

Therefore, this qualitative study aims to provide insights into factors that affect asthma and COPD patients' HL from a patient and a HCP point of view, across five HL domains: accessing, understanding, evaluating, communicating and using health-related information. We are specifically interested in factors affecting HL that

relate to either patients' competences (e.g., literacy skills) or HCPs' performances (e.g., communication skills), given our understanding of HL as a construct that is constituted in the interaction between patients and HCPs.

Methods: A total of 18 semi-structured focus groups with French and English speaking asthma and COPD patients (N=75) and 45 interviews with HCPs were conducted between December 2015-April 2017. Participants were asked about their experiences with five HL domains (accessing, understanding, evaluating, communicating, and using health-related information). Data were analysed qualitatively. Factors were identified from the data that may affect one or more HL domains and that relate to patients' competences or HCPs' performances.

Results: Both patients and HCPs mentioned factors that relate to multiple domains of HL, but also factors that relate specifically to one of the HL domains. Factors mentioned by both patients and HCPs that hamper patients' access to information and their understanding, evaluation, communication and use of information include: HCP that do not provide identical messages to patients, lack of time during medical consultations and language/cultural differences between patient and HCPs.

Besides these domain transcending factors, domain specific factors were mentioned by both patients and HCPs. Some of these domain specific factors were mentioned only by patients, such as patient's ability to judge the credibility of information, some only by HCPs, such as patients' cognitive abilities, and some by both, such as the relevancy of the information provided by HCPs. Most of the factors mentioned by both patients and HCPs related to the competences of HCPs.

Conclusion: Based on patients' and HCPs' points of views, HL appears to be affected by factors related to both competences of patients, but mainly by factors related to the performances of HCPs. The findings of this study can inform HCPs about ways in which HL, and thereby asthma and COPD selfmanagement could be enhanced, by targeting the factors affecting HL as presented in this study.

#39 Health literacy in chronic disease management: a matter of interaction.

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Health literacy, generally defined as the ability to access, understand, evaluate and use health information to make informed decisions, can play a crucial role in the management of chronic diseases. As the prevalence of chronic diseases increases worldwide, a call for novel approaches to more effectively manage these conditions has become a priority. An increasing number of healthcare professionals and policy makers are beginning to recognize the importance of health literacy in the effective management of patients with chronic conditions. Health literacy is thereby gradually becoming a focal point of intervention and strategy development. Although research in this area is evolving rapidly, there are still multiple obstacles that hamper an accurate understanding of the fundamental concept of health literacy and the development of effective interventions for its enhancement.

Several key publications emphasize that health literacy is not merely a matter of individual skills but that it is highly dependent on the accessibility of health-care systems, the communication skills of health-care professionals, and the level of complexity of the health information. However, the literature indicates that health literacy is mainly framed and measured as an individual attribute in research. Focusing health literacy research solely on the individual, rather than also including the health-care context, limits our understanding of the type of actions that should be undertaken to facilitate a person's access to and understanding, evaluation and use of health information.

The purpose of this presentation is to revisit the basic constructs of health literacy and to consider whether its tenets should be broadened. Specific focus is placed on whether health literacy measurement should be expanded from assessing individuals' skills to consideration of the healthcare

context (e.g. the communication skills of healthcare providers, the accessibility of relevant health information and the complexity of healthcare systems in terms of navigation).

#40 An assessment of health literacy among urban clerics in southeast Nigeria.

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Background: An individual's ability to effectively obtain, process, and understand basic health information and to use this to make appropriate health decisions has been identified as having a very powerful influence on their state of health, quality of life lived as well as life expectancy. In many developing countries there is a preponderance of health information from various sources and plagued with poor regulation, there is the constant risk of misinformation, that people in the general population may accept in its entirety.

Today clerics are one of the most trusted occupations globally. This is especially true in developing countries where there preponderance of belief in and membership of religious organizations. The influence of this group, therefore, has the potential for both positive or negative outcomes on their followership and since they cannot give what they do not have, their knowledge or the absence of knowledge about health and disease can invariably be passed on to the people they lead. They are thus potential allies or barriers to the effort to improve health literacy among these populations.

The aim of this study was to assess for different aspects of health literacy among clerics in an urban area in southeast Nigeria and identify the factors that influence them.

Methods: A cross-sectional descriptive study of a sample of 307 clerics leading religious congregations in the capital city of Imo state, one of the largest cities in Southeast Nigeria. Respondents were selected by multistage sampling which involved stratification along lines of religion and denomination followed by simple random sampling within each stratum. A pretested self-administered questionnaire adapted from the Test

of Functional Literacy in Adults (TOFHLA) tool and the All Aspect Literacy Questionnaire was used to collect data. Individual rating for health literacy was examined in relation to a total score, with the scores assigned to levels of health literacy, categorized as adequate, marginal and inadequate. Chi-square analysis was used to measure the association between different variables and health literacy levels and logistic regression was used to identify the determinants of different literacy facets. The Statistical Package for Social Sciences (SPSS) software version 23 was used for analysis.

Findings: The mean age of the clerics was 34 years with the majority of them being between 25 - 34years in age (40.1%), male (87.6%) and educated to tertiary level (80.5%). The most common source of their health information comes from visits to the hospital (81.8%), television (76.8%) and social media (56.0%), while the least common were radio (45.6%) and friends/family (33.6%). Most seek health care at the hospitals (90.9%) followed by pharmacies (27.7%), while patent and proprietary medicines vendors (19.5%) were less patronized and self-medication was an even less considered option. The sources of disease identified by them were germs (96.7%), bad air (48.5%), operations of witches/wizards (26.7%) and curses from ancestors (26.7%).

Functional health literacy levels were inadequate in 66.4% of respondents, marginal in 30.9% and adequate in 2.6%. Communicative health literacy levels were inadequate in 53.1% of respondents, marginal in 35.5% and adequate in 11.4% of them while critical health literacy levels were inadequate in 65.5%, marginal in 28.0% and adequate in 6.5%. Practices with the greatest extent of deficiency were those of challenging advice given by health workers after personal research (16.3%) and confirming if the information received could be trusted (13.4%).

Age, gender, dependence on television and social media as sources of information, marital status, level of education, religious denomination and having attended formal health-related courses were associated with Functional Health Literacy. Age, marital status, religious denomination, dependence on television and social media as sources of information and prior health training were associated with Communicative Health Literacy. Also, Age, marital status, religious denomination

and previous health-related training were all associated with Critical Health Literacy (p< 0.05). Age, gender, marital status, and previous training were determinants of functional health literacy while dependence on the radio as a source of health information and previous health training were determinants of communicative health literacy. Predictors of critical health literacy were dependence on the radio for health information as well as previous health training.

Conclusion: Globally, recognized factors that contribute to health literacy include the health system, the education system, society and culture. Adequate health literacy is not common among clerics in this study area, the communicative and functional facets being highest and lowest respectively. The health literacy level of these mostly well-educated individuals predominantly marginal along all facets. The belief in supernatural/preternatural forces in disease causation is still prominent among these clerics and could play a major role in how they interpret and communicate health-related information and situations to their members. Health literacy is essential for improving poor health indices, reducing poverty and inequality, thus every hospital visit should be seen as an opportunity for health professionals to communicate health information to individuals in this occupational group. Amongst other very necessary health literacy interventions, and considering their influence on their members in the study area, efforts to establish regular targeted health-related training for clerics should prove effective. Also, future interventions aimed at improving literacy among clerics in developing countries should utilize television and social media to ensure maximal reach. Aspects of functional health literacy will also require the greatest attention, in this group.

#42 The association between health literacy and health care utilisation in persons with coronary heart disease in Malta.

<u>Dr. Jason Attard¹</u>, Dr. Daniel Cauchi¹, Prof. Neville Calleja¹, Dr. Charmaine Gauci¹

**Image: Mattard Cauchi Cauchi

Background: Most international research exploring the relationships between health literacy and health care utilisation were performed outside of Europe. However, health care systems in Europe are different and therefore the evidence of such research may not be applicable to European countries. Furthermore, research that is specific to coronary heart disease populations is limited, with no such studies performed in Malta. Given this situation, there is a gap in knowledge about health literacy and its relationship with health care utilization in an adult Maltese population with coronary heart disease.

Objective: This study aims to explore the relationship between health literacy and health care utilisation in adults with coronary heart disease in Malta.

Methods: A cross-sectional research design using a probability quota sample stratified by age and sex was used. Persons with coronary heart disease were recruited from either cardiology outpatients or cardiology wards. They completed a questionnaire including the 16-item European Health Literacy Survey and agreed to have their responses linked to the public hospital's health service utilisation records. The frequency of health center general practitioner (GP) visits, private GP visits, private specialist visits and dentist visits were self-reported.

Results: A total of 396 individuals were approached to recruit 384 participants, giving an overall response rate of 97.0%. The respondent population was analysed and found to be representative of the target sample population. The prevalence of limited health literacy in the Maltese coronary heart disease population was 60.1%, with 14.8% and 45.3% of individuals having inadequate and problematic health literacy respectively. Health literacy was found to have a positive significant relationship with highest educational attainment (p<0.001) and net monthly household income (p<0.001), but not with age, sex, marital status, district of residence, gainful employment or home ownership status. Health literacy was not found to be associated with duration of illness or family history of coronary heart disease, self-reportgenerated Charlson comorbidity index (SRG-CCI) or a history of depression or anxiety. Univariate analysis found a significant relationship between

health literacy and frequency of self-reported private GP visits (p=0.016), which remained in the multiple linear regression model after adjusting for SRG-CCI and having a history of depression or anxiety (p=0.020). Patients with inadequate health literacy are less likely to visit a private GP in the previous year when compared to patients with sufficient health literacy. In contrast, patients with problematic health literacy are more likely to visit a private GP when compared to patients with sufficient health literacy. The significant relationships between health literacy and the frequency of emergency department visits (p=0.010), number of overall hospital admissions (p=0.029) and having had a coronary angiogram (p=0.015) in the 12 months prior to the interview were lost in the multivariate analyses (p=0.146, p=0.389 and p=0.066, respectively). Health literacy was not found to be significantly associated with the frequency of health center GP visits, outpatient specialist visits (both overall and coronary heart disease-related), private specialist visits, hospital admissions (coronary heart diseaserelated), inpatient bed days (both overall and heart disease-related), coronary admissions, dentist visits, and having had a percutaneous coronary angiogram or coronary artery bypass graft surgery in the 12 months prior to the interview.

Discussion: This study found a high prevalence of limited health literacy in the Maltese coronary heart disease population when compared to findings in the literature. Health literacy follows a social gradient supporting the importance of addressing the social determinants of health to reduce health inequalities and improve health outcomes. Furthermore, health literacy is associated with private GP visits. There is an under- and over-utilisation of private GP visits for individuals with inadequate and problematic health literacy, respectively.

#45 Progress in implementing national strategies and policies for health literacy in Austria-the development of the Austrian Platform Health Literacy.

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Background: In the last two decades, health literacy has become a subject of interest and a topic on the agenda of the World Health Organization (WHO). By positioning health literacy as a prominent issue in the Shanghai Declaration on Health Promotion, the WHO established a strong global mandate for policy action. Since then, several countries have established national health literacy policies or have incorporated health literacy as a priority issue within their broader health strategies. Among these countries, Austria implemented the Austrian Platform Health Literacy to enhance health literacy in the population, which provides a model of good practice for others.

In 2011, the Federal Health Commission and the Austrian Council of Ministers compiled a list of health targets, or possible approaches toward further improving general health in Austria. Specifically, ten national health targets were defined with the main aim of increasing the number of years lived in a healthy condition, to be attained within the next 20 years.

Because health is affected by many factors outside the healthcare system, the health targets focus on those areas where a positive influence on maintaining and improving public health can be achieved. Therefore, determinants that have a decisive influence on health are given priority, i.e. education, employment, social security and environmental influences.

Taking into account the related health determinants and policy areas, all relevant political and social stakeholders in Austria have been actively involved in the process of defining health targets. These ten national health targets currently guide healthcare reform in Austria and help to ensure coordinated planning, implementation and cross-sectoral action.

Objective: Health Target 3: "To enhance health literacy in the population" is number three of the ten Austrian health targets.

"Health literacy is a central pillar for the promotion of health and equity in health among the population. It helps people make appropriate decisions for themselves in everyday life that promote their health. This requires enhancing personal competencies and accountability in all population groups, and particularly in disadvantaged groups, facilitating access to objective, easily comprehensible information of assured quality and increasing awareness of health promotion issues. Patients and users of the health care system should play an important role as stakeholders, which also enhances patients' self-efficacy. It should be easy for people to find their way through the health care, educational and welfare systems and to play an active role as committed partners in the system." (Link: https://gesundheitsziele-

oesterreich.at/website2017/wp-content/uploads/2018/08/gz_kurzfassung_en_2017 0626.pdf)

Methods: Establishing the platform: To guarantee long-term improvement in health literacy within the Austrian population, an appropriate coordination structure is needed. According to the health target process, all relevant political and social stakeholders have been integrated into the development process. In 2015, the intersectoral Austrian Platform Health Literacy was created and entrusted with three priorities and five main aims.

Priorities: 1. Improve the health literacy-friendliness of healthcare services. 2. Improve individual health literacy (especially in vulnerable groups). 3. Improve the health literacy-friendliness of the production and service sector.

Main aims: 1. Support sustained engagement with health literacy in Austria. 2. Further networking, collaboration, exchange of experiences and collective learning. 3. Coordinate measures between different political and social sectors. 4. Aid development of a common understanding of health, spread knowledge and facilitate innovation 5. Establish monitoring and reporting, and ensure transparency and quality.

The structure of the platform: The importance of the "Health in All Policies" (HiAP) approach was highlighted not only when developing the health targets, but also in the implementation of the intersectoral platform itself.

A "core team" was established as a strategic decision-making body and consists of members of the federal government, federal states, social security institutions and HiAP partners. The

Austrian Federal Ministry of Labor, Social Affairs, Health and Consumer Protection acts as chair of the core team.

Currently, the platform consist of 48 members, all of which are organizations with measures in place in pursuit of the three platform priorities. These include strong partners of the healthcare, education and welfare systems, as well as societies and NGOs.

The coordinating centre supports the core team and acts as a knowledge centre and operative body for implementation. The centre is located in the Austrian Health Promotion Fund (FGÖ) and its main tasks include member management, community building and networking, public relations and conference organization.

Results: Milestones accomplished until now

- Development and implementation of a national, working definition for health literacy
- Focus on both individual and organizational aspects of health literacy
- Implementation of a national strategy for improving the quality of communication in healthcare
- Promotion of the implementation of standard criteria (15 indicators) for quality health information
- Publication of Austrian web portal on trustworthy health information
- Development of criteria for membership and welcome of first members to the platform
- Development of three priorities (healthcare communication, health information, health-literate organizations)
- National annual conferences of the Austrian Platform Health Literacy
- Publication of newsletters, articles etc.

Discussion and outlook: In 2019, the Austrian Platform Health Literacy will celebrate its 5th anniversary. In the five years since implementation and development, the platform has found its place in the scientific and political world, both nationally and internationally, and is regarded as a model of good practice. Today, the platform consists of 48 members who implement and manage projects improving health literacy in the Austrian population. To aid implementation in other

countries the platform will relaunch its website in the next month, including basic information in English, and strengthen its knowledge centre to ensure that the valuable information collected can be shared with others.

#46 How to Build Partnerships and Programs to Serve Immigrants and Migrants.

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How to Build Partnerships and Programs for Refugees and Other New Language Learners

This is a hands-on workshop that will engage the participant in the steps needed to build partnerships and the elements of a health literacy program for refugees and other migrants who need to learn a language or new cultural realities enabling them to engage in health activities in a new community. It is based on the lessons learned while putting together a health literacy program in the United States for refugees and other migrants.

Workshop participants will leave the workshop with a blueprint about the following elements of building a program: They will have

- 1. Identified the needs of their learner population.
- 2. Developed a list of possible partners.
- 3. Developed preliminary objectives and a way to assess the success of the program.
- 4. Selected a health curriculum that will fill the needs of the learners.

Section 1: Identifying the needs of learner populations (10 minutes presentation and questions, 10 minutes participant brainstorming)

Not all migrant learners are the same. Those who need to learn a language will have very different needs than those who need to learn cultural conventions around health. Some migrant groups will have significant social risks due to the nature of their migration, others will have different barriers. This first segment will focus on the needs assessment.

Section 2: Developing a list of possible partners (10 minutes presentation and questions, 10 minutes participant brainstorming)

Partnerships are of the utmost importance in building health literacy programs. This segment

of the workshop will help participants identify what to look for in partners and where to look for them. Section 3: Developing preliminary objectives and a way to assess the success of the program.(10 minutes presentation and questions, 10 minutes participant brainstorming)

There is not enough time in a workshop like this to build in depth objectives and the type of assessment that is needed to measure success. However, the speaker will spend some time talking about the type of objectives that can be the most effective and the type of assessment that will bring needed information on the program's success. Participants will narrow down possibilities in the active phase of this section.

Section 4: Selected a health curriculum that will fill the needs of the learners (10 minutes presentation and questions, 12 minutes participant brainstorming)

Curriculum selection is based on the needs of the learners, but also on the time needed, teacher preferences, and elements of optimal learning. Some examples of health literacy curriculum will be presented with the pros and cons for particular groups. Participants will narrow down what types of curriculum they would look for in their intended program.

Wrap Up: (2 minutes).

#47 Associations between participation in a health-related support group and aspects of health literacy - Results from the SHILD study.

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Background: In order to deal with chronic diseases, some patients turn to support groups for mutual help. In those groups they can exchange information and receive social support. Over the past decades however, the structures of self-help have expanded far beyond what is happening within the individual groups. Self-help organizations work politically, provide health

information to the population and are involved in the development of patient guidelines.

The multicenter study "Health-related Self-Help in Germany" (SHILD), funded by the Federal Ministry of Health, investigates structures, needs and effects of health-related self-help in Germany since 2013. One study module analyses possible effects of support groups on the participants in four areas of indication: diabetes type 2, prostate cancer, multiple sclerosis, tinnitus. The aim is to gain insight into self-management skills and health literacy. For this purpose, support group members were compared to similarly affected patients that do not visit support groups in a cross-sectional design.

Methods: Chronically ill people from the aforementioned indication areas were surveyed and subsequently divided into two groups: Support group members (members) and similarly affected persons without a group membership (non-members).

The recruitment of members took place via selfhelp organizations and contact points, nonmembers were recruited with the support of medical practices, health insurances and clinics. Answering the questionnaire was possible in paper or via online form.

Aspects of health literacy were queried via various instruments. To survey the access and use of good health information, we asked for guideline awareness. In addition, we queried knowledge about patient rights and selected disease-specific aspects. To obtain skills concerning the application and transfer of health-relevant information, we introduced the Health Education Questionnaire (HeiQ) by using the dimensions "Skill and Acquisition" Technique (self-evaluated knowledge-based skills and strategies for coping with health problems), "Self-Monitoring and Insight" (self-monitoring of own health-status, competence of setting reasonable goals and recognizing own limits), and "Health Service Navigation" (self-evaluated competence to interact with health organizations and physicians to meet own needs).

Both groups were compared afterwards, controlled associations between a group membership and the health literacy outcome variables were calculated using binary logistic regression models.

Further predictors introduced are sociodemographic and disease-related data.

The procedures have been approved by the Ethics Committee of the Hannover Medical School.

Results: In total, 1,238 members (female: 41%; average age: 63 years; high education level: 46%, low: 27%) and 1,321 non-members took place (female: 53%; average age: 55 years; high education level: 48%, low: 20%). Compared to non-members, a larger number of members is more severely affected by their disease (57% vs. 36%). In addition, they are more often socially engaged (51% vs. 21%). In binary logistic regression models, in particular better guideline awareness (OR: 1.9; CI: 1.6-2.3; p<0.05) but (to a lesser extent) also better knowledge about patient rights (OR:1.2; CI: 1.0-1.4; p=0.05) and disease-specific aspects (OR: 1.3; CI: 1.1-1.5; p<0.05) are associated with a support group membership. Respondents of both groups reported good skills in all three HeiO dimensions (scale 1-4); average total: 3.5). Binary logistic regression models show that higher skills in all dimensions are associated with older age and higher level of education. The models also represent a minor statistically significant link between membership in a support group and higher values in the HeiQ dimension "Skill and Technique Acquisition" (OR: 1.2; CI: 1.0-1.5; p<0.05). "Self-Monitoring and Insight" as well as "Health Service Navigation" however, are not associated with a support group membership.

Discussion: The different results concerning the HeiQ on the one hand and the knowledge-based variables on the other hand are conspicuous. They suggest that the achievement of health literacy would have come to a standstill just before the knowledge gained leads to better self-monitoring or health care navigation. On the other hand, those potentially conflicting results could also yield from the different forms of measurement - knowledge was tested, skills were self-assessed. This may indicate that patients who know more about the disease and its treatment can experience that those topics are more complex and complicated than previously mentioned. Patients, on the other hand, who are not familiar with this complexity may think that they know and do everything necessary for their care - but only because they do not know what there is to know. This circumstance in turn could suggest that testing for? health literacy may be more sensitive than using self-assessments.

When receiving the results, selection effects resulting from the chosen recruitment strategy must be considered. Presumably, they affect the high HeiQ skills in both the groups of the members and non-members.

Practical implications: The results lead to the hypothesis that membership in a support group can positively influence access to good health information, disease-related knowledge and health system-related understanding. It can also be assumed that information management, which was expanded by many self-help organizations in recent years, will have a positive effect on the knowledge and health literacy of their members. Support groups are also an important institution in the current discussion about the low health literacy of the population. Their role in the development of current strategies to improve the health literacy of chronically ill people should be considered even more than before.

#48 The impact of educational tools tailored to the needs of people with visual impairment on health literacy improvement.

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Background: Health literacy plays a crucial role in making appropriate health decisions. However, health literacy is associated with many inequities. In particular, people with visual impairment experience many obstacles in obtaining health information, and they are more likely to have low literacy comparing to the rest of population. It was also confirmed that young people with visual impairment are at the high risk of obesity which has been attributed to poor food choices or not enough physical activity. Hence, developing effective interventions to rearrange their nutrition status are needed.

Objectives:

Evaluation the effect of the intervention aimed on improving nutrition health literacy using innovative tools "The Healthy Lifestyle Pyramid" and The Puzzle Games during health education activities designed to the needs of people with visual impairment. Tools were tailored to the needs of people with visual impairment.

Methods: One hundred eighty six pupils aged 10-18 years (M=13.8; SD=2.61) from randomly selected 6 special schools for blind and poor vision pupils participated in the study. An intervention healthy lifestyle guidelines was referring performed during 2 hours of classes. The Healthy Lifestyle Pyramid was used during educational activities in the whole group of participants. Additionally, The Puzzle Game concerning nutrition guidelines was performed at the end of the classes. Finally, participants were divided into the Control Group (N=85) where only the Healthy Lifestyle Pyramid was used and the Study Group (N=88) who participated in the classes with additional Puzzle Game at the end of the classes. Thirteen participants with missing data were from analysis. Α single-choice questionnaire regarding health literacy comprising 15 questions was used to verify the level of required knowledge regarding nutrition health literacy: a pretest before intervention, a post – test performed just after intervention.

Results: There was a significant main effect of using Healthy Lifestyle Pyramid during classes, F(1,171)=14.959, p<0.001. The actual difference in mean scores between pretest and post-test was medium. The effect size, calculated using partial eta squared, was 0.08. The main effect of using Puzzle Game in an experimental intervention was also significant: F(1,171)=6.736, p=0.014. The actual difference in mean scores between Study Group and Control Group was medium. The effect size, calculated using partial eta squared, was 0.038.

Discussion: The interventions with using the tools tailored to the needs of people with visual impairment had positive significant impact on nutrition knowledge. Additionally, using the Puzzle Game also had significant impact.

Health education activities directed on increasing the health literacy among people with visual impairment are more effective when a wide range of approaches is used to present information and activation of all the sensory channels of pupils is possible. Further development of the innovative solutions for people with visual impairment is necessary to provide the equal access to health literacy among this population.

#49 The Action Network on Measuring Population and Organizational Health Literacy (M-POHL) of WHO Europe's Health Information Initiative (EHII): an introduction.

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The first comparative European Health Literacy Study HLS-EU (2012) informed an ongoing discourse on health literacy and inspired numerous responses from (health) policy across European countries. One of the results of the HLS-EU survey is the demand for regular internationally comparative measurements of population health literacy so as to measure progress and provide a basis for evidence-informed policy. Another result of the ongoing developments is an increasing focus organizational health literacy (responsiveness) of healthcare organizations which also needs measurement as a basis for improvements. WHO Europe's publication "Health Literacy – the Solid Facts" expresses the need for both – population and organizational health literacy.

An initiative from European researchers, a joint commitment from the ministers of health of the German speaking European countries and a number of other developments led to the establishment of the "Action Network on Measuring Population and Organizational Health Literacy" (M-POHL) which

was started in February 2018 under the umbrella of WHO-Europe's Health Information Initiative (EHII). M-POHL's main aims are to add value to countries' efforts in measuring and improving health literacy. This will be pursued by conducting cross-national comparative surveys on population health literacy, by measuring organizational health literacy / healthcare systems and organizations' health literacy (responsiveness), and by suggesting recommendations for evidence-informed policy and practice. M-POHL is unique in establishing regular national comparative measurements of both sides of health literacy and integrating the perspectives of policy and research in its structures and processes from the beginning of the action network.

The symposium will introduce M-POHL's aims, structure and activities with specific focus on M-POHL's first project HLS19, the next European comparative health literacy study. Statements will be given from the perspective of WHO-Europe and of the international coordination of M-POHL, as well as from the perspective of some M-POHL member states.

#50 Patient-centred communication and health literacy demands in type 2 diabetes: facilitating and constraining factors in clinical encounters.

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Introduction: Approximately 422 million adults worldwide were estimated to have diabetes in 2014, and this number is expected to rise to 700 million people by 2025. Type 2 diabetes, which represents the overwhelming majority of diabetes cases, is a chronic condition with high literacy demands from patients. They are expected to self-manage their health, by maintaining a healthy diet, engaging in physical activity, solving problems, coping with psychosocial issues and concerns, managing

regimens. sometimes complex medication navigating the health system, performing regular laboratory health tests, and keeping appointments with multiple health professionals, while learning self-advocacy. Clear communication strategies may help lessen health literacy demands for patients. Patient-centred communication has been shown to improve self-management and quality of life and is recommended by leading professional and patient advocacy organizations to provide support to actively manage the disease and to increase patients' safety. However, patient-centred communication does not seem to occur in most clinical encounters, as patients continue to ask for empathic more humane, and supportive communication. This is especially problematic in people with lower health literacy, with whom health professionals report feeling unprepared to communicate with. Reconciliation between perspectives from patients with diabetes and the providers caring for them has been pinpointed as essential to fill the gap between recommendations and clinical practice.

We aimed to explore the perceptions on the constraining and facilitating factors to patient-centred communication in clinical encounters of patients with type 2 diabetes and the providers involved in their care, highlighting matches and mismatches to potentiate areas for improvement from both sides.

Methods: We conducted separate focus group discussions of patients with diabetes and of providers caring for people with type 2 diabetes, in Northern Portugal. Participants were purposively sampled to include the standard range of areas of expertise involved in the care of type 2 diabetes patients in Portugal (family medicine. endocrinology, nursing, pharmacy, nutrition, ophthalmology, nephrology, vascular surgery. psychology), and the typical range of diabetes micro- and macro-vascular complications (without any, diabetic retinopathy, diabetic nephropathy, diabetic foot, ischaemic heart disease and cerebrovascular disease). Within groups heterogeneity was pursued regarding age and professional experience/disease duration.

A total of 33 patients participated in 5 focus groups, organised according to disease complications, and a total of 12 providers participated in two focus groups. Data saturation was reached with these 7 focus groups.

All followed the same semi-structured interview guide aimed at capturing the experiences in communication between patients living with type 2 diabetes and their providers. Questions were based on literature linking patient-centred communication and health literacy communication strategies. Interviews were audio recorded and professionally transcribed verbatim.

Data were analysed independently by two researchers according to the grounded theory using open, axial and selective coding. Quotations with similar meanings were synthesised into categories (open coding), which were then put together into themes (axial coding), and then into core themes (selective coding). During selective coding, inductive themes were laden with interpersonal patient-centred communication theory.

Results: Three core themes emerged from data analysis of the discourses of both patients and providers:

- 1) 'patient-provider relationship', comprising the leading values, roles and responsibilities of patients and providers when dealing with psychosocial distress and emotions, and partnership in decision-making;
- 2) 'disease and treatment-related behaviour', including issues emerging from communication to enable self-management, behaviour change or maintenance; and
- 3) 'gathering and providing information' referring to information exchange, as well as to the methods used to respond to information needs.

Patients focused on the patient-provider emphasized relationship, while providers constraints when gathering and providing information and facilitating factors regarding disease and treatment-related behaviour. Patient and providers both agreed on some constraints (power imbalance, patients' avoidance reprehension, patients' neglecting disease, use of and insufficient competencies consistency between providers) and facilitators (seeing patients-as-persons, providing tailored information in plain language, and recognizing the 'wake up call'). Patients perceived an aggressive attitude as a barrier but providers perceived it as a facilitator. Patients included issues related with trust, respect, use of analogies and psychosocial support as important factors to them. Only providers mentioned diabetes educators and the

influence of macro-level interventions and patients' socioeconomic position.

Discussion and conclusions: Improvements in patient-centred communication depend fostering the patient-provider relationship, patients' participation and involvement, and training providers' communication and relational skills, in a context where the perceptions of the patients and the providers may apply to other chronic diseases. The finding that patients tended to be more focused on interactional factors and providers on systemlevel factors whereas each of these factors almost did not come up for the providers and patients, respectively, draws attention to the need to promote participatory care planning and delivery through active dialogue between representatives patients decision-makers. providers, and caregivers, where more equitable and trustworthy relationships can emerge.

Providers should make more of an effort to foster a therapeutic relationship with their patients, by actively listening, building rapport and connection, showing empathy, and respecting patients' values and decisions. Patients can claim a more active role in communication and health institutions should help patients better navigate their services, as well as promote and steer them toward patient discussion groups to support peer distributed health literacy to enable disease and treatment-related behaviour.

#51 An assessment of health literacy among women of reproductive age in a rural community in South East Nigeria.

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Background: Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

Health literacy involves knowledge of health topics in addition to basic literacy skills. Women and children under 5 years of age have been identified, as most vulnerable to poor health outcomes, especially in developing nations. Mothers are primary care givers to their children and the health status of children has been linked to mothers'

literacy levels. Women with limited literacy lack knowledge or are often misinformed about the human body and the nature and causes of disease and limited health literacy has been associated with poor health outcomes. In the push towards universal health coverage, health literacy efforts can uniquely reduce inequities in health and beyond. The aim of this survey was to assess for different aspects of health literacy among women of reproductive age in the study area and to identify associated factors.

Methods: This was a cross-sectional descriptive study in a sample of 347 women attending the antenatal clinic of a Community General Hospital. Respondents who met the inclusion criteria were selected by systematic sampling. Data was pretested collected using a interviewer administered questionnaire adapted from the Test of Functional Health Literacy in Adults (TOFHLA) tool and the All Aspect Literacy Questionnaire. Individual rating for health literacy was examined in relation to a total score, with scores assigned to levels of health literacy, categorized as adequate, marginal and inadequate. Chi square analysis was used to measure the association between different variables and health literacy levels while logistic regression was used to identify the possible determinants of different literacy facets. The Statistical Package for Social Sciences (SPSS) software version 23 was used for analysis.

Findings: The mean age was 26.7 years with majority of the women between 21-30 years of age (52.2%), unemployed (42.7%), single (53.6%) and with tertiary level education (47.8%). The most common sources of health information were hospitals (77.2%), clinics (57.6%) and Radio (51.0%) while the least common were friends/family (42.1%) and books (2.3%).

Functional health literacy was inadequate in 77.5% of the respondents, marginal in 20.7% and adequate in 1.7% of them. Communicative health literacy was inadequate in 55.6%, marginal in 42.1% and adequate in 2.0% of the respondents. Critical literacy was inadequate in 54.8%, marginal in 26.2% and adequate in 18.7% respondents.

Age category and level of education were associated with Functional Health Literacy. Occupation, Education level and health seeking behavior were associated with Communicative Health Literacy while age category, occupation,

educational level, marital status, religion, registration at antenatal clinic and health seeking behavior were all associated with Critical Health Literacy (p< 0.05). Level of education was identified as a determinant of critical health literacy.

Conclusion: Adequate health literacy is not common among rural women of reproductive age, in the study area, especially with respect to communicative proficiency. The health literacy level of these otherwise well educated, unemployed young women was predominantly inadequate along all aspects. Globally, recognized factors that contribute to health literacy include: the health system, the education system, society and culture. Health literacy is essential to improving poor health indices, reducing poverty and inequality. Amongst other very necessary health literacy interventions, promoting female education in developing countries and health professionals recognizing every hospital visit by a woman of reproductive age as an opportunity for health education is emphasized.

#52 Improving the utility of the European Health Literacy Survey Questionnaire: a computerized adaptive test for patients with stroke.

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Background and Purpose: Patients' health literacy is fundamental for the effectiveness of stroke management. The European Health Literacy Survey Questionnaire (HLS-EU-Q) is a theory-based measure, which comprehensively captures 12 domains of health literacy. However, the large number of items (47 items) is time-consuming and

limits the utility of the HLS-EU-Q in clinical settings. We aimed to develop a computerized adaptive test of the HLS-EU-Q (CAT-EHL) to efficiently assess health literacy in patients with stroke.

Methods: We first retrieved the data of 311 patients' responses on the HLS-EU-Q and the item parameters from a previous Rasch validation study. Thereafter, we conducted simulation analyses to determine the optimal stopping rule and explore the efficiency and reliability of the CAT-EHL. Last, we examined the concurrent validity of the CAT-EHL with the HLS-EU-Q by Pearson's r.

Results: The CAT-EHL showed good reliabilities in the 12 domains (0.72 \sim 0.84) with a mean test length of 17 items, which was 36.2% of the 47-item HLS-EU-Q. The concurrent validity of the CAT-EHL was supported by the high correlations (r = 0.76 \sim 0.97) between the CAT-EHL and HLS-EU-Q.

Conclusions: Our findings support that the CAT-EHL has sufficient efficiency, reliability, and concurrent validity in patients with stroke. The CAT-EHL assesses 12 domains of health literacy for patients with stroke in a timely and precise fashion. Our study has demonstrated the utility of the CAT-EHL in reducing assessment burdens for patients in busy clinical practice.

#53 eHealth Information in the Everyday Life of Female Adolescents with a Turkish Migration Background.

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Background: In almost 100 percent of households in Germany. New Media can be found that enables access to the Internet. Adolescents, who are often tied to the equipment of the family household, also state a high satisfaction concerning their available media devices and can hardly mention devices they still need. The priority given to a device is strongly related to its possibility to access internet. They use the Internet and applications to communicate on various online platforms with their social contacts, ascribe the New Media navigation and entertainment functions as well as use the Internet to find health-related information. In order to be able to demonstrate an adequate handling with health information, various abilities and skills are described in the literature as prerequisites. Thus, in the literature, statements can be found which demonstrate that the access to New Media does not automatically open access to electronic health information.

Objectives: Persons with a Turkish migration background are the largest group of the population with an immigrant background in Germany. The studies repeatedly describe adults and adolescents with Turkish migration background as a vulnerable group. Thus, they have a lower economic status, a lower educational attainment and a poorer health compared with the indigenous population. Recent studies show that health information on applications for the adolescents increases the chances to reach the target group. But there is a lack on research findings on dealing with New Media by adolescents with a Turkish migration background in Germany. Therefore, there are barely any insight about the importance of New Media and applications within the everyday life of the adolescents with Turkish migration background and whether the internet or the applications are used to obtain health-related information. In the qualitative-ethnographic study on youth health "eHealth literacy and minority health" (ELMi) we aimed to answer following questions: 1) Do female adolescents with a Turkish migration background use New Media? 2) Does the target group use the Internet and, if so, for what? 3) Do female adolescents with a Turkish migration background use New Media to get health-related information?

Methods: To answer this questions adequately, various qualitative data was collected. For this purpose, the methods of participant observation, expert interviews as well as focus group interviews were used. Within the presentation, results from four individual interviews and one focus group with female adolescents with a Turkish migration background will be presented, that we analysed following the qualitative content analysis by Mayring.

Results: The female adolescents with Turkish migration background use New Media to be connected to their peer group and family members. Similar like the indigenous adolescents, the devices with internet access are more important for them than devices which don't allow it. The participated

adolescents ascribe the New Media an entertainment function as well as the function of an information platform. However, they use the Internet also to receive health information. On this occasion, information which is easy to understand is preferred. But not only the internet but also the social environment is related to the process of seeking health information.

Discussion: The unequal distribution of economic resources does not seem to lead to digital inequity. Thus, adolescents with less economic resources and lower educational status than the indigenous population in Germany can be reached with electronic health information. Full access to health information for disadvantaged adolescents can be ensured if the information is written in an easy-to-understand language. But it should not be forgotten that the social environment of adolescents have a significant impact on the health of the target group.

#54 Strategy for Standardizing an Approach Toward Health Literacy

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Duke Health has taken an organizational approach to promoting health literacy to assure consistent educational content is provided to our patients thus enhancing the quality of care and the patient experience. The Patient and Family Education Governance Council is the primary effector arm for this organizational approach. Duke Health's flagship entity is Duke University Hospital, a fullservice tertiary and quaternary care facility. Two community hospitals, 30+ primary care clinics, 70 specialty care clinics, health and wellness centers, home care and hospice complete the health system. Across these diverse settings in FY2018, Duke Health provided care to 763,815 unique patients, discharged 68,699 inpatients, and saw 3,791,950 outpatients. Each of these encounters generated unique educational needs.

Historically, patient education was locally developed and delivered and thus generated inconsistent content with varying levels of effectiveness. In response to having such a broad

scope of services and individuals providing a variety of resources, Duke Health created an infrastructure through the Patient and Family Education Governance Council to promote the development and use of consistent resources that adhere to best practices of health literacy. The organization defines health literacy as the degree to which individuals have the capacity to obtain, process, and understand basic information and services needed to make appropriate health decisions. (1)

The Patient and Family Education Governance Council process results in educational materials that provide:

- Patients with consistent information on a particular topic no matter the location of care nor care provider's discipline or specialty within Duke Health
- Adhere to best practice health literacy and plain language principles
- Written or video materials whose development has been thoughtfully planned and coordinated among patients, disciplines and entities
- An opportunity for patients to question, discuss, participate in decision making about their care and teach back what they have learned
- Digital resources for inclusion in the electronic medical record or the patient portal

Members of the Patient and Family Education Governance Council represent most clinical disciplines, in both ambulatory and acute care settings, and medical librarians. The council values having the input of the patient's voice through the active participation of the Duke Health Patient Advisory Council. The Patient Advisory Council members are patients of Duke Health and volunteers who serve in a variety of roles throughout Duke Health representing patients. In addition to the health system Patient Advisory Council, there are patient population specific advisory groups who assist clinical team members in developing and reviewing specialized patient education materials prior to submission to the Duke Health Patient and Family Education Governance Council.

It is known that patients with low health literacy are more likely to make costly emergency room visits, have more hospital stays, are less likely to adhere to treatment plans, and experience higher mortality rates. (2). The Duke Health Patient and Family Education Governance Council collaborates with process improvement teams to determine effective patient education strategies and tools used to engage patients in their care and to enhance patient outcomes. The Duke Health Patient and Family Education Governance Council has worked with teams from multiple disciplines and specialties to assist in developing and evaluating approximately 500 Duke-authored materials such as Enhanced Recovery after Surgery, Amputations, a variety of organ transplant booklets, and care of complex medical conditions such as pulmonary fibrosis and diabetes.

Assessing the utilization of patient education resources is another role of the council. The Duke Health Patient and Family Education Governance Council recently determined a need to transition to a new third party patient and family education content vendor. The Patient and Family Education Governance Council assembled a workgroup to explore potential partners to meet the needs of our patients. Numerous stakeholders were invited to participate in the process including a number of Patient Advisory Council members. Following the selection process, the Governance Council provided guidance during the transition and implementation of these enhanced resources for the organization.

Having this governance structure has enabled the organization to establish common expectations for educational materials including, but not limited to, consistency across the continuum of care, standards for incorporating health literacy principles, and a forum for promoting patient engagement.

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department utilization and recidivism? Acad Emerg Med, 21(10), 1109-1115

#55 The Simplicity Complex: Where Does Simple Fit In a Complex World?

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Emerging infectious diseases like Ebola and Zika, drinking water contamination, type 2 diabetes, the obesity epidemic, bio-terrorism - who would argue against the need for simple, clear communication – direct, plain information that the public can understand and use to stay, healthy and safe? For more than 20 years, health literacy researchers and practitioners have argued against complexity and for simple information to achieve better decision-making and better health outcomes.

But what if this ubiquitous call to simplify public health information, particularly the language of information, is leaving the public "overfed but undernourished"? In the US, at both the federal and local levels of government, there is a mandate to make information "more accessible" to the general public. From health and social welfare enrollment forms to prescription and food labels, to emergency evacuation plans, "keep it simple", "use everyday language", "write so a 7th grader can read it" is the order of the day. Examples abound, like Nike's "Just Do It" ads, or New York City Transit's much plagiarized anti-terrorism slogan, "If You See Something, Say Something."

Coupled with this simplification movement is the exploding use of technologically enhanced media. On average, people access 10+ hours of media (broadcast TV, surfing the web, using phone apps) per day. In little more than a generation, carefully curated news and information is gone and we find ourselves awash in information sound bites dressed up as entertainment.. Simple wins the day.

Or, does it? Has the push to simplify information over-promised and not lived up to its billing? Is it possible that by privileging the 'simple' – side-stepping more complex language and distilling complex concepts into consumables--we're creating a society short on understanding, health

and science literacy, and long on widening social disparities and access to the information commons?

What if the complexity of the important issues today — personal and collective health, sustainability of our environment, discussion of climate change, require more than simple discourse? What if the simplifying language approach has yielded a communication by subtraction?

We contextualize this talk in a changing landscape of thought about health literacy. The advances beyond functional or fundamental literacy now urge us to use the broader lenses of society, technology and equality to better understand the possibilities for communication between experts and the public.

We will present a number of cases taken from studies and program analyses that provide evidence that, wittingly or unwittingly, we are perpetuating limited access to the complex and nuanced information necessary for people to make informed decisions about their lives and their society. Through examples we will demonstrate how some of our most common approaches to public health communication are in fact manufacturing an unequal access to information, knowledge and action. Case examples will include: public health messaging about obesity and diabetes, antibiotic resistance, household toxin risks, global warming, as well as H1N1 and other emerging infectious diseases as well as results from a pilot readability preference study the authors recently conducted.

Through these examples we make the argument that unilateral surface level simplification of health and safety information is inadequate to advance the public's health literacy. We will conclude by proposing ways to recalibrate the role of simplicity in this ever more complex world so that many more can share in society's information commons.

#56 Is health literacy relevant to Occupational Therapy practice? An exploration of practitioner opinions and a review of the literature.

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Background: Health literacy has been discussed as an important concept for occupational therapy research and practice in recent years [1,2]. Most of the discussion has taken place in Anglo-American academia, only a few articles or talks being published by European authors.

Although European occupational therapy has been strongly shaped by theories developed in the USA and Canada, and a certain degree of transferability may be assumed, there is lack of research of health literacy in the European context.

As occupational therapy is deeply rooted in client-centred practice it shares a value-base with health literacy particularly with regard to shared decision making and empowerment. Within occupational therapy ascertaining "what matters to you?" is considered the first step of establishing a therapeutic relationship. By taking this approach the person's health literacy is taken into account. As occupational therapy takes an occupation- and context-driven approach, the application of health information with the client through actual occupations can be identified as a unique strength of occupational therapy interventions regarding health literacy.

Self-management has been defined as the actions taken by individuals to lead a healthy lifestyle, to meet their needs and to care for their long term conditions to prevent further future illness [3]. Given this definition there is a clear role for addressing health literacy within interventions that aim to increase self-management skills if it is indicated. Self-management does not fall within any one health professions remit. While the majority of such programmes will have common elements there will usually be a focus that is core to the deliverer's primary training and therefore a particular slant to its content and delivery.

Within the occupational therapy textbooks selfmanagement is usually found within chapters on self-care. It is a complex task that involves many occupational performance elements. When occupational performance issues arise there is often impairment in completion of everyday tasks that adversely affects health and quality of life. According to the American Occupational Therapy Association health management and maintenance is defined as "developing, managing and maintaining routines for health and wellness promotion, such as physical fitness, nutrition, decreased health risk behaviours, and medication routines". A recently published systematic review reported that there is strong evidence that the provision of health management and maintenance is an effective means at improving occupational performance and when delivered in a group format also improves quality of life [3].

Objective: The presentation that will be delivered has two key aims -(1) to increase understanding of how health literacy is viewed within the occupational therapy profession and (2) to provide an overview of the literature that interlinks self-management, health literacy, and occupational therapy.

Methods: Existing qualitative data (verbatim transcript of focus group interviews) [4] was further analysed regarding the question how health literacy is currently integrated into occupational therapy practice. Links to self-management and strategies working with clients with chronic conditions were scrutinized in depth. To compliment this the authors reviewed current literature that interlinks self-management, health literacy, and occupational therapy to complement this. Reportage is used to present the findings.

Results: The qualitative research determined that although Occupational Therapists don't use the terminology of health literacy many practice in line with one or multiple aspects of it. When introduced to the integrated model of health literacy, client-centred practice was strongest associated by participants to health literacy. Multiple examples from everyday practice were identified where clients' health literacy was addressed. A strong emphasis was placed on applying health information together with the client and thereby improving his or her health literacy.

A 2018 systematic review on the effectiveness of health promotion, management, and maintenance interventions within the scope of occupational therapy provided the majority of the findings on self-management, health literacy and occupational therapy [3]. It was evident from the summaries of

the reviewed studies that a health literacy component was included in the majority of the programmes. The delivery of the health literacy aspect in a number of these programmes utilised an occupational therapy approach, in that an element of "doing" was part of the programme.

Discussion: Results from both, qualitative data as well as literature review, suggest that health literacy is an important issue for Occupational Therapists which needs to be addressed proactively. Practitioners and researchers need to be more aware of labelling their work correctly with regard to health literacy including when delivering and evaluating multi-dimensional selfmanagement programmes. European umbrella organizations such as Occupational Therapy Europe could take a leadership role in actively disseminating health literacy to the European occupational therapy community. incorporation of health literacy into occupational therapy curricula would assist in ensuring future Occupational Therapists have a clear understanding of best practice approaches when improving health literacy is one of the goals of intervention.

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#57 Co-creation of an online portal for dialysis patients with low eHealth literacy: effect on adoption.

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Introduction: The use of information and communication technology in health care, also called eHealth, is an important strategy to create sustainable health care organizations. EHealth can support patients' self-management, for example with patient portals or smart technology to monitor health. Improved self-management can abate the growing care demand, caused by an ageing population.

Patients with low eHealth literacy (LeHL) miss competences to seek, find, understand and appraise health information from electronic resources. They are less equipped to adopt eHealth. To overcome disadvantages, it is important to develop interventions that improve access to and use of eHealth for this group of patients. Co-creation with patients is important to tailor interventions to their needs.

This study focuses on dialysis patients with LeHL. Self-management is a major, but challenging component of their treatment. EHealth can support self-management, but low Internet use in patients with kidney disease may limit effectiveness. Less than 1% of existing self-management interventions is co-created, which also seems to reduce effectiveness.

This research aims to 1) explore the eHealth experiences, needs and barriers of dialysis patients with LeHL, 2) discuss eHealth support strategies for this group with health care professionals and 3) assess the impact of co-designed interventions on eHealth adoption and usability.

Methods: To explore eHealth experiences, needs and barriers (Aim 1), we performed two focus group discussions (FGD) (N=3) and in-depth interviews (N=4) with patients with LeHL from two dialysis centers in the Northeastern part of the Netherlands. We assessed eHealth literacy with the

eHeals questionnaire. We transcribed and analyzed the data, using the Technology Acceptance Model. The major themes were the starting point for the development of an eHealth intervention.

To discuss eHealth support strategies (Aim 2), we consulted the multidisciplinary team during interviews (N=5) and a workgroup meeting (N=6). We discussed the LeHL patients' experiences, needs and barriers and brainstormed about support strategies. The professionals' input led to the design and content of the first prototype of the eHealth intervention.

To analyze the impact of co-designed interventions (Aim 3) we tested three prototypes, following the principles of design thinking. We tested in four dialysis centers in the same region with 6-8 weeks in-between (N=40). Each prototype was tested by a control group with high (N=7-12) and target group with low (N=6-8) eHealth literacy. Patients were classified as LeHL by asking them about computer use and with a shortened form of the eHeals. Some participants tested all prototypes to reflect on improvements. Half of the approached re-testers with LeHL (N=4) were lost at follow-up. They were not motivated for a second test. All groups navigated the prototypes, following a scenario. A computer program measured navigation behavior. Talking-out-loud was used to assess perceived usability and satisfaction. An eHealth adoption questionnaire was used to validate results. Analyzed data were used to re-design each following prototype.

Results:

Characteristics: LeHL patients had a mean age of 70 and all followed low or middle education. They visited in center dialysis three times a week. The health care professionals were a good representation of the multidisciplinary team.

eHealth experiences, needs and barriers: Main barriers for eHealth adoption were a lack of computer knowledge, skills and experience. Participants also reported resistance against digitalization, because they believe it reduces personal contact and impacts quality of life, for example when shops close. Fear for privacy issues and errors played a role in the intention to adopt eHealth. High-frequent contact with professionals further diminishes the need for eHealth. Patients

reported that an easy design and support of others are important facilitators. Main content needs are information on lab values, diet and medication.

Finding an eHealth strategy: Professionals validated the suggested content by the patients. They suggested an easy-to-use prototype patient portal, with a personal patient story and realistic medical information, to support patients with LeHL. During use, patients should get hints and rewards to heighten entertainment.

Co-development and analysis

Patients with LeHL believed the content of the first prototype was useful, but too difficult. The computer program showed that patients lack basal skills to navigate. They struggled to open videos and read written content due to language barriers or impatience. The questionnaires showed a trend that patients with LeHL were more negative about their skills and knowledge after use.

In the second prototype information was simplified and personalized. The design was enriched with colors and symbols. LeHL patients showed improved navigation and expressed higher satisfaction with the design and comprehensibility, especially of the lab values. Questionnaires showed that participants were, after use, more positive about usefulness and their competences. Although, LeHL patients were not always convinced about the need to use eHealth in the future. The analyzed results of the third prototype are expected in one month.

Conclusions and discussion: Many dialysis patients are low eHealth literate. They miss competences to adopt eHealth and have negative thoughts about digitalization. If possible, they prefer face-to-face support. Co-creation helps to develop comprehensible and easy-to use eHealth solutions for patients with LeHL, which can increase belief in personal competences.

Health care organizations should improve support of patients with LeHL in an evolving digital world. Developers should improve the usability of patient portals, since this can facilitate eHealth adoption by empowering the patients' belief in personal competences. Face-to-face contact offers another possible strategy. When professionals succeed to explain benefits and incorporate eHealth in

consultations, patients are more willing to use it. Organizations should also reach out to the patients' relatives, since they often support Internet use.

This research also indicates the importance of cocreation. The first prototype led to a negative experience and a reduced belief in personal competences. The loss-to-follow-up in the group with LeHL illustrates that non-tailored eHealth solutions can cause a direct loss of users. Cocreation and the relation to adoption needs further research and implementation in eHealth development.

#58 An Assessment of a Maternity Unit's Written Health Information using the Centers for Disease Control and Prevention Clear Communication Index.

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Background: One aspect of building health literate societies is for healthcare organisations to provide health information materials that are accessible, usable and actionable for service users so that they can make informed decisions about their healthcare. To date the research shows that publicly available health information is written at a level that is far beyond the literacy skills of most adults. This means that publicly available health information may be considered inaccessible and unusable for the majority of adults.

Objective: The study aimed to map the process involved in the development and dissemination of a maternity service's written health material for service users and to assess material developed against best practice of health literacy standards.

Method: A qualitative study design was used. Data collection involved conducting a series of one-to-one interviews with five participants. An assessment of 20 maternity information leaflets (including layout and information design), was performed using the validated Centers for Disease Control and Prevention (CDC) Clear Communication Index.

Findings: Gaps were identified in relation to staff awareness of a hospital policy on the development of written information. Staff were aware of functional health literacy but there was a gap in the health literacy standard of the 20 maternity information leaflets assessed. The overall scores for the leaflets ranged from 21% to 65%.

Discussion: Although, the maternity service had a structured process in place for the development and the dissemination of written health information, the maternity information leaflets that were assessed failed to achieve the 90% pass mark of the CDC Clear Communication Index. Therefore, the information leaflets fell short of achieving best health literacy standards as recommended by the CDC Clear Communication Index.

Conclusion: Health information materials that are developed by healthcare institutions for service users should be accessible, usable and actionable to enable service users to make informed decisions about their healthcare. Findings from this study indicate that service users may experience difficulties in accessing and using the current materials.

#59 Psychosocial care project for mothers / adolescent mothers in Cameroon: Literacy in maternal mental health.

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Background: According to the WHO (2011), 14% of the world global morbidity burden is attributable to mental disorders and nearly ¾ of this burden falls on low- and middle-income countries such as Cameroon. The limited resources allocated to this sector in these countries lead to a 75% treatment deficit. In Cameroon, less than 1% of the health budget is invested in mental health, and there are very few mental health professionals: 0.05 psychiatrists and 0.35 clinical psychologists per 100,000 inhabitants. The presence of risk factors for noncommunicable diseases such as mental

illnesses is increasingly growing (Health Sector Strategy, 2016). Among the most vulnerable categories of people, we find mothers, adolescent and especially adolescent mothers and their babies. The Cameroonian National Institute of Statistics (2011) indicates that 42% of mothers are aged from 12 to 19 years, and 53% of them do not receive any perinatal care. In addition, there is no service/consultation for maternal mental health care all over the country.

Objectives: This situation justifies the development of a project with as general objective the management of adolescent mothers' mental health during the perinatal period, at the community and hospital levels. And one of the specific goals is literacy/creating awareness on perinatal mental health and adolescent mental health.

Methods: The approach includes: Training/capacity building of specialist and nonspecialist caregivers on the evaluation and management of perinatal mental disorders. Building maternal Literacy on Maternal Mental Health Psychoeducation: Destigmatize (demystify) mental health, spread information on maternal mental health issues (definition. manifestations, causes and risk factors, and management/treatment) and provide recommendations on mental hygiene and available help). The design of leaflets and posters (information on mental health) for mental health, for nutrition (information on balanced nutrition and how to compose balanced dishes with few means), and on hand hygiene. The characteristics of this psychoeducation are: a clear language, asking open questions, asking mothers to repeat what has been said, writing-emphasizing-pointing out the key words, using the decisional scale by helping the mothers to clarify their values and their preferences, to clarify why advantage and why inconvenience, the greatest time devoted to individual interviews with adolescent mothers (2) hours), the use of interpreters, sensitization of fathers who then give their authorization for the mothers to benefit from the psychological support etc. Initiation to book sharing for the improvement of the mother-baby relationship and information on the baby's emotional, cognitive and social development. The Psychotherapeutic Approach that consist in aspects of mental health literacy: recognition of symptoms, knowledge (experience) dysfunctions self-management and of

measures/attitudes such as CRP (Problem Solving Counseling) and thinking healthy.

Results: In 4 years 6 months, 1582 adolescent mothers were assessed/screened and 1006 were diagnosed with mental illness, from which 932 had maternal depression. The finding of low mental health literacy among adolescent mothers and false beliefs in maternal mental health was observed before the intervention, for only 2.5% of mothers knew the definition of mental health and were able to recognize some signs of mental illness. After intervention 100% were able. They were 247 mental health specialist and non-specialist caregivers belonging to 37 Health Care Centers who were trained in the evaluation (recognition) of perinatal mental disorders (depression, psychosis, self-aggression and suicidal behavior) and 92 of them had been able to master the management of these disorders. Psychoeducation was provided to 23,137 people, including 2,092 mothers (adults and adolescents). In view of the above, one of the prospects is to be able to set up a free downloadable application that will allow the public to recognize the signs and symptoms of maternal mental suffering, to have knowledge of maternal mental health, and adopt positive attitudes towards mental disorders, towards people with mental health and towards mental health professionals.

#61 Health literacy, numeracy and patient-reported measure of the shared decision-making process in France.

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Background: Patient-centred care is nowadays encouraged. One of the fundamental aspects of this approach is the participation of patients in medical

decision-making (DM). However, shared decisionmaking (SDM) requires the transmission of information to patients, the elicitation of patients' preferences and taking into account these preferences in deciding what to do next. It thus requires patients' competences to understand medical information and to use it appropriately to participate in decision-making. Health literacy (HL) is likely to affect patients' ability to engage in SDM. It is therefore essential to consider and integrate this dimension when measuring and promoting participation in medical decisionmaking. Contemporary conceptualizations of HL include several skills beyond reading, understanding, and acting on information, including numeracy. Numeracy skills are important to calculate and to understand numbers and tabulated information frequently used communicate health information. Despite the growing interest in HL, multidimensional measurement tools have been only very recently validated in France. Moreover, several brief selfreported instruments, easier to use in clinical practice have been developed to asses HL, numeracy, but also SDM. No French versions have been proposed and validated.

Objectives: The general aim of this study was to assess the relationship between health literacy, numeracy and SDM process. A preliminary objective was to assess the psychometric properties of the French versions of three brief self-reported instruments evaluating health literacy (3HLQ/SILS), numeracy (SNS-3), and SDM process (collaboRATE).

Methods: A cross-sectional survey using a selfadministered online questionnaire was proposed to all members of Seintinelles, a national non-profit organisation helping recruitment for cancer studies. Participants' sociodemographic characteristics, including gender, age and educational level were collected. HL was evaluated using the Functional, Communicative and Critical Health Literacy (FCCHL) scale and the 3 Health Literacy Questions (3HLQ). The first question focuses on the need for a surrogate reader, and is also known as the single item literacy screener (SILS). The short version (3 items) of the subjective numeracy scale (SNS-3) and a 3-item measure of the SDM process (collaboRATE) were also used. Individual deprivation was collected using the EPICES index

(score ≥30.17 indicates deprivation). Doctorpatient communication was also evaluated with the following question: Do you usually find asking your doctor questions difficult? Possible responses ranged on a 5-point Likert scale from 1 ("never") to 5 ("always"). The score has been reversed so that a higher score corresponds to better communication. Psychometric validations of all scales were conducted evaluating floor/ceiling effects, reliability, concurrent and known-group validity. To assess the relationship between HL, numeracy and SDM process, binary logistic regression models were used.

Results: The mean age of the 2444 participants was 47.7 years (SD=13.6), 96.7% of participants were women, 46.1% had a history of cancer.

The French versions of three brief self-reported instruments showed adequate psychometric properties. For SNS-3 (mean=14.25, SD=3.46), Cronbach's α was 0.76. For the 3HLO (mean=12.79, SD=1.87), α was 0.67. For CollaboRATE (mean=20.77, SD=6.22), a was 0.91. Globally, correlations between the different items within each scale were >0.4 (ranging from 0.40 to 0.88). 3HLQ was moderately correlated with functional HL (ρ=0.46), less with communicative HL (p=0.16) and not at all with critical HL (p=-0.02). The first 3HLQ question (SILS) was the most strongly correlated to the functional dimension and the total FCCHL scores $(\rho=0.48)$. There was a significant increase of FCCHL scores considering 3 categories for SILS: inadequate HL (51.97 \pm 6.62), marginal HL (54.75 \pm 6.34), and adequate HL (57.90 \pm 6.92, p<0.001). Numeracy (SNS-3) was significantly, but weakly correlated with all HL measures (except critical HL).

CollaboRATE was significantly correlated with all HL measures (except communicative and critical HL). It was also correlated with difficulties asking physicians questions (ρ =0.42). Functional and communicative HL and numeracy were positively associated with SDM process while no significant relation was observed between critical HL and SDM. Furthermore, perceived difficulties in asking physicians' questions and deprivation were negatively associated with SDM.

Discussion: To our knowledge, this is the first study validating French versions of brief self-reported instruments evaluating HL, numeracy and SDM process. Our study highlighted the reliability and validity of measurement tools compared with the original versions. The first 3HLQ question ("Help read") was the most strongly correlated to the functional dimension and the total FCCHL score, confirming it seems a good choice to use it as a Single Item Literacy Screener.

In addition, our results on the links between functional HL, numeracy and SDM process complement previous work that investigated the links between functional HL, numeracy and preferences to participate in decision-making and highlight the impact of difficulties in understanding medical information on patient engagement in SDM. Moreover, patients with high level of communicative HL or who had no difficulties asking questions to physicians were more likely to participate in SDM. Indeed to make the SDM process effective, the exchange of information between doctor and patient is crucial to reach the process of deliberation.

To reach SDM, considering both the functional and communicative skills of patients seems a prerequisite. Physicians might be more reluctant to engage in SDM with low-literate patients and/or low-literate patients might perceive they need more help form physicians to engage in SDM.

Conclusion: The French version of 3HLQ/SILS, SNS-3 and CollaboRATE provides reliable and valid measures to explore the dimensions of HL and SDM. Brief tools could be used by health professionals to screen for HL level in order to help patients develop these skills, to tailor health communication and to promote SDM and patient-centred care.

#62 Measuring health literacy skills for decision making about colorectal cancer screening.

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Objective: To construct and evaluate a comprehensive computer-based instrument to accurately measure health literacy skills in decision making about colorectal cancer screening. Accurate measurement of health literacy is essential to better understand the role of health literacy in decision making and for the development of tailored decision support.

Method: A measurement instrument was constructed based on a conceptual framework of health literacy skills for informed decision making in colorectal cancer screening. An expert survey was conducted to identify health literacy domains and select appropriate measures. The selected measures were then field-tested (n=28) and pilottested (n=696) among individuals eligible for colorectal cancer screening (55-75 years of age). The validity and reliability of the instrument was assessed using classical test theory (CTT) and item response theory (IRT) approaches. Potential item bias due to age, gender and educational level was evaluated using measurement invariance.

Results: Confirmatory factor analysis confirmed four factors: comprehension, application, numeracy and communication. Internal consistency (Cronbach's alpha > 0.6 for the four scales) and test-retest reliability were acceptable. The item difficulty parameters reflected that the items are most discriminating at lower to medium levels of health literacy.

Conclusions: The measure showed good measurement properties and was measurement invariant. This implies that it can be used in a population eligible for colorectal cancer screening with varying health literacy levels. In addition, the construction and validation of this measure may serve as an example of how to measure health literacy in other specific contexts.

#63 Development and evaluation of an innovative computer-based decision aid to enhance informed participation in colorectal cancer screening.

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Objective: Making an informed decision about colorectal cancer screening requires adequate health literacy. Our aim was to develop and pilottest a computer-based self-administered decision aid to support informed decision making about colorectal cancer screening for individuals with varying health literacy levels.

Methods: The decision aid prototype was based on the International Patient Decision Aid Standards. We tested the prototype for its usability, acceptability and comprehensibility (alpha-test) among 15 individuals with low health literacy and 10 individuals with adequate health literacy. The prototype was then beta-tested, using a before/after study to assess changes in knowledge, attitude, intention, decisional conflict, deliberation, anxiety and risk perception among individuals eligible for colorectal cancer screening who were not involved in the design stage (n=81).

Results: The decision aid includes information about colorectal cancer, screening, instructions about performing the fecal immunochemical test and a values clarification exercise. The decision aid acceptable, comprehensible. improved knowledge about colorectal cancer screening, decisional conflict and increased deliberation for individuals with adequate health literacy as well as individuals with low health literacy. No significant changes were found for attitude, intention, anxiety and risk perception. Usability was slightly higher for participants with adequate health literacy compared to those with low health literacy.

Conclusions: The decision aid is promising in supporting informed decision making about colorectal cancer screening, also among individuals with lower health literacy. Further tailoring is needed to pre-existing knowledge, personal beliefs and decision making preferences to guide deliberation and engagement with the screening decision.

Practice implications: Computer-based decision aids for colorectal cancer screening can be designed to be suitable and acceptable for individuals with varying health literacy levels. This can be achieved by involving individuals with varying health literacy levels in the design in order to establish the comprehensibility, usability and acceptability of computer-based decision aids.

#64 Health Literacy (HL) in Frenchspeaking countries, a new network -Conceptual, theoretical, and practical aspects of HL measurements.

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Launched in 2017, RéFLIS is the 1st network among French-speaking countries and involves 1 Belgian and 9 French research teams from various backgrounds: epidemiology, psychiatry, general practice, psycho-sociology, social anthropology, public health, law, and psychometrics. One of the main scientific objectives is to analyse the links between health literacy (HL) and social inequalities in health for the implementation of interventions aimed at improving HL and health behaviors (promotion, prevention, care). Studying the theoretical background of the conception of tools measuring HL is a prerequisite as skills measured in questionnaires depend on interaction between subjects and their social, cultural, medical environments. This symposium will be a synthesis of insights on HL measurement that emerged from our works on cultural adaptation of HL questionnaires into French:

- Cultural adaptation and psychometric evaluation of the French version of the Functional, Communicative and Critical Health Literacy (FCCHL) scale. After French translation and pilot testing, the validity of the FCCHL was studied on 2342 respondents (45.8% had cancer history) to an online cross-sectional survey proposed to all members of Seintinelles, a national non-profit organization helping recruitment for cancer studies. Acceptability was good (missing value by item <0.7%), factor analysis revealed an acceptable fit three-factor of model (CFI=0.922, RMSEA=0.065) and the reliability was satisfactory (α =0.77). Scalar measurement invariance was reached for education and deprivation, but not for age. Known group validity was verified as mean scale scores differed according to education, deprivation and age, as expected. Hence, the French version of the FCCHL provides a brief (14items) reliable and valid measure to explore the functional, communicative and critical dimensions of HL.

- Psychometric properties of the French translation of the 16- and 6-item short versions (HLS-EU-O16 and HLS-EU-O6). A consensual French version of the questionnaires was developed and completed by 317 patients waiting general practitioners visits. The Rasch model and confirmatory factorial analyses (CFA) were used to study construct validity. Concurrent and convergent validity, respectively, were assessed by scores on the FCCHL questionnaire and the physicians' evaluations of their patient's HL. The 16 items of the HLS-EU-O16 were Rasch homogenous but meaningful differential item functioning (DIF) was found across sex, age, and/or education level for eight items. The CFA model fit for the HLS-EU-Q6 was poor. Overall scores for both HLS-EU short versions correlated poorly with the FCCHL scores. Despite meaningful DIF and poor discriminative power at high HL levels, the French version of the acceptable psychometric HLS-EU-O16 has properties.

- Validity testing of the multidimensional Health Literacy Questionnaire among French people at cardiovascular risk. Data were collected from 175 participants in local associations of patients. The French version of the HLQ was shown to be psychometrically robust with good reliability. A 9factor CFA model was fitted to the 44 items with no cross-loadings or correlated residuals allowed. The fit of this nine-factor structure close to the original HLQ was satisfactory (CFI 0.925, TLI 0.918, RMSEA 0.058). Composite reliability ranged 0.77-0.91. Among the 9 scales, the highest scores were found for scale 1 "Feeling understood and supported by healthcare professionals" and 9 "Understand health information enough to know what to do" and the lowest for scales 2 "Having sufficient information to manage my health" and 7 "Navigating the healthcare system". In the context of France, the 9 HLQ scales allow a thorough assessment of health literacy strengths and weaknesses to respond to health literacy needs.

- Methods to ensure best content validity and French adaptation of the eHealth Literacy Questionnaire. The objective is to compare the content and face validity of forward-expert committee and dual-panel methods, during the French adaptation of the eHLQ (35 items, 7 dimensions). Two pairs of eHLQ translations will be produced; one pair comprising one translation by each method. Judgement criteria (blinded from the translation methods): 1/ Bilingual people will compare one pair of translations with the original, ranking the translations regarding their closeness to the original. 2/ Lay people will compare one pair of translations, ranking them for each items on their comprehensibility. 3/ One of the developers of the e-HLQ will rank the translations according to their closeness to the intent of the original, by discussing the meaning of the translations with bilingual experts. For each criterion, the method with the highest percentage of items ranked as best will be considered the best. The replication in pairs will assess the robustness of the conclusions and allow for proposing methodological recommendations.
- Transcultural adaptation of the « Health Literacy Assessment Scale for Adolescents » (HAS-A) in French. The objectives are 1/to adapt the self-administered questionnaire "Health Literacy Assessment Scale for Adolescents" (HAS-A); 2/ to study the validity of the HAS-A and of the 16-item version of the HLS-EU-Q16 in French in the adolescent population; 3/ to describe HL and to explore its links with socio-demographic characteristics and behaviors in a sample of adolescents (12-19 years old) from the general population in France. Four phases are planned: 1/

Consensual translation of the HAS-A by a group including experts in HL, child and adolescent psychiatry, general practice, education, psychometrics and English-French translators; 2/ Evaluation of the comprehensibleness of both questionnaires (focus groups of fifteen young volunteers, 12-19 years); 3/ Field testing on about 120 adolescents in grade 7, 9 and 11; 4/ Study of questionnaires validity in 1200 adolescents in grade 7, 9 and 11.

The next steps will be to measure HL in Frenchspeaking countries among diverse populations, from healthy people through population-based representative surveys or cohort studies in the general or specific population (diabetes: ENTRED study in France, field study in Mali; gay men, online survey; health care professionals, and medical or allied students), to subjects visiting physicians, hospitalized or otherwise ill. The discussion will focus on the interest to obtain a single generic self-reported tool vs multiple tools for different purposes and/or targeted population, the need for advanced methodology for adequate cultural adaptation, study of invariance, etc., the challenges of self-reported instrument among people with very low HL.

#65 The Nursing Mothers' Association of Australia: A new model of maternal education with health literacy implications.

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This paper is in the context of research about adult education and the history of maternal education since the early twentieth century.

There is a gap in the understanding of maternal education as part of adult education and specifically a gap in understanding how the Nursing Mothers' Association of Australia, now known as the Australian Breastfeeding Association, educated mothers about breastfeeding which is an important aspect of health literacy.

In considering the ways of improving mothers' health literacy about their mothering role generally, about infant nutrition and particularly breastfeeding, it is important to be aware of the very

successful educational model about breastfeeding that the Association devised.

It is useful to consider the age of "serious instruction", how mothers were educated in the first half of the twentieth century. This was the modernist approach with the "scientific mother". And it led to rapidly declining breastfeeding in Australia and elsewhere.

The key to the success of the Association, founded in 1964 was that the Founders devised a new model of educating mothers about infant nutrition and particularly breastfeeding: they established simultaneously a community of learners and a community of practice.

The core principles of the Association's maternal educational model were firstly mother to mother education, secondly valuing the experience of the learner and thirdly, encouraging a critical view of mothering and breastfeeding. Allied to these were the training of the volunteer Counsellors to maternal facilitate the education. the the program, dedifferentiation of new understanding of how groups can support their members and the development of a new discourse of infant nutrition which has empowered mothers not only to successfully breastfeed but also, to change society's attitudes to breastfeeding.

The Founders realized that mothers could learn while engaged in caring for their children, that they learned by taking a problem-solving approach and by imitating observed behaviour. This approach encouraged interactive literacy about breastfeeding.

The training for Counsellors and Community Educators was progressive adult education where the aim of that education was in assisting the student to function in society, to learn by experience, reflect on that experience and thus attain a high level of critical health literacy in relation to infant nutrition.

The Association's Constitution and its Code of Ethics bound the Members, affecting interactions in the community, counselling and the running of discussions. The Code of Ethics demanded a "softly, softly", collaborative, non-confrontational approach to community education. The Association sought to raise awareness about babies and alert the learners, whether expectant parents, medical students or school children to the presence of the Association and its resources. It was a combination of problem-based learning and observation,

encouraging the development of functional and interactive literacy about breastfeeding.

In the face of the feminists they have redefined the concept of motherhood as "nurturer" and in defiance of the consumer society, they have replaced the signifiers of good infant nutrition and good mothering with their own products such as the Meh Tai sling which encouraged bonding with the baby.

The Founders were particularly influenced by Winnicott's concept of the "good enough" mother and identification of the state of late pregnancy and the post-partum period as a time of "primary maternal preoccupation" which was when mothers most needed the support of other mothers. The groups functioned to provide an "environmental holding" for the mother who could gradually become more involved with the group.

The Founders were prepared to challenge the grand narratives of infant nutrition and to trust their own knowledge. They questioned the prevailing views about the "scientific mother" and they were vehemently opposed to the minimalist mothering implicit in the modernist approach to infant nutrition. They had the confidence to subject the modernist ideas to examination based on their own experience and their awareness of psychological theory, particularly Bowlby. This willingness to question encouraged a critical understanding on the part of the mothers, contributing to the acquisition of critical health literacy.

The Association provided education that was non-institutional and led by the mothers. This was education that some would describe as ephemeral and disjointed, as fragmentary and superficial, however, it was a democratic, postmodern approach to adult education where the learners could make choices about what they would learn, how they would learn it and where they would learn it

The Association sought to change the discourse of infant nutrition and mothering generally. It provided mothers with information that was correct, understandable and inherently allowed the mother to choose for herself what suited her own circumstances. It used the true voice of the Australian mother in its fully researched publications. It regarded knowledge as fluid and ever changing, with publications constantly under revision. It gave voice to mothers' intuitive knowledge of a baby's well-being.

From their contact with the Association, mothers have found their voices, articulated their knowledge and empowered themselves. They have contributed to government enquiries, they have effected changes in policies in hospitals and workplaces. This education model has successfully fostered mothers' interactive and critical health literacy in infant nutrition, specifically in the area of breastfeeding, contributing to increased breastfeeding rates, and wide acceptance of breastfeeding in the community.

#66 Modifying Behaviour using Technology: The BigO Clinical Feasibility Study

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Background: Environmental factors including food and physical activity environments and food marketing contribute to unhealthy diets and sedentary behaviours among children. The BigO (Big Data Against Childhood Obesity) project will gather and analyse big data on school children's behaviours and their environments. A clinical arm of the BigO Project will use the technology with an age-matched cohort of children with obesity as part of a mHealth intervention.

Aims: To examine, using a randomised feasibility study design, the feasibility and acceptability of proposed protocol for a mHealth RCT with children attending a clinical obesity service in Ireland.

Methods: Twenty children and adolescents (9.0-16.9 years) with obesity (BMI ≥98th centile) will be recruited within a weight management service at a tertiary healthcare setting. Upon completing informed consent and assent, participants will be registered with the BigO project and assigned study equipment including a smartwatch and Mandometer®. myBigO app links physical activity behaviours with environmental indicators and

participants also use myBigO app to photograph food and map food marketing images. The Mandometer® measures rate of eating and provides training on reducing the rate of eating.

Participants will undergo 2 weeks of baseline tests including anthropometry, rate of eating by Mandometer® and physical activity level using a smart-watch and myBigO app. Thereafter participants will be randomised to either: (1) Treatment: Usual clinical care + Mandometer® training + myBigO app, or (2) Control: Usual clinical care + myBigO app. The primary outcome is change in BMI SDS. Secondary outcomes include rate of eating, food consumption, physical activity levels, quality of life, and technology engagement and usability scores. The randomised feasibility study is being run 'in-miniature' with a shorter treatment period of 4-weeks compared to 4months proposed for the definitive RCT. Process evaluation parameters for the feasibility study include fidelity with planned protocol, recruitment, reach, randomisation, dose delivered and dose received. Participant evaluation questionnaires, usability surveys, engagement scores, participant demographics, and research notes will be used to inform the process evaluation.

Results: The BigO clinical RCT is currently in the feasibility study phase.

Conclusions: The outcomes of process evaluation and the efficacy and usability of the Mandometer® and myBigO app among children and adolescents in treatment for obesity in a clinical setting will be reported. Results will be used to inform protocol and procedures for the definitive RCT.

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#67 Healthy Ireland at Your Library– Limerick City & County Library Service and HSE Mid-West working together to improve public health literacy.

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Introduction: Healthy Ireland at Your Library campaign (HIaYL) started in Ireland in 2017. The HIaYL programme has four main strands: book stock, online resources, events and partnering with organisations. October other In 2017. representatives from Limerick City & County Library Service, Clare County libraries Southern region, the public health department, the Regional Medical library for the Mid-West the Patient advocacy liaison service, health research institutes, the Clare Heart Health Promotion Team came together to explore health literacy within Ireland Mid-West region.

Aim: The purpose of this poster is to outline different initiatives taken by HSE Mid-West Regional Medical library and Limerick City & County Library Service to promote and improve health literacy level for the public.

Method: Through preliminary discussion, it was decided to carry health promotional material in Limerick Libraries, an initiative that was well received by all 16 library branches across Limerick. The issue of public library staff fielding health questions was raised and it was decided to hold a workshop to address this. An online survey was carried out allowing staff to highlight questions and concerns. The workshop at the HSE Mid-West Regional Medical Library for staff of Limerick City & County Library Service was particularly useful in addressing the types of health questions that could be expected, how to answer such questions, health resources available and how to evaluate health websites.

Results: The feedback from staff was very positive and those who attended felt more confident in dealing with health queries. Further feedback must be collected to assess the impact of the workshop in the long term.

Phase II of the Healthy Ireland Campaign commenced in September 2018 and Library staff continue to work with Health partners in disseminating information and giving guidance on resources. For example the National Patient Experience Survey 2018 was available in Irish

Libraries earlier this year and the Limerick City & County Library Service has just signed up to the We're Breast Feeding Friendly initiative in all Limerick libraries. There are also opportunities for more partnership between the public library network and the HSE Mid-West Regional Medical Library to support public health literacy as well as a possibility to replicate the workshop for Clare County Libraries.

#69 Health information literacy as a concept used by Library and information science.

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Compared to widely used concept of health literacy, health information literacy can be seen as a more focused construct. It is mostly used at the field of Library and information science. The aim of this abstract is to represent the concept of health information literacy, discuss about its background and to address the difference between it and the concept of health literacy.

In Library and information science there is a long tradition on research relating to information literacy and, on the other hand, on human information behavior (including e.g., information needs, information seeking and searching, information use and information avoidance). The theoretical discussion on information literacy varies from teaching of information seeking, handling and use in academic contexts, to seeing information literacy as an umbrella term that encompasses concepts such as digital, visual, academic and media literacies (Society of College, and University Libraries 2011). National Nowadays it is also emphasized that we have a greater role and responsibility in creating new knowledge, in understanding the features and the changing dynamics of the world of information, and in using information, as well as data, ethically (Association of College and Research Libraries 2015). Through reframing information literacy as a metaliteracy, the scope of generally understood information competencies expands and places a particular emphasis on producing and sharing information in participatory digital environments (Mackey & Jacobson 2011, Jacobson & Mackey 2016).

In the field of Library and information science the abilities, competencies and skills related to health information have been conceptualized as health information literacy, a concept introduced by Medical Library Association. The Medical Library Association defines health information literacy as "the set of abilities needed to: recognize a health information need; identify likely information sources and use them to retrieve relevant information; assess the quality of the information and its applicability to a specific situation; and analyze, understand, and use the information to make good health decisions." (see Shipman et al. 2009.)

Health information literacy combines the concepts of information literacy and health literacy – health information literacy can be seen as information literacy in the context of health. It is best applied to different kind of texts, but also to visual and oral information. Niemelä et al. (2012) argues that it is most appropriate for assessing general everyday health information literacy among the literate population.

A concept comparison of health literacy and information literacy by Lawless, Toronto & Grammatica (2016) revealed that there are common attributes, but also unique features. "Unique to information literacy was an emphasis on search skills, search strategies and finding information" (Lawless, Toronto & Grammatica 2016, 156). The attribute of information need is highlighted in the definition of health information literacy (see e.g., Huhta, Hirvonen & Huotari 2018). In addition, the competencies and abilities relating to critical thinking are in the center of insight of information literacy and, on the other hand, research on information use.

According to Huhta, Hirvonen and Huotari (forthcoming) health literacy research seems to lack a consensus on what aspects to include into 'literacy' in the context of health. The conceptual discussion and theory building around health literacy could benefit from the literature on information literacy. Furthermore, a strong, more focused viewpoint on information needs, seeking and use might be beneficial in many contexts

relating to health information and in these cases the term health information literacy could be a good choice instead of broader health literacy. Maybe these concepts could be also developed further in collaboration. Generally speaking, it is good to be aware that in different fields different concepts are favored and the same topics can be approached from different point of views and seen in different lights.

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#70 Bridging the gap between health literacy research and education: development and evaluation of a European health literacy education program.

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Background: Persons with low Health Literacy (HL) often have less optimal outcomes in healthcare compared to persons with adequate HL. Effective education to improve the competences of (future) healthcare professionals can reduce the burden of low HL and enhance people-centered prevention and care. However, HL education is rarely incorporated in curricula. The main object of the IMPACCT (IMproving Patient-centered Communication CompeTences) project is to improve the relevance and quality of education of medical and nursing students in Europe through the development, implementation, evaluation and dissemination of an European Health Literacy Educational Program (HL-EP).

The main objectives of this symposium are:

- a. To inform participants of our journey to develop and implement student-centered, competency-based and practice-oriented education with short presentations on five topics (see below).

 b. To invite participants to add new perspectives and to formulate recommendations to improve the quality of the HL-EP. Participation will be encouraged using critical statements, short films and other strategies.
- 1. Capacity building of healthcare professionals and implementation of organizational

health literacy interventions in Europe- main lessons learned

To introduce the symposium, we will present the main lessons learned from European research regarding capacity building of healthcare professionals and the implementation of organizational health literacy interventions which has informed the development of the HL-EP.

2. Understanding perspectives of low health literate patients with chronic diseases to develop a patient-centered educational framework: A scoping review

Introduction: Patient-centered care is associated with better health outcomes. Using evidence on the perspectives of patients with chronic conditions and low HL can contribute to education which enhances patient-centered prevention and care. We conducted a scoping review to synthesize evidence on the needs, experiences and preferences of low HL patients with chronic diseases, to develop a patient-centered educational framework.

Methods: We searched three databases: PsychInfo, Medline and Cinahl. We extracted 800 articles published without time constraints until the 13th of February 2018. A total of 104 articles met the inclusion criteria. After data extraction and thematic synthesis, key themes were identified and matched to a draft educational framework.

Results: The draft educational framework contains five core educational domains with five objectives: (1) Strengthening support by communities, families or peers, (2) empowering people with low HL, (3) person-centered promoting interaction. strengthening leadership and collaboration among healthcare professionals and (5) reducing communication barriers healthcare in organizations. These five domains were all important from a patient perspective, although some received more attention in the literature than others. Key themes such as importance of support by peers or family members in the context of decision-making processes and self-management, or communication behaviors of healthcare professionals which affects disclosure and participation, defined a set of learning outcomes.

3. Co-creating a Health Literacy Educational Program

Introduction – Patients, educators, students and other stakeholders bring unique knowledge and

skills to projects which can help to improve the relevance and quality of education.

Methods: To develop the Health Literacy Educational Program (HL-EP) in co-creation, a group of about 600 stakeholders from Germany, Ireland, Italy, the Netherlands, and Slovakia are involved in the IMPACCT project with the aim of gaining a better insight into the needs, barriers and facilitators of Health Literacy education. The group consists stakeholders of educational professionals, medical and nursing students, policy-makers, healthcare professionals, older adults, patients and members of patient organizations.

Results: Stakeholders confirm that future healthcare professionals need a range of competences to overcome health literacy problems and to promote patient-centered care. According to stakeholders the HL-EP should competences and themes including: social and cultural competence, leadership to promote health literacy friendly hospitals, food health literacy, mental health literacy, shared decision making, flexibility in communication, and transitions in healthcare (e.g. hospital discharge) leading to the development of 17 learning units. To enhance the feasibility and implementation **IMPACCT** concluded that a 'supermarket' model is needed. In each country, educators can select from a range of learning units or small educational activities they find useful and relevant for their setting.

4. Conversation analytic research to support the development of realistic and relevant health literacy education

Introduction - Conversation analysis of videorecorded patient-professional encounters provides useful starting points to develop innovative learning strategies.

Methods: Based on conversation analytic research we are developing educational activities which enable students to recognize and apply effective communication strategies to enhance understanding and participation of patients with low health literacy. For example, based on responses to patients' "I don't know"-answers, we developed a workshop on how to deal with patients who hardly participate in the conversation. Moreover, we use examples of teacher-student conversations to make (future) healthcare professionals aware of the difference between

claiming and demonstrating understanding, and what this may say about a patient's actual level of understanding.

Results: Students and healthcare professionals have stated that using video-recorded patient-professional encounters are relevant in teaching because it makes them explicitly aware of the direct consequences of different communicative strategies, and facilitates reflection on these. Some communication strategies to enhance understanding of patients may be more patient-centred than often used strategies such as the teach-back method.

5. Effectiveness of a health literacy consultation skills training for medical undergraduates: a randomized controlled trial Introduction - We integrated one of our learning units into medical consultation skills training in the Netherlands to improve its effectiveness.

Methods: Development of health literacy competencies was evaluated in an international sample of medical undergraduates using a randomized trial design with self-report questionnaires and observed video-taped roleplays. Results: Compared to the control condition, students in the intervention reported significantly improved health literacy competency following training, and this persisted up to six weeks afterwards.

Conclusions: Using mixed-methods we have developed a comprehensive health literacy education program. The relevance and effectiveness (of one of the learning units) has been confirmed. We expect that the HL-EP can be used for different types of students at different levels in curricula. We hope that this symposium will contribute to the further development and implementation of Europe-wide health literacy education.

#71 The ABC for mental Health: A universal mental health promotion campaign to improve mental health literacy.

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In recent years there has been an increased focus on population mental health, and recognition that treatment alone is unlikely to make a significant difference to the escalating rates of mental illness being experienced worldwide. It has been recognized that interventions focusing on prevention and promotion are critical in enabling individuals to protect their mental health.

Mental health promotion can be defined as interventions designed to maximize mental health and well-being by increasing resilience of communities and individuals and by improving environments that affect mental health.

In spite of the many recent and past commendable documents presenting frameworks for mental health promotion, there has been a lot of rhetoric -but very little action.

Act-Belong-Commit - that originated in Western Australia – was one of the first attempts to develop and implement a population-wide mental health campaign, as distinct from mental illness prevention or early intervention initiatives.

In 2015, Denmark was the first country outside Australia to adopt the campaign. It has since been adapted to a Danish context under the title The ABC for Mental Health (In Danish: ABC for mental sundhed) and is currently being implemented in collaboration between the the Danish National Institute of Public Health and a multitude of stakeholders e.g. the Healthy Cities Network, Local Government Denmark, The Danish Mental Health Foundation, The Danish Scouts, The Red Cross, and seventeen municipalities across the country.

The ABC for Mental Health campaign aims to harness resources already present in communities – because the behaviours that promote mental health and well-being are everyday activities that most people are already doing or are readily available. The campaign's focus is on raising awareness of this fact, and to communicate some simple and practical steps to engaging in behaviours known to promote mental health. Thus, the ABC for Mental Health campaign targets individuals to engage in mentally healthy activities while at the same time supporting and encouraging organizations that offer mentally healthy activities to promote, and

increase participation in, their activities. Partners are encouraged and supported in working together across sectors. Overall, the ABC messages encourage people to be physically, spiritually, socially and mentally active, in ways that increase their sense of belonging to the communities in which they live, work, play and recover, and that involve commitments to causes or challenges that provide meaning and purpose in their lives. This is expected to increase feelings of meaningfulness, manageability, and comprehensibility i.e. sense of coherence and resilience.

The development and implementation of the campaign is a constant and dynamic process between the partners. Action research ensures that the campaign is rolled out on the best foundation.

At the conference I will present the background for the campaign, the campaign itself, and our findings and experiences to date.

The ABC of Mental Health is the Danish adaptation of the Act-Belong-Commit campaign that originated in Western Australia. To date, the only comprehensive, population-wide program identified that has a strong evidence base, demonstrated success in implementation, and universal principles of wellbeing.

#73 Promoting Health Literacy of Socially Disadvantaged Youth with a Migration Background in Educational Settings.

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Background: Health literacy is an important determinant of health and enables the individual to make good health-related decisions and to act upon them to improve his/her health. But studies demonstrate that the likeliness of having opportunities to develop the health literacy is not equal distributed in the society, because some groups for example socially disadvantaged youth and young people with a migration background have less opportunities which contributes to an increase in social and health inequalities. An empirically promising approach to improve health

literacy is to target it in the school settings. In Germany, a high share of adolescents and young adults with a migration background attend the 'transitional system' and German as a second language courses. However, besides the numerical evidence of a low level of health literacy, little is known about the health behavior and health knowledge of these young people, their healthrelated interest and needs, the resources they utilize to achieve their goals and the context which enables or prohibits them to use their health literacy. The transitional system and language courses are understudied and the role of health (literacy promotion) is rarely described. Hence we conduct an ethnographic research project, and explore, describe and understand the health literacy of young people with a migration background in the school setting and develop an intervention for teachers and social workers to strengthen the health (literacy) of their youth. This project is part of the research cooperation on 'health literacy in childhood and adolescence' which is supported by the German federal ministry of education and research. It consists of three phases: preparation phase including literature reviews, expert interviews; ethnographic research for 1 year and 2 educational settings and intervention development, implementation and evaluation.

Objective: The guiding questions of this presentation are: What is known about the health literacy of young people with a migration background as a social practice? How is health literacy defined? What role has the educational course, the teacher and the student? What is happening at the micro-level? What's the influence of the context?

Method: We conducted three literature reviews on the health literacy of refugees/migrants, on health (literacy) promotion within the transitional system and on HL in English/German as a second language course on seven databases (Academic Search Primer, Medline, PsychINFO, Eric, Education Source, BASE and google scholar).

In addition, we interviewed more than 10 experts (teacher, social workers, and interpreters) between October 2018 and February 2019 on various aspects related to the health literacy of young people with a migration background. We analysed the data following the qualitative content analysis by Kuckartz and using MAXQDA.

Results: Within our in-depth analysis of the literature review, four main topics emerged: first the concept of health literacy, the roles within the given school setting, the micro-analysis of the teaching/learning curricula content, methods and interaction in the educational setting and the broader context.

The literature on health literacy and people with a migration background reveals that health literacy is often used in studies in a narrow understanding (for instance antenatal health literacy) even though it is referred to as being far broader. Within the overview competences related to five domains could be differentiated. Three of them are the basis of health literacy which is necessary for every person in this world, the two other domains cover tasks that migrants and refugees are confronted with.

The review on health literacy and language course revealed various understandings of the role of the courses, of the teachers and students. Concerning the role of the courses, it became obvious that the majority of the existing courses are primarily functional at aim at acquiring certain pre-defined language skills whereas there are also some other courses that support the young people to gain selfconfidence and establish a social position. The role of the teacher varies between being an instructor, a facilitator, a friend or even a gate-keeper to other institutions. According to the role definition, the teachers fulfill different tasks from transferring knowledge up to supporting the students on a personal /mental basis. The primary role of the students is to acquire language skills and competencies to engage in the social and work life in the new country.

On the micro-level, some address health as specific modules, some integrated into the course and others do only touch it roughly. A huge range of teaching strategies to improve (health) literacy were found from call-response, scaffolding to problem- and project-based learning. Sporadically, also new and social media are used to help the student find health information.

The reviews demonstrate that the context is important and three levels can be differentiated. Firstly, the interaction in the classroom and the relationship between the students can be a stressor or health-promoting. Secondly, the school setting and the available resources can create a friendly, welcoming, learning-supporting place. Thirdly, students can expand and utilize their competencies

in real-life encounters through the cooperation with actors outside the school system such as health professionals, local initiative, and migrants' organization.

Conclusion: The educational system is a promising setting to address health literacy of socially disadvantaged youth such as young people with a migration background. But this study showed that health literacy promotion is far more than only the content addressed and method utilized. On the one hand it is about understanding the concept of health and daily needs of the young people and responding adequately and on the other side it includes the attitude of the teachers and to connect the young people to other networks and to expand their resources, the social support, and their sense of coherence. So, it supports not only the empowerment of the individual to gain selfconfidence and advocate for one's health but it also contributes to the reduction of health inequalities and promote health literacy on the public level. Further ethnographic and applied research projects are needed to broaden and deepen the empirical basis on health literacy promotion in educational settings.

#74 The effectiveness of health literacy Digital health literacy intervention for liver fluke prevention among secondary school students.

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Title: The effectiveness of health literacy Digital health literacy intervention for liver fluke prevention among secondary school students.

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Liver fluke, Opisthorchis viverrini is a serious public health problem among populations in northeast Thailand. Only a few studies designed the health literacy intervention for liver fluke prevention. This study was designed intervention on Digital health literacy intervention focusing to prevent new cases and modifying behavior of liver fluke prevention. The aim of study is to evaluate the effectiveness of school-based health literacy on for liver fluke prevention.

The study comprised a cluster randomized controlled trial (CRTs) with three assessments (baseline, posttest, and 3-month follow-up). We recruited 1,100 students from 40 classrooms in 20 public rural secondary schools, northeastern Thailand. 55 students in 1 school were randomly allocated to an experimental group and the other 55 in different school to a control group. The experimental group received health literacy intervention which consisted of lectures, walk rally and LINE sticker that created by researcher. The control group attended regular education. The duration of intervention was 12 weeks. Repeated measures ANCOVA was used to assess the effects at posttest and follow up and generalized Estimating Equations (GEE) was used to assess overall of study.

The results showed that an experimental group had higher mean scores of health literacy and liver fluke prevention behaviors than baseline and these scores were higher than those for the control group (p-value<0.05). The overall showed that an experimental group had higher mean scores for health literacy, and liver fluke prevention behaviors (Mean difference = 6.62, 95% CI = 4.92 to 8.33, P-value<0.001) at posttest and follow up more than baseline (p-value<0.05).

To conclude, a school-based health literacy on Digital health literacy intervention is more effective than a regular educational program improving prevention of the liver fluke among secondary school students.

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#75 Diabetes and Self-management. How can you communicate effectively with diabetes patients with low levels of health literacy and support selfmanagement?

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Background: Many immigrant patients have a low level of health literacy: they have difficulties in obtaining health information and to understand and apply it correctly. Therefore they are at greater risk

of poorer health outcomes, like diabetes. They also face problems taking medicines, insulin, correctly. People with low levels of literacy do not have the skills needed to find health information and to understand and use it, like reading, writing and calculating. They also have problems to understand healthcare professionals, or to correctly follow up the advice that is given. In the Netherlands 29% of the Dutch population has (very) limited health literacy skills. The prevalence of type 2 diabetes (older then 25 years) is 12.4% of low literate people (only primary school) compared to 1.9% of people educated at university level. To tackle this communication problem, the healthcare professional should adjust his or her communication and is encouraged to use visual materials. Therefore Pharos started this project, specially for diabetes patients who have a low level of health literacy.

Methods: Firstly we started with an analysis of among GP's or other healthcare professionals into what information is essential for the patient. Secondly, we asked people with low literacy themselves what they think of the material about diabetes. Based on these analyses, Pharos, together with other organizations developed a handbook for patients with simple visual and textual diabetes information. This material supports the information given by the GP or healthcare professionals during the consultation. This visual and textual health information is extensively pretested among all target groups (illiterates and GP). The handbook belongs to the diabetes patient. So it is accessible whenever the patient wants, also for the family.

The handbook has three parts;

- 1. What is diabetes? About the disease and the body
- 2. What can I do? About self-care.
- 3. Which health care professionals care for me and my diabetes?

Pharos also developed for healthcare professionals a guideline how to use this handbook and an education how they can support their patients with chronic diseases, in self-management skills.

Results: A handbook with understandable diabetes information for the patient with low level of literacy, a practical guide for the health professional how to use the handbook and an

education for the health professional how to support patients in developing their self-care skills.

Expected Conclusion/ implications: The patient understands better what is happening in his body, about the disease or why he has to take his medicine correctly. The patient has improved his own self management skills and understand better than before what diabetes is all about. The GPs and other healthcare professionals are educated how they can support the patient in self management skills.

#76 Evaluation of a Mixed-Methods Health Literacy Intervention with Multiethnic Disadvantaged Women in the Middle East.

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Background: For many women in low socioeconomic status (SES) communities, limited health literacy (HL) is an obstacle to medical guidance adherence and health behavior engagement. Focus group participants from low SES communities in our region identified communication challenges at doctors' visits as the primary HL issue. This current HL intervention was initiated, designed and tailored to the participants' needs and preferences as to increase patient-doctor communication skills, doctor visit satisfaction, and patient-doctor interaction selfefficacy.

Objectives: To evaluate a mixed-methods HL intervention with multi-ethnic women from low SES communities, and to increase patient-doctor communication skills, doctor visit satisfaction, and patient-doctor interaction self-efficacy.

Methods: A HL intervention tailored to the participants' preferences was designed which consisted of three workshops conducted in municipality-sponsored women's groups in low SES Jerusalem communities. The workshop used

mixed methods, was interactive, and included visual aids, lectures, role-play, group discussions and activities to adapt the material to low literacy participants. Questionnaires assessing perceived efficacy in patient-physician interaction (PEPPI), and self-report of behaviors in preparations for a doctor's visit were completed before and three months after the intervention.

Results: 407 women (age range 53-85) with low education levels (68.6% had no matriculation) completed questionnaires. Pre workshop, 25% of the women were uncertain of questions to ask the doctor, and 28% were not confident about understanding their blood test results. Post workshop, the percentage of women that reported preparing for doctors' visits increased from 55% to 83% (p<0.001). More women reported preparing for doctor's visits with lists of: questions (28% to 67%, p<0.001), medications (19% to 44%, p<0.05), and symptoms (14% to 34%, p<0.01). Additionally women felt confident about understanding their blood test results (p<0.001). We also saw an increase in the overall PEPPI score among the women who reported initial low PEPPI scores (p<0.05), and an increase in overall doctor visit satisfaction among women with initial low satisfaction (p<0.01).

Discussion: This study describes a HL workshop among disadvantaged women that was developed as a response to a need identified in this population by focus groups exploring barriers to health. The three session workshop led to self-reported change in participants' behavior; there were statistically significant increases in most preparation behaviours before visiting a doctor, including a higher percentage of participants reporting they prepared lists of questions, medications, and symptoms. When examining self-efficacy and satisfaction of doctor's visits, this study found that among those who initially reported low SE and low satisfaction there was an increase in both constructs post intervention. This is one of the first programs based in the community that led to reported changes in behavior in the health care setting. Providing community-based interventions to improve health literacy and self-efficacy may lead to improved health care utilization prior to the development of chronic illness, and encourage health maintenance and appropriate health care utilization in

populations who are reluctant to engage with the health care system.

#77 Refusals to travel, patient empowerment and documentation improvement in the National Ambulance Service:
A Quality Improvement Project.

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Background: A recognised component of modern ambulance work is that a patient has the right to refuse treatment and or transport (RTT). According to international evidence patients not transported to hospital are twice as likely to result in death than patients discharged from an emergency department.

The National Ambulance Service (NAS) Medical Directorate has a guidance document to ensure that these persons are dealt with in a consistent manner. The national rate of RTT increased from below 8% in 2012-2014, to 11.3% of calls (24,735) in 2017. An increase in serious patient incidents was also noted. Subsequent investigations suggested that there was a failure to record relevant clinical information.

A quality improvement project was initiated to facilitate a better patient decision making process. It was hoped by improving the quality of clinical information provided to a patient that the patient would be able to make a more informed decision regarding their refusal of treatment.

Except for a trial Community paramedic scheme, NAS staff are only allowed to transport a patient to an Emergency Department and do not have the organizational permission or scope of practice to organize alternative care arrangements.

Aim: We hoped to empower patients to participate in a shared decision-making process by improving the quality of documentation from 63.5% to 90% of required clinical information* (As dictated by the medical directorate guidance document) in Mallow Ambulance Base for all patients that engaged with

and subsequently refused to travel to hospital with the National Ambulance Service by 29th July 2018.

Methods: To establish a baseline, a retrospective analysis was conducted on a randomised selection of both paper and electronic Patient Care Reports (PCR) from across the country, on RTT calls closed between 1st Jan 2017 and 9th Nov 2017.

An analysis of call types, response classifications and the hour calls closed was carried out to determine if there were any relevant patterns.

Staff were engaged on how to achieve the stated aim through semi- structured interviews and focus group type interactions.

Three tests of changes using Plan-Do-Study-Act cycles were undertaken including:

1) education sessions, 2) an aide-memoire and 3) a pilot refusal to treatment/travel form.

A further sequential review took place of all refusals-to-travel dealt with by Mallow staff from 29 April to 29 July 2018.

A risk analysis quantified the possible cost of litigation to the Ambulance Service per year.

Patients who gave written permission were followed up with a semi-structured phone interview.

Results: The top three dispatch classification that resulted in RTT were falls, unconsciousness or near fainting, and generally unwell patients.

It was noted that the time at which RTT calls occurred peaked nationally between 2000 and 2059h. In the Southern area, peak RTT occurred between 2000-2059h and 0000-0100h.

33.6% of RTT calls in the Southern Area were designated as the second highest acuity requiring an advanced life support and blue light response (Delta level acuity).

Anecdotally staff were stepping outside of protocols and attempting to make alternative treatment arrangements for patients.

The quality of clinical information collected and recorded was improved from an average of 63.2% to 83.4% of required information.

Discussion: In addition to the planned quality improvement initiatives, several confounding factors occurred including the introduction of an electronic PCR and an organisation wide audit of RTT documentation.

The peak close of RTT calls between 2000-2059h may align with a shift changeover at 2000h.

Although the NAS specifically utilises a risk adverse triage system, an examination of dispatch priorities may be warranted.

The NAS is rarely the subject of litigation but given an anecdotally more litigious society and the fact that the clinical information recorded by NAS staff often did not meet the clinical guidance document requirements. A robust defence of any tort claims arising from non-conveyance of a patient to hospital would be made much more difficult. The estimated annual litigation risk was calculated at €10,635,975.

Just because information is recorded, it is difficult to determine what information is given to a patient to facilitate a shared decision-making model.

Conclusion: The quality of Clinical information recorded for patients who Refused Treatment or Travel was improved in Mallow NAS Ambulance Base.

Although patient reports were positive, we had limited success in determining if our project had helped improve patient experience.

Alternative care pathways may need to be further developed to support staff and provide a more patient centred service.

Enhanced mechanisms of patient and staff engagement combined with an education program could bring about further and more widespread improvements.

#79 "What does food literacy and nutrition literacy mean?": updating results obtained through a scoping review.

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The topic of food literacy (FL) is derived from the concept of health literacy (HL) that is widely defined in the literature (Sørensen et al., 2012). To date, a comprehensive definition of FL is lacking. In addition, the boundaries between the constructs of FL and nutrition literacy (NL) remain unclear; so that a comprehensive definition of this dimension of health is necessary. A scoping review was conducted to shed light on the meaning of FL and NL.

We explored the material found in six databases (Medline, Web of Science, Embase, Cochrane, Health Evidence, Trip database), as well as in the grey literature, using the following search terms: 'food literacy' and 'nutrition literacy'. 42 definitions of FL and 17 definitions of NL were identified, then translated in Italian language and compared. The results were analysed by considering the geographical origin of the articles; the counting quotes of definitions; and the presence/evaluation of the three components of health literacy -functional, interactive, criticalpotentially affecting each definition, basing the methodological approach on methods proposed by Krause et al., (Krause et al., 2016). Topics and themes belonging to the three components were identified and collected for each definition of FL and NL. Considering our results, the definition of Vidgen & Gallegos (2014) (Vidgen & Gallegos, 2014) and the definition provided by Silk et al. (2008) (Silk et al., 2008) were the most cited in the literature for FL and NL respectively. Vidgen & Gallegos proposed one of the most relevant and complete definition of FL, in fact all the three forms of literacy were included. Differently, in the definition of Silk et al. only the functional NL was included. In the literature explored Guttersrud et al. (2013) (Guttersrud et al., 2013) proposed one of the few definitions of NL in which components of functional, interactive and critical were considered. Several themes belonging to the three components of Nutbeam's model (Nutbeam 2000; 2008) traced in the definitions of FL and NL showed that the two concepts are partially overlapped. Nevertheless, some of the identified topics were related only to the concept of FL, which is a wider concept than NL. Even more, analysing the critical component of some definitions of FL we realized that this component and the concept of food sustainability are deeply connected: decisions made by aware people could guarantee a more sustainable food system.

Basing on these preliminary results, we are conducting a systematic review with the aim to identify and analyse the determinants and consequences of FL and NL in order to develop and propose to the scientific community a comprehensive conceptual framework of the topic. The electronic databases listed above were explored again considering the following search string: "food literacy" OR ("nutrition literacy" OR "nutritional literacy"). Regarding the inclusion

criteria, the articles published in English language and in peer-reviewed journals have been considered, as long as they present a definition of FL or NL, or whenever they deal with the antecedents or consequences of both dimensions of health, or whether they specify aspects of food sustainability.

We obtained and analysed N=349 items and considering exclusion criteria N=119 items were included. Data analysis is in progress, items are currently under review.

The work carrying on will let us deeply understand how FL and NL have been conceptualized and what is the relation between FL and NL. At the end, we could be able to describe "what food literacy and nutrition literacy mean" within an integrated theoretical framework.

#80 Making organizations fit for diversity: Implementing the Organizational Health Literacy Responsiveness Framework in noncommunicable disease rehabilitation services.

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Background. Health literacy is defined by individual knowledge, motivation and competence, but is also the dynamic result of an individual's interaction with health care providers and a complex and demanding health system. Health literacy responsive organizations make it easier for people to navigate, understand, and use information and services to take care of their health.

Objective. We aim to investigate the development of a comprehensive strategy on organizational health literacy responsiveness in a municipal rehabilitation unit in Denmark.

Methods. 'The Organizational Health Literacy Responsiveness Framework' (Org-HLR) describes health literacy responsive organizations within seven domains. During three workshops, we used the appertaining guide and tools to allow staff and management within the rehabilitation unit to reflect upon (organisational) health literacy, self-assess their organisational health literacy responsiveness,

and develop and prioritize ideas for organizational health literacy improvements.

Results. Our results confirm the Org-HLR's ability in an easy implementable way to guide the development of a context-sensitive, multi-level, long-term action plan with realistic goals for improvements in organizational health literacy responsiveness. The bottom-up approach and cocreational strategy supported ownership and motivation among staff and management, which may have increased the likelihood of successful implementation of the action plan.

Discussion. In working towards more equitable services, organizations need to develop and apply many diverse, coordinated, and locally adapted strategies. This study confirms the suitability of the Org-HLR framework approach to guide these developments. The Org-HLR process propels a cultural change integrating health literacy in reflections and service implementation at staff level and supports the staff understanding and ownership of new initiatives regarding organizational health literacy.

#81 Maternal Health Literacy in Women Attending Antenatal Clinics in Greater Beirut.

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Background: Individuals with low health literacy face difficulties in comprehending information and are less likely to be involved in decision-making related to their care. illiteracy is associated with poor reported and perceived health, higher risk of disability and hospitalization and inadequate use of health Health illiteracy also influences services. communication dynamics between health care providers and patients, creating challenges in the interpersonal aspect of care whereby care users do not feel listened to and cannot easily understand what is being communicated by health care providers. Various measurement tools have been developed to assess health literacy among adults; however very few were used in the Arab world. Two widely used health literacy scales, the

REALM-R and the S-TOFHLA, were lately validated in Lebanon. Their application however, is not suitable for assessing health literacy needs of women during pregnancy; being basically word recognition or reading comprehension and numeracy tests they do not reflect concepts necessary for understanding of maternal health literacy. There are limited number of studies that looked into maternal health literacy which is defined as the ability of women to access. understand and use information in ways that promote their health as well as the health of their children. The Maternal Health Literacy Scale (MaHeLi) is a 12-item scale assessing the appraisal of health information (AHI) aspect and the competence and coping skills (CCS) aspect of maternal health literacy. It was developed based on the Health Belief Model and the Integrated Model of Health Literacy, thus combining the main factors that impact health literacy as well as pathways that link health literacy to health outcomes. Although the MaHeLi is a standardized tool, it has not been applied in any Arab country till date.

Aims and Expected contribution: The emphasis put on woman-centeredness in health care delivery has highlighted the importance of health literacy in promoting women's involvement in health care. Antenatal care is believed to ensure positive pregnancy outcomes as the interaction of women with health care providers over nine months creates multiple opportunities to identify and manage health problems. Often, technical aspects of antenatal care take precedence over counseling and health education given to women and the busy clinic schedules reduce time allocated to face-toface interactions between women and health care providers. This situation creates challenges for women with limited health literacy as well as for health care providers who need to learn how to tailor health information to specific needs of women.

In Lebanon and specifically in urban areas, antenatal care coverage is almost universal. There is, however, wide variation in the quality of care delivered to women especially considering the lack of national standards guiding practices. Antenatal education is provided periodically in few hospitals in Beirut; however these are not based on a detailed understanding of women's health literacy levels. This study examines maternal health literacy and

the relationship of health literacy with women's

socio-economic status and their health care seeking behavior in a population of women attending selected antenatal clinics in Beirut.

Methods: Maternal health literacy was measured by the Maternal Health Literacy Scale (MaHeLi) that consists of 12 items with 6 response categories. Seven of the scale items relate to women's appraisal of health information and five items relate to competence and coping skills. The scale was translated to Arabic by one of the researchers and back translated by another. Three focus group discussions were conducted in three antenatal care clinics based in hospitals in Beirut. A facilitydriven convenience sample of women was approached to participate in focus group discussions. The interview guide used served to check on comprehension, relevance and context specificity of items in the MaHeLi scale. To test for construct validity, the MaHeLi which is composed of 12 items was administered to a sample of 143 pregnant women presenting at antenatal clinics in selected hospitals. A survey then was conducted with a sample of 384 women recruited between May and August 2018, from the same antenatal clinics. Survey questions inquired about 1) sociodemographic information of women including age, parity, education, occupation and, education and occupation of husband; 2) health care seeking behavior including number of antenatal visits, first antenatal visit, uptake of - or intention to uptake pregnancy tests (for the current pregnancy and previous pregnancies within the last 5 years); 3) self-perceived health status: 4) Pattern of communication with health care providers during antenatal visits; 5) Maternal health literacy (MaHeLi scale).

Results: Findings from focus groups discussions indicated to a high level of comprehension of statements used in the MaHeLi scale and to the relevance of the concepts to women's personal and social realities. The internal consistency reliability coefficient for this scale in Arabic was found to be 0.836. Preliminary analysis of the level of literacy as measured by MaHeLi among women seeking antenatal care was found to average to 55.33 points with the scale ranging from 32 to 72 points. As a first attempt in assessing maternal health literacy in Lebanon, findings of this study will inform communication efforts in antenatal care and help tailor health education messages to specific groups

of women. Further analysis is currently being conducted to explore differences of Maternal Health Literacy scores by categories of socioeconomic levels, health care seeking behavior, communication patterns and perceived health status.

Conclusion: This study will provide insight into the process through which women access information and use it to promote their health during pregnancy. This issue is of great international interest because of its relevance to clinical practices. Findings of this study can be used to design targeted communication strategies taking into consideration the specific socio-demographic characteristics of the pregnant population. It will also inform the antenatal care package and the on-going communication dynamics during antenatal visits with the aim of improving quality of antenatal care. Targeted communication promotes women's access to relevant health information which in turn can enhance their decision making ability regarding issues related to their maternal health. The validated MaHeLi scale in Arabic can be used in future studies in other Arab countries.

#82 The association between Health Literacy, eHealth Literacy and health indicators in a multi-ethnic population.

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Background: Heath literacy and eHealth literacy are skills that enable individuals to seek, understand and use information in ways that promote and maintain health. These two types of health literacies require different skills in order to attain the benefits for health. The present study examined three different population groups in an Israeli multicultural sample: the majority Jewish population, an immigrant population from the former Soviet Union (fSU) and Palestinian Citizens of Israel (PCI).

Immigration is a life event that places individuals at a relative disadvantage that may be more associated with health literacy than eHealth literacy. Immigrants' health literacy may be hampered by communication and interactive skills

whereas eHealth literacy occurs in a virtual domain that may overcome these barriers, especially if some of the information is sought and appraised in a language of choice, rather than in the language of the host country. PCIs are economically disadvantaged in education and SES relative to Israeli Jews which may place them in an inferior place compared to the majority Jewish population. The current study examined levels of health literacy and eHealth literacy in the three population groups, in order to calculate the association between both types of health literacy and analyze this association for each population group. In addition, the study examined whether those with higher levels of health literacy and eHealth literacy show gains in health behaviors, health care utilization, perceived health and perceived outcomes of Internet search after controlling for background variables.

Methods: Participants included 819 Israeli men and responded to a nationally women who representative random-digital-dial telephone survey in 2014. Respondents were Israeli Jews, immigrants from the fSU, and Palestinian Citizens of Israel. Health literacy was assessed using the European Health literacy Scale (HLS-EU) and eHealth literacy was assessed by the eHEALS tool. The survey also measured Internet use – frequency, experience, Web 1.0 generic consumption and health-related activities and Web 2.0 production activities, content evaluation and potential health benefits: perceived outcomes of Internet use for health purposes, use of healthcare services and Self Health Sociodemographic (SRH). information (age, gender, education, ethnicity, country of birth, and the existence of chronic conditions) was also collected.

Results: Significant differences in health literacy between the groups were observed (M=2.87 for fSU immigrants as compared to M=3.25 and M=3.26 for Israeli Jews and PCI), especially in higher ordered skills, appraising/applying, so that the immigrant group was the lowest (M=2.71 for fSU immigrants as compared to M=3.30 and M=3.33 for Israeli Jews and PCI). This was true also after accounting for demographic variables. No significant group differences were found in eHealth literacy between the three populations (M=3.34, M=3.31 and M=3.46 for fSU immigrants, Israeli Jews and PCI respectively). Health Literacy and eHealth literacy were associated in two of the

three population groups. In the total population the correlation was r=0.39(p<0.0001), among Israeli Jews it was r=0.40, (p<0.001) and for immigrants from the fSU it was r=0.44, (p=0.008) but not among PCI (r=0.22, p=0.106).

Health literacy was found to be associated with most health outcomes (r=0.07, 0.12 and 0.33, P's<.05 for healthcare utilization, perceived Internet search outcomes and SRH respectively, but not with health behaviors). Whereas eHealth literacy was associated only with SRH and perceived outcomes of Internet search (r=0.13, and 0.40, P's<.05, respectively). Lastly, multivariate hierarchical linear regressions with healthcare utilization, SRH and perceived outcomes of Internet search as the dependent variables were conducted, with socioeconomic variables and the health literacies as the independent variables. Socioeconomic variables were included in the first step (age, gender, education and population group) and health literacy and eHealth literacy were included in the second step. Health Literacies contributed to the association with SRH (additional 16.1% explained variance) and perceived outcomes of Internet search (additional 17.1% explained the variance with eHealth literacy as the significant predictor) but not to the association with healthcare utilization. No interaction was found between group and the two types of health literacies in the association with the outcomes.

Conclusions: Immigration may indeed lead to lower levels of perceived health literacy compared to the veteran population, as knowledge and fluency in the native language, essential for social interactions, may be lower than in the majority population. However, this may not affect the level of eHealth literacy, as the immigrant's mother tongue may serve as the language of reference, thus ameliorating the difficulties. Lack of perceived differences in literacies between majority and minority groups is encouraging and performance data on these literacies can strengthen the finding.

#83 E-Health for women: a web tool designed to inform women of individualized health recommendations.

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Background/Objectives: Many women do not monitor their cardiovascular disease risk or receive regular medical screenings. Focus groups conducted with women from different sectors identified a common need for personalized health maintenance recommendations that they can request from their doctor. We previously described an e-health tool that provides women with personalized screenings and check-up information may improve women's engagement in recommended screenings and positive health behaviors. This study characterised utilization of the tool in a real-world setting.

Methods: An e-health tool was designed and launched, providing women with profiled, individually tailored information about recommended tests, screening, and medical checkups. This tool provides women with genderspecific output indicating the recommended frequency of medical tests, screenings, vaccines, and medical check-ups, in addition to physical activity (PA) and nutrition recommendations, according to each user's age, BMI, and family history of heart disease.

Results: The app was launched via a social media campaign. In the first 3 months, the app was used by 11,341 women, average age of 52.7 (SD 10.2, range 20-86), average BMI 27.1 (SD 4.9). Of these, 16.5% smoke, and 47.8% have family history of heart disease. The users spent an average of 2.7 minutes in the web tool, 76% of them got to the results section. Most users entered the nutrition, risk factor, and PA tabs (70% 61%, and 55% respectively). 19.6% of users printed or emailed themselves their personalized recommendations. In focus groups of women ages 30-75 all participants stated that navigating the tool was simple; recommendations were clear and tangible; 80% thought that the information obtained was important, some of it new. Of the participants, 100% gave the tool a mark of "very good" or "excellent" and indicated that they would forward it to their friends.

Discussion: A web tool that provides user-friendly personalized health information has been developed and launched. This tool meets an identified need in the population and may improve access to personalized recommendations for health screening and health behaviours. Users are actively participating and looking at health recommendations on a variety of health topics, a fifth printing or emailing themselves the personalized recommendations. Learning about user's profile and web tool usage characteristics can help continue tailored improvement.

#84 Promoting education, empowerment and participation in health from a University center.

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Background: The eHealth Center UOC (Universitat Oberta de Catalunya) is an academic centre open to the world whose goal is to educate and empower professionals and ordinary citizens, through the use of technologies, to lead the paradigm shift in health. It focuses on people, through research, education and guidance, to contribute to the progress and wellbeing of society.

All the activities at the eHealth Center UOC are aimed to generate and transfer people-focused knowledge on e-Health, through participative research and innovation, lifelong learning and services of support and guidance in the development of digital health projects, including education in health and digital skills as basic foundations to empower people with respect to their active participation in health and wellbeing. The four knowledge areas at the institution are:

- Education, empowerment and participation in health
- Design and assessment of eHealth projects
- Health data science
- eHealth and equity

The Center was created on 2017 over a solid base of research and academic initiatives within the University.

Objectives: The area of knowledge of Education, Empowerment and Participation in Health seeks to strengthen and empower health professionals and the general public with respect to disease prevention and also to foster healthy living habits, with the goal of playing a more active, participative role in issues related with individual and community health and wellbeing.

Methods: All the projects are developed under open and participatory innovation principles, using techniques of Human-centered design as a creative approach to the generation of useful solutions in a process that always stars with the people that will be using them. This methodology is basically about building deep empathy links with the people involved in each project, generate with them ideas for possible solutions, testing some of them on prototypes, learning by doing, improving the solutions and support the deployment of the ideas that are working.

The process consists of three phases: Inspiration, Ideation and Implementation that comprise different interventions and tools to spark the creativity and involve the stakeholders as protagonists in the development of the solutions. The extent of their involvement can range depending on the project and we intentionally try to shift towards actively sharing roles and responsibilities in the development teams.

These teams are trans-disciplinary in their composition, including members and representatives of patients association, research teams, health professionals, professors of University Studies and Private companies of the sector, as well as other stakeholders with interests in the specific initiative.

Results: As a specific example of the projects developed under this area of the eHealth Center UOC, our team has contributed to the design and development of a collaborative initiative COMJunts (Together) project, addressing the challenge of bringing health information closer to families and providing useful digital health solutions in the context of rare diseases.

The project was designed with a participatory and inclusive approach based in the active collaboration of the families with children affected by a rare disease, made possible thanks to FEDER (Spanish Federation on Rare Diseases), where hundreds of civic associations on rare diseases are represented as members, working for the support of the affected families. The research team combined doctors in specialities of Linguistics, Psychology, Medicine, English Language Processing. Philology, Documentation Studies, Social Action and Communication of different Universities and FEDER.

One of the practical results of the project is the design and publication of the mobile app COMjunts, a free, simple to use and intuitive app with different levels of information that helps families with children affected by a rare disease to travel through the main communicative situations in their patient journeys with health professionals.

One of the innovative aspects introduced in the project and the materials generated, lies on the focus adopted to highlight the importance of language when we are speaking about health, as the way to empower the families to obtain a successful communication with their health professionals and improve the attention and special needs of follow up in this type of diseases with a low prevalence.

The framework of COMJunts application identifies 6 challenges that invite families to situate themselves in common situations when interacting with health professionals and provide them with some resources to overcome the communication barriers they could face in that specific situation. The challenges correspond with different moments of the patient journey as the day that the family receives the diagnosis when they have to prepare a visit to the specialist, when they get a medical report or when they have to undergo through a clinical exploration or medical test.

Discussion: The UOC eHealth Center is functioning as an innovation trigger amongst the research and innovation community of the Universitat Oberta de Catalunya and other national e international organizations. Besides the Area of Education, Empowerment and Participation in

Health, with a research line that specifically addresses the topic of "health literacy and eHealth literacy" the other areas of knowledge at the institution are focused in the Design and Assessment of Interventions in eHealth, Health Data Science and eHealth and Equity, completing the four basic pillars of the model on digital health defined by a multi-stakeholder approach in the foundation of the UOC eHealth Center.

The intervention presented as an example in the COMjunts project may be directly linked to different topics of the Congress Themes, as the "People-centered Health and Health Literacy" (given that the project starts from real situations faced by the families in the rare diseases consultations, and approaches the solution by improving the information available to these families), or the "Patient safety, accessibility, informed decision-making, adherence" topic (because the objective of the app is to increase the communicative skills of the families, provide help with their possible language barriers and improve the relationship with the health professionals)

COMjunts app was presented to the public on September 6th, 2018 and although still is too soon to evaluate its impact, we expect to keep evolving this and other initiatives to significantly contribute from the eHealth Center UOC in the process of building health literate societies.

#85 A qualitative study of user experience of My PAL: a physical health passport for mental health service users.

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Background: Individuals with a severe mental illness (SMI) are currently experiencing a reduced gap in life expectancy of between 20-30 years when compared with the general population (De Hert at al. 2011). This marginalised gap in life expectancy is primarily due to preventable conditions.

Individuals with SMI often have difficulties interpreting the signs of physical ill health. When individuals with SMI do attend GP's they are not taken seriously and often experience 'diagnostic overshadowing'. Individuals with SMI are less likely to be offered routine physical health checks by GPs when compared with the general population. Some individuals with SMI only attend their mental health service and merely attend their GP to have their prescribed psychiatric medication placed on a General Medical Scheme (GMS) script. Individuals with SMI also have 'poor health literacy' (Hemmingway et al. 2015). Individuals with SMI have most contact with Mental Health Nurses (MHNs) as they are largest profession working within the mental health services. However MHN's lack knowledge and confidence in physical health care.

My Physical Achievement Log (PAL) is a tool that was developed to assist MHNs in promoting physical health care of individuals with SMI. My PAL is a service user held tool that contains a check list of all the physical health checks individuals should be having at least annually. My PAL is a service user held tool aimed to empower individuals with the knowledge and skill to take ownership of their physical healthcare. My PAL comes accompanied with an information booklet that is Plain English approved by the National Adult Literacy Agency. This booklet was uniquely developed for individuals who are attending the mental health service.

Objectives: To explore the experiences of both mental health nurses and service users in the use of My PAL in order to identify best practice and possible barriers to its implementation.

Methods: This research uses a qualitative approach to explore the experience of mental health nurses and service users regarding use of MyPAL, via semi structured interviews with a purposive sample of up to twenty participants (10= nurse participants, n=10 service user participants). Participants will be people who have had direct experience with the tool. A thematic analysis of these transcripts will then be applied to extract themes across data sets.

Results: This project is currently underway and completion date for this project is estimated to be March 2019.

#86 Health literacy among African HIVinfected migrants in Denmark: The development of a targeted complex intervention.

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Background: Improvements in treatment in both high and low-income countries have led to a nearexpectancy for HIV-infected normal life individuals. Several studies have reported lower treatment adherence and low retention to HIV care among migrant populations, and these differences reflect disparities across social and cultural lines. Insufficient cultural competence and understanding language barriers among healthcare professionals is known to constitute challenges for patient involvement and patient safety among ethnic minorities and may thus result in significantly poorer treatment quality.

We conducted a qualitative study to explore if there were culturally specific reasons for missed appointments and/or non-adherence to treatment among African HIV-infected migrants in Denmark. The participants experienced that HIV diagnosis was accompanied with complex life situations, and they were facing several barriers and facilitators to adherence to medical treatments and retention to care. Five themes emerged from the qualitative analysis: 1. Traumatic suffering, 2. Religion, 3.HIV-related stigma, 4. Loneliness and lack of support from family and friends and 5. Competing problems. Based on existing evidence and the identified barriers, the current study aimed to develop a culturally targeted intervention to increase adherence and HIV-health literacy in African HIV-infected migrants.

Methods: The Behavior Change Wheel (BCW) and the Capacity, Opportunity, Motivation and Behavior (COM-B) model, provided a theoretical framework for development of a complex intervention to increase adherence and retention to care. The intervention was developed based on a literature review and experiences from a Migrant Health Clinic in Denmark. By recognizing the behavior as an interacting system, we identified that the intervention needs to change one or more of the COM-B. We therefore involved the 15 African HIV-positive migrants from the qualitative study and conducted a focus group interviews with 6 healthcare providers from the HIV-clinic.

Results: Results revealed that there is a need for targeted treatments among regular HIV treatment programs for migrants in Denmark.

The developed intervention starts by training healthcare providers in cultural competences and how to make an approach were patient's narratives and life stories are used to uncover problems and to initiate necessary actions and arrangements. Three sessions with the patient will be accomplished. Furthermore, the five identified themes from the interviews will be in focus together with patients own history of life. The healthcare providers have to clarify the need for extra care, options for text messages or phone calls.

Thirty African HIV-infected migrants will be invited to participate in the developed intervention at two Department of Infectious Diseases in Denmark.

Timeline is 1 year. To evaluate the intervention, participants will have to fill in a questionnaire at baseline and at the end of the intervention. The questionnaire will include data on: demographics, adherence (AIDS Clinical Trial Group ACTG), knowledge HIV-related (HIV Treatment Knowledge Scale), health literacy (3 subscales from Health Literacy Questionnaire HLQ) and depression (Patient Health Questionnaire PHQ2). Filling in the questionnaire will be done by face-toface interview, as a previous study in the clinic has shown that participants needed help reading and filling in questionnaires. Outcomes: Primary outcome is undetectable viral load, increased adherence, health literacy and retention to care. Secondary outcome is the ability to take care of own health.

Conclusion: To advance the care offered to migrants diagnosed with HIV, we developed a culturally targeted intervention. We intended to improve adherence and health literacy among HIV- positive migrants having problems with adherence and retention to care, by using BMW and COM-B. Next step is to pilot test the intervention at the Department of Infectious Diseases at Odense and Aarhus University Hospital from January 2019 to January 2020.

#88 An experience in promoting digital health literacy: PYDESALUD.

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Background: Nowadays, the number of websites offering health information has increased. Out of that growing number of websites, a smaller percentage are related to patient participation, shared decision-making and research needs. Parallel to this, there is a growing interest of citizens to access quality health information. In response to that, the website with health related contents www.pydesalud.com was created.

This web portal is a platform (open and free) in Spanish of integrated services to promote knowledge, autonomy and active participation of people about their health problems. This website is organized into modules and lines of work that aim to identify the issues and problems that concern the population when they face some chronic diseases, providing patients and their families with relevant, culturally appropriate and complete information about those aspects that are most important to them. The information on this website has the HONCode quality certifications that accredits it as a reliable website to offer health information.

AIM: Present the open and free platform of integrated services: www.pydesalud.com, which promotes digital health literacy and the active participation of people suffering from chronic diseases.

Methods: The development of the contents of PyDeSalud has been done with the support of all the actors involved in health, disease and its care: patients and family members, health professionals, researchers and managers. Content creation has been done by identifying issues and problems that concern the population when they are ill. The information is collected through review of scientific literature and with the direct participation of patients through in-depth interviews that reflect the care experiences. In addition, the website includes tools for decision-making that have been validated in randomized controlled trials.

Results: There are 3 different modules: 1) Patient experiences; 2) Aid tools for shared decision making; and 3) Research needs and priorities from the perspective of patients, are some of the aspects that differentiate Pydesalud from other websites with health content

This website so far has eight modules of diseases (knee osteoarthritis, hip osteoarthritis, colorectal cancer, breast cancer, depression, diabetes, systemic lupus erythematosus, and sarcoidosis) with shared decision making aid for some diseases (breast cancer, depression, osteoarthritis). Pydesalud is being constantly updated to expand content and support resources for patients

#89 Functional and perceived health literacy in diabetic patients.

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Background and Objective: Health literacy (HL) in chronic diseases with complex treatments is essential to ensure a good self-care. The main objective of this work is to measure HL in diabetic patients and their caregivers, and to analyze its relationship with different sociodemographic factors and its influence on the perceived quality of life and disease control.

Methods: Cross-sectional study interviewing diabetic patients and their caregivers to measure health literacy using the Newest Vital Sign (NVS) and the Health Literacy Survey Questionnaire (HLS-Q16).

Results and Discussion: the mean score of HL obtained with the NVS in the 95 participants of the study was 4.47 ± 1.46 , and with the HLS-Q16 was 11.94 ± 2.46 . The percentage of participants with an adequate HL was 67% according to the NVS and

43.8% using the HLS-Q16. We have observed that age influences negatively on HL and the level of studies positively. An 80% of the participants admitted having a quality of life and a diabetes control good or very good, factors that also correlate positively with the HL. No significant correlation was found between the two measurement instruments.

#90 Health literacy and knowledge about acetaminophen of the elderly in the southeast of Spain.

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Background: Low health literacy (HL) has been associated with a poor knowledge about medications, low therapeutic adherence and with a higher toxicity, which is especially worrisome in vulnerable groups, such patients with chronic diseases, the elderly and the polymedicated patients.

Objective: The aims of this study are to measure health literacy in older adults, its relationship with different sociodemographic and health determinants and to evaluate the knowledge that the elderly have about a frequently used medicine such as acetaminophen.

Methods: 70 people over 65 years were interviewed in the Region of Murcia (Spain) using the abbreviated questionnaire of the European Project of Health Literacy HLSEU-Q16 to measure HL and a self-made questionnaire to measure patient's knowledge about acetaminophen.

Results and Discussion: 67.1% of the sample had limited HL. Health literacy and knowledge about acetaminophen were low and associated with education level. Moreover, HL is also associated with perceived health and perceived quality of life. 64.3% of respondents did not identify acetaminophen in commonly used drugs, 87% of these participants did not know the recommended maximum daily dose of acetaminophen, and

approximately half of the respondents did not know that acetaminophen can produce toxicity and adverse effects. Considering these results, it is necessary to adapt the interventions in this population group to ensure better HL and a rational use of the medication.

#91 Health Literacy in people with intellectual disabilities – Do we need a target group adapted health literacy concept?

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Background: People with intellectual disability (ID) are a high-risk group for several diseases. There is also evidence that people with ID experience earlier age-related health problems compared with the general population, for example decreased walking ability. These health problems might better managed with a good health literacy. Health literacy refers to personal and social resources as well as the individual abilities to access, understand, appraise and apply health information to make self-determined decisions about health. However, it is assumed that due to reduced resources, especially people with ID often merely have less skills to acquire knowledge of health related subjects and to appraise and apply health related information. Nevertheless, people with ID have specific health related resources e.g. support from professionals.

Compared to findings from health literacy research for general population or high-risk groups for health problems like diabetes, there is only little information available for people with ID. Building health literate societies has to include strategies and programs to bridge the gap of social and health inequality. The analysis of health literacy concepts in people with ID is necessary to outline health issues in this relevant group and is relevant for systems that have impact on health in this group.

Objective: Several studies have shown that low levels of health literacy are associated with a poor health status. People with ID is a vulnerable group in terms of health with specific health problems and health related resources. The objective is to show

and discuss the state of the art of health literacy research for people with ID. Research questions are: How is health literacy used and discussed for people with ID and what conclusions can be drawn from that?

Methods: This contributions based on a mixed-method-literature-review. From February until July 2018 six bibliographic databases were searched, including PubMed, Scopus, ERIC, CINAHL, PsycINFO, and Web of Science with English search terms. We include all studies that discuss health literacy to people with ID. Articles only mention health literacy without explanation was not taken into account. Included articles were analyzed and coded with a thematically analysis (inductive approach) via scanning definitions, understanding and concept of health literacy used for people with ID.

Results: Overall, 12 articles could be included. Three main categories became evident during the evaluation: barriers for people with ID, promoting the health literacy of people with ID and target group specific health literacy conceptualization.

A total of four articles focus on difficulties or barriers that prevent people with ID from using health-related information to make a selfdetermined health-related decision possible. The cause for these barriers is assumed to be a reduced knowledge of health, a lack of self-advocacy and environmental and attitudinal factors. From a deficit perspective, other articles discuss support for people with ID, for example to improve the communication professionals. of health Furthermore, individual skills of the people with ID like the capacity to read and write, subjective experiences with the health care system, abilities in using health information, and capacity for informed decision-making should be considered. Two studies reports an intervention that uses a training program for people with ID to increase their healthrelated knowledge to strengthen health literacy. Only one author have a focus on conceptualizing health literacy regarding special needs of people with ID.

In general, it is obvious, that most studies that comment on the health literacy level of people with ID assumed that the level of health literacy within this group is very low. None of the studies mentioned a special reference source for this statement. Overall, studies are mainly from the

health professionals' perspective and exceptions directly questioned or focused people with ID. Standard measurement instrument for health literacy in people with ID seems to be inadequate.

Discussion: Health literacy is increasingly seen as a crucial factor in terms of health and health-related outcomes and is considered a requirement for patient participation and empowerment. This is different in the studies that deal with health literacy and people with ID. Here, health literacy is often understood as the competence of health or equated with health-related knowledge. Thus, the concept of health literacy does not go beyond a purely functional understanding in people with ID. Heath literacy therefore does not take the specific living conditions and resources from people with ID into account adequately. A debate about a target group specific Health Literacy concept seems a great opportunity.

Our results confirm that caregivers and health care providers are very important for the dissemination of health-related information. Therefore, the factor communication of health care provider and caregivers must always be considered, but must definitely go beyond this. For this, there is an urgent need for conceptual scientific debates on health literacy that include people with ID themselves, their perspectives, their experiences, perceptions, resources, and social context to include more than literary skills and health related knowledge. Further basic research is needed including the user perspective, otherwise it is not possible to adapt health literacy concepts adequately to this target group or develop valid measurement instruments. Without this, the several times used statement found that health literacy in this group is low, have no informative value.

Above all, it is important to avoid a deficit-oriented, and to adopt it according to the current state of health literacy research including theory of learning, concepts of promoting development, and acquisition of knowledge. Then it might be possible to react with flexibility to individual contexts and subjectively strengthen health literacy. Health Literacy could affect more than positive health outcomes, mainly it could help people with ID to perform in a participative way in health-related decisions and empower a vulnerable group.

#92 Ethnic differences in health literacy among young adults in Amsterdam.

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Background:

Ethnic differences in health commence early in life. Ethnic minority young adults have a greater prevalence of unhealthier lifestyles and poorer health outcomes than their peers. Variations in health literacy could contribute to these ethnic inequalities in health but have not yet been investigated in this group.

Objective: To investigate ethnic differences in performance-based and self-reported health literacy in young adults, and to examine whether these differences are explained by educational level, language difficulties or cultural distance.

Methods: Young adults (18-25 years) from Dutch, African Surinamese, South-Asian Surinamese, Ghanaian, Turkish and Moroccan ethnic backgrounds (n=2.215) participated in a cohort study (HELIUS) in Amsterdam, the Netherlands. Performance-based health literacy was measured by the Rapid Estimate of Adult Literacy in Medicine in Dutch (REALM-D). Self-reported health literacy was measured by the Chew's Set of Screening Questions (SBSQ). Brief association between ethnicity and health literacy, and the role of background characteristics, was assessed by linear regression analyses.

Results: Performance-based health literacy was low (REALM-D<60, range 0-66) among 17% of the participants. After adjustment for educational level, average levels of REALM-D were lower among participants from a Ghanaian, Turkish and Moroccan background than those from a Dutch background, whereas the two Surinamese groups did not differ from the Dutch group. Additional adjustment for language difficulties and cultural distance did not explain the differences between the five minority groups.

Self-reported health literacy was low (SBSQ<3, range 0-4) among 3% of the participants. There

were no differences in levels of SBSQ between the ethnic minority groups and the Dutch group.

Conclusions: We found ethnic differences in performance based health literacy, which largely remained after adjustment for educational level. Further research is needed to gain insight into how young adults from different ethnic groups appraise and apply health information in various contexts.

#93 Communication with low health literate individuals in preconception care: Systematic development and evaluation of a training for health care professionals.

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Introduction: Preconception care is widely recognized to improve pregnancy outcomes, but seems to be less effective among those that need it most: Individuals with a lower socioeconomic status that have the highest risks of adverse perinatal outcomes, such as preterm birth, small for gestational age, low Apgar score, congenital anomalies, and perinatal mortality. Communication with these individuals is challenging, because they often have low health literacy. The general aim of this study was to systematically develop and evaluate a training to improve communication between low health literate clients and health care professionals that provide preconception care in the Netherlands.

Specific objectives were:

- To assess healthcare professionals' awareness, knowledge, attitude and communication skills towards low health literate clients
- To develop and evaluate a training to improve communication between professionals and low health literate clients

Material and methods: In a problem analysis, we performed 14 in-depth interviews with midwives, obstetricians. preventive child healthcare professionals and general practitioners, working in primary and secondary care in deprived neighborhoods and currently providing preconception care in the Netherlands. In addition, we observed 41 consultations among 9 other midwives and preventive child healthcare professionals. After the consultation we assessed clients' health literacy by the Short Assessment of Health Literacy in Dutch (SAHL-D), and examined understanding and satisfaction among low health literate clients (n=28). The observations were analysed by a 12-item checklist that we developed on the basis of current communication guidelines. Each communication strategy (e.g. teach back) was assessed by assigning it a score from 0 to 4, in which 0 corresponds with never/poor, corresponds with average/sufficient and corresponds with always/perfect.

Based on the outcomes of a problem analysis we formulated change objectives and adapted an existing Dutch communication training for health care professionals to the context of preconception counselling. In structured interviews with training participants (n=17) we assessed to what extent they believed the training increased their awareness and communication skills, and explored barriers and facilitators to implement skills into daily practice. The interviews were audio-recorded, transcribed and thematically analysed. In observations (n=84; 3-9 observations per participant) we assessed to what extent skills were implemented in practice, thereby using the same checklist as in the problem analysis.

Results: The problem analysis indicated that awareness of low health literacy was low among professionals that provide preconception care in the Netherlands. Only a few professionals could describe adequate techniques how to communicate with low health literate clients. Observations showed that the least used communication techniques were: retrieving knowledge, outlining an agenda and using the teach-back method. Low health literate clients were satisfied about the consultation and the information they received, however some also reported that they did not fully understand the information that was provided.

The training seemed effective in increasing awareness of the problem of low health literacy and knowledge on communication skills. Participants also felt their skills were improved by the training and that they were more attentive towards problems related to low health literacy. However, observations indicated that skills that were gained during the training were hardly implemented in practice. Most important implementation barriers that were mentioned in interviews were lack of practice and supervision, fear to apply new knowledge and skills, and use of other techniques that were also conceived important communication with low health literate clients. Most important facilitators to implement skills in practice were support of colleagues that also participated in the training or were informed about the problem of low health literacy, building a relationship to decrease fear of applying skills and asking about health literacy related problems, access to visual materials and support at organisational level.

Conclusions and implications: Training of health care professionals is essential for adequate communication with individuals with low health literacy. However, a structural improvement requires specific attention to this subject in professional education, including (re-)training, and supervision in practice. Within the organisation of preconception counselling specific conditions should be created for implementation of adequate communication with low health literate individuals.

#94 Measuring health literacy and assessing progress using HLS-Q12: Empirically identifying and describing cumulative benchmarks for statistically different levels of performance.

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Background: The raised awareness of the importance of health literacy (HL) has drawn attention to measures of HL. Adapting health information to people's HL can promote equity as individuals become proficient in managing their own health. Accessing, processing and applying

health information relevant to avoid injury, stay healthy, and prevent and manage illness are central to make appropriate health decisions, and level of HL is considered adequate when persons bring sufficient knowledge, skills and attitudes to such situations.

The self-reported European Health Literacy Survey Questionnaire (HLS-EU-Q47) is a widely used HL measure. However, there has been some controversy whether the HLS-EU-Q47 is unidimensional and consequently whether a single scale score represents a valid overall measure of HL. Building on this body of corroborating empirical evidence, the sufficiently unidimensional short version HLS-Q12 was developed. This 12-item scale meets the assumptions and the requirements of objective measurement while still reflecting the multidimensional framework scaffolding the HLS-EU-Q47. After its publication, there has been a worldwide call to "set the standards" and interpret the HLS-Q12 scale score.

Objective: The objective of this study is to empirically identify and describe the HLS-Q12 "benchmark cut-off values for statistically different levels of performance" based on a population study in Norway. To ensure quality, we evaluated the empirically derived benchmarks by repeating the analysis in a sample drawn from a population with chronic disease (diabetes type 2). In short, we aim to answer the following research questions:

- 1) Which HLS-Q12 scores define benchmark cutoff values for statistically different levels of performance?
- 2) What does people located at the benchmarks know and can do?

Methods:Sample: The population sample consisted of 900 individuals aged 16 and above. We collected the data using computer-assisted telephone interviews during November 2014. A sample of 388 individuals with type 2 diabetes aged 18 and above responded to a paper-and-pencil version of the instrument during March 2015.

Instrument: The current version of the HLS-Q12 uses a four-point Likert-type response scale anchored with the modified phrases "very difficult" (1), "difficult" (2), "easy" (3) and "very easy" (4). Using four response categories each item has three

"thresholds", where the second threshold value identifies the HL level associated with an equal probability of responding "easy" as "difficult".

Benchmarking: To calibrate the items and estimate the logit measure and standard error corresponding to each observed HLS-Q12 raw score, we applied the partial credit parameterisation (PCM) of the polytomous unidimensional Rasch model available in the RUMM2030 statistical package. To identify the HLS-Q12 statistically different levels of performance, we used joint standard error to estimate confidence intervals' upper bound.

Profiling: To qualitatively describe or indicate the proficiency associated with each level of performance, we located the ordered uncentralised Rasch-Andrich item thresholds along the measurement scale. This made it possible to construct an achievement scale, establish and describe cumulative profiles based on item threshold difficulties and interpretations of item content, and reveal progression in HL as measured by HLS-Q12.

Results: We located three "benchmark cut-off values for statistically different levels of performance" at the HLS-Q12 raw scores of 27, 33 and 39. We confirmed these cut-off values by analysing the dataset from our additional study among people with type 2 diabetes.

By locating the ordered thresholds along the measurement scale, we could identify the minimum HL levels required to ticking off "easy" (3) for each HLS-Q12 item. Interpreting the item content for thresholds anchoring at benchmark 1 (raw score 27), we could indicate what people located close to this score possibly "know and can do" that individuals below cannot.

Discussion: We managed to identify HLS-Q12 benchmark cut-off values (research question 1) and construct an achievement scale based on item content (research question 2). The latter process helped us to develop preliminary HL profiles, which subsequently indicate progress i.e., what it qualitatively means to move from one benchmark to the next. The following section sheds light on what we mean by "profiling".

Say David has a computer and thinks it is "easy" to access information on exercise and healthy foods (cf. HLS-EU-Q47 question 32). When his head aches, he buys painkillers at the grocery store and finds it easy to follow the instructions on the package (Q14). He also finds it easy to assess which daily habits affect his health (O43). Unlike David, Christina feels it's easy to also find information on treatments of illnesses (Q2). We can make this conclusion as only Christina's HLS-Q12 score is above the level required to pass the difficulty of the second threshold of Q2. In contrast to Christina, Beatrice finds it easy to make decisions that could improve her health (Q44), understand information on food packaging (Q38), and she knows what to do in medical emergencies (Q7).

According to our quantitative results, Christina reaches benchmark 1, David is below, and Beatrice almost reaches benchmark 2. Drawing inferences it might be reasonable to claim that Christina has "adequate" HL as she is above the critical level necessary to adequately apply health information relevant to "avoid injury, stay healthy, and prevent and manage illness". If so, we might conclude that benchmark 1 sets the standard for adequate HL.

A vital methodological consequence of our work is the inevitability of Rasch analysis in defining and describing cumulative benchmarks for statistically different HL levels. Our study adds to the discourse on where to set cut-off for adequate HL, and thus has important practical consequences for data-driven and knowledge-based implementations of new health policies. The technique of locating item threshold difficulties along the scale to make progress visible might influence the tailoring of health information to support growth as well as the assessment of growth itself. Replications of our study in other contexts are warranted to unveil sources of potential biases, threats to validity and imprecision of benchmarks.

#95 Improving care for patients with rheumatic diseases, using the Optimising Health Literacy and Access (Ophelia) approach.

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Background: Rheumatic and musculoskeletal diseases (RMDs) are highly prevalent and present a major cause of Disability-Adjusted Life Years (DALYs) worldwide. Globally, all RMDs combined account for 21.3% of the total years lived with disability, second only to mental and behavioral problems (23.2%). When considering both disability and mortality, RMDs account for 6.7% of the total global DALYs, ranking fourth in the global burden of disease. This burden is expected to increase, following population growth and ageing.

In rheumatoid arthritis, a study in Norway showed that older patients and those having received less education receive their initial prescription of costly biologic disease-modifying anti-rheumatic drugs (bDMARDs) later and at higher disease activity levels than younger or higher-educated patients. In a healthcare system where people are presumed to have equal access, this is worrisome; patients with lower socio-economic status apparently experience poorer access to recommended treatment. While health literacy does not directly correlate with socio-economic status, suboptimal health literacy

of these patients possibly accounted for part of the inequality, thereby compromising access to care in people with RMDs.

In the general Dutch population, recent estimates of the prevalence of suboptimal health literacy are as high as 36.4% (as assessed with the Health Literacy Survey-Europe-16 Questions). Therefore, addressing health literacy needs of people with RMDs could offer promising improvements in the delivery of care. Health institutions need to cater to these needs, aiming to improve access to and, ultimately, outcomes of care.

The OPtimising HEalth LIteracy and Access (Ophelia) approach is a way to facilitate this process. This outcomes-focused approach consists of three phases: 1) a quantitative health literacy needs assessment in the patient population; 2) qualitative workshops to develop potential improvement interventions in clinics; and 3) implementation and assessment of the impact of the developed interventions.

Objectives: In this study, we aim to

- 1) Identify health literacy profiles of patients with rheumatoid arthritis (RA), spondyloarthritis (SpA) and gout in three different geographical and clinical environments in the Netherlands.
- 2) Involve patients and health professionals in the co-design of interventions to address these needs in our clinic, using the Ophelia approach

Methods: We are currently conducting a 2-year, multi-centre cross-sectional study in three outpatient clinics in the Netherlands: Maastricht University Medical Centre + (MUMC+, Maastricht), Maasstad Hospital (Rotterdam), and Medisch Spectrum Twente (Enschede). Centres have been selected for their diverse patient populations, in terms of socio-economic status, disease complexity, ethnicity, and area of residence (rural vs urban), to ensure our sample represents the diversity in the wider Dutch population of people with RMDs. The research team includes researchers, clinicians, and patient representatives from all centres.

In total, a stratified sample of 900 patients with RA, SpA and gout are to be recruited in these three centres. Respondents complete the Health Literacy Questionnaire (HLQ), as well as questions on

demographics, self-reported health, comorbidities (using the Rheumatic Disease Comorbidity Index (RDCI)), Sense of Mastery, and healthcare utilisation. The HLQ provides scale scores for nine independent domains of health literacy, reflecting strengths and weaknesses rather than a single composite score. Examples of HLQ scales include "Feeling understood and supported by healthcare providers", and "Actively managing health", with higher scores indicating less difficulty.

To strengthen representation of patients with different health literacy needs in our study, rheumatologists personally invite patients to participate, and a researcher speaks with patients in the waiting room. This way, we can support patients in fully understanding the study and informed consent. Moreover, it enables patients to complete the questionnaire with assistance wherever necessary. Emphasis in patient information is placed on finding out how to improve care, rather than assessing patients' health literacy as such.

Moving forward, HLQ data will be used to generate vignettes of "typical" patients within our patient population. By means of hierarchical cluster analysis, common "health literacy profiles" will surface. By combining these profiles with demographic, socio-economic and health status information, patient vignettes will be developed. We will explore whether patient vignettes can be generalised, or whether centre- and/or diseasespecific vignettes are warranted. The final vignettes will feed co-design workshops with patients and health professionals to engage them in thinking about improvements to the clinic, addressing the needs of patients represented in the vignettes. In the subsequent stages of the project, applicability and feasibility of these proposed improvements will be tested in pilot interventions.

Results: To date, 525 patients from two centres have provided data (data collection ongoing). Data collection for RA (n=133) and SpA (n=106) patients at MUMC+ has been completed. Of the participating RA patients, 97 (73%) were female, mean age was 63.8 (SD 13), mean RDCI was 1.11 (SD 1.3), and 37 (28%) had received primary or basic professional education at most. The participating SpA patients were more often male (n=57 (54%)), mean age was 58.9 (SD 13.2), mean

RDCI was 1.08 (SD 1.2) and 16 (15%) had received primary or basic professional education at most. Out of nine HLQ scales, the lowest mean scores for both RA and SpA were found for "Appraisal of health information" (2.72 (SD 0.42) and 2.65 (SD 0.52) out of 4 respectively). The scales with the highest scores were "Feeling understood and supported by healthcare providers" (3.15 (SD 0.45) and 3.18 (SD 0.43) out of 4 respectively), and "Ability to actively engage with healthcare providers" (3.94 (SD 0.65) and 3.94 (SD 0.62) out of 5, for RA and SpA patients, respectively). Further data collection and analysis including cluster analysis of these data is ongoing and is expected to be finalised by December 2018 for MUMC+ and Maastad Hospital.

Discussion: This is the first study in the Netherlands that aims at understanding the health literacy needs of patients with rheumatic diseases. Using this knowledge and by involving patients and health professionals in the co-design of interventions at the clinic level, we aim to improve care by adapting it to the health literacy needs of patients, moving towards 'health literate' rheumatology clinics.

#96 Health Literacy and Health Insurance Literacy among Russian-Speaking Immigrants.

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Background: Globally, there are approximately 25 million Russian-speaking immigrants, making it the second largest diaspora in the world. In addition, Russian-speaking immigration has increased after the dissolution of the Soviet Union in 1991 and the creation of newly independent states from the 15 Former Soviet Union (FSU) countries. Despite their ethnic and cultural diversity, FSU countries often share a common language – Russian.

Substantial numbers of Russian-speakers live across the European Union. For example, estimates suggest about 3 million reside in Germany. In

Finland, Russian is the third most spoken language. Other parts of the world also have a large number of Russian-speakers. Israel has about 1.5 million, representing almost a fifth of their population. The Russian-speaking population in the United States (U.S.) is estimated to be over 3 million. In the U.S., where the number of Russian-speakers has more than doubled since 1980, almost a million speak Russian at home and strongly prefer Russian language media. Twenty-two percent of the U.S. Russian-speaking population has been estimated to speak little to no English.

Given this wide diaspora of Russian speakers around the world, the health literacy and health insurance literacy of Russian-speakers is of interest to many diverse healthcare systems across many countries. Health literacy is defined by the World Health Organization as "the ability of individuals to gain access to, understand and use information in ways which promote and maintain good health for themselves, their families and their communities." Health insurance literacy is defined by Paez et al (2014) as "the degree to which individuals have the knowledge, ability, and confidence to find and evaluate information about health plans, select the best plan for their own (or their family's) financial and health circumstances, and use the plan once enrolled."

A number of studies reported vulnerable populations such as immigrants to have lower levels of health literacy and health insurance literacy. In addition, immigrants from FSU countries shared the common experience of a socialized medical system, available to all and usually free, distinct from many other health systems, especially those of the U.S. Navigating unfamiliar health care systems along with a nonnative language may make it challenging to achieve health literacy. Russian-speakers are an interesting population to study as they often emigrate with high educational attainment yet, may prefer Russian language information in their new communities, which may not always be available or relevant to their culture or context. While some Russianspeakers assimilate well, others have been reported to struggle. Despite these important issues, Russian-speaking immigrants often understudied in many countries.

Objective: The goal of this study was to evaluate current knowledge on the topic of health literacy and health insurance literacy among Russian-speaking immigrant populations.

Methods: We conducted a systematic literature review in English and Russian through October 2018 on the topic of health literacy and health insurance literacy among Russian-speaking immigrants within the peer-reviewed health literature. We searched in PubMed and the Web of Science for searches in English and yandex.ru, elibrary.ru, mediaspera.ru, ciberleninka.ru for searches in Russian. Keywords included Russian, Soviet, Russian speaking, former Soviet Union, health insurance AND coverage, emigration and immigration [MeSH Terms], immigrants and emigrants [MeSH Terms], health literacy, health insurance literacy, грамотность в вопросах грамотность, здоровья, медицинская медицинская страховка.

Results: There appears to be extremely limited research on the topic of health literacy and health insurance literacy in Russian-speaking immigrant populations. We found no articles in English on the topic of "health insurance literacy" among Russian-speaking immigrants. Given the lack of relevant information, we also considered all research on health literacy and Russian-speakers who were not immigrants. Even this resulted in a few articles.

We found a few articles that discussed the results of the comprehensive health literacy survey tool. the European Health Literacy Questionnaire (HLS-EU-Q), which has been administered in Russian in Kazakhstan and in Israel. In the Russian language health research literature, we found less than 20 articles relevant to "health literacy." Most articles focused either on general health topics (e.g., healthy lifestyle, disease prevention, health education) or examined the health literacy policies, tools, and research in other countries. In 2016, Zafirova et al. noted that little to none populationbased health literacy assessments had been done in Russia at that time. Five articles reported that the health literacy of the Russian population is likely to be low; however, no standardized assessment tools were used. In addition, there was a discussion that health care providers do not deliver adequate preventative education about healthy lifestyles. We found no articles related to "health insurance literacy" in Russia, likely due to the socialized medical system with social insurance making this less challenging than in the U.S. where health insurance literacy can be critical to access medical care.

Discussion: While there is some research on the topics of health and health literacy among Russian speakers, it is primarily in Russian and provides limited empirical data around measured health literacy or associations of measured health literacy with health outcomes in a Russian-speaking population. Also, this literature is rarely about Russian-speaking immigrants, rather it focuses on Russian residents. Most of the Russian language research on health literacy seemed to be identifying research gaps in Russia (relative to other countries) to prepare for future work in this area. Thus, there appears to be momentum to understand and address this topic.

Despite a large number of Russian-speaking immigrants worldwide, there is limited literature available about their health literacy and health insurance literacy. Yet, it is critical to understand the needs of Russian-speaking immigrants to ensure their assimilation in the global healthcare settings, to provide appropriate care, to anticipate challenges, and to assess their ability to understand, utilize, and navigate healthcare systems. There is also a lost opportunity for a comprehensive understanding of how to best serve this large linguistic minority across many settings. In the next phase of this study, we will consider reports, grey literature, white papers, books, and dissertations to look for insights to illuminate this research gap.

#98 Developing a unidimensional short version of the European Health Literacy Survey Questionnaire.

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Background: When subsets of items form subscales measuring different aspects of a construct, confirmatory factor analysis (CFA) might be applied to confirm the number of factors i.e., the magnitude of dimensionality. Contrary to the

prescriptive Rasch-models, CFA has no external criteria against which the data is tested. Rasch modelling means to test the data up against the probabilistic Rasch model to check whether the data conform to the model. Only Rasch models meet the expectations and requirements of fundamental measurement, such as additivity, invariance, sufficiency and specific objectivity.

European Health Literacy Questionnaire (HLS-EU-Q47), which reflects a framework comprising four cognitive domains across three health domains, is thus best described using a 12-dimensional Rasch model. Researchers have carried out few stringent empirical studies, but unanimously studies confirm multidimensionality of the current HLS-EU-Q47 scale. Adding up unweighted item score to a single scale score presupposes a unidimensional scale. Further, the HLS-EU-Q47 is quite lengthy and time-consuming. Accordingly, one might prefer a shorter version scaffolded on the same theoretical framework.

Objective: Our aim was to develop a unidimensional short version of the HLS-EU-Q47, and to evaluate the psychometric properties of the short version.

Methods: During November 2014, 900 adults sampled from the Norwegian population responded to the HLS-EU-Q47. We collected the data using computer-assisted telephone interviews. During March 2015, a sample of 388 adults with type 2 diabetes (T2DM) responded to the HLS-EU-Q47 using a paper-and-pencil self-administered version. The data were analysed using the partial credit parameterization of the unidimensional and the 'between-item' multidimensional polytomous Rasch model. The analyses were performed using the statistical packages RUMM2030 and ConQuest 4.

Results: The datasets collected in both populations conformed well to a 12-dimensional Rasch model. However, several of the 12 subdimensions suffered low reliability. When applying unidimensional approach, we observed several dependent items (response dependency). We also observed poorly discriminating items when we applied a unidimensional approach and when we applied a three-dimensional approach. While few items displayed differential item functioning (DIF) in the T2DM sample, several items displayed DIF for gender, age and/or education level in the population sample.

We developed the HLS-Q12 by a stepwise exclusion of poorly discriminating items, items displaying DIF, and dependent items. We based our final selection of items on a qualitative evaluation of item content, and we ensured that the various aspects of the underlying framework were represented. The HLS-Q12 includes the following HLS-EU-Q47 items: 2, 7, 10, 14, 18, 23, 28, 30, 32, 38, 43 and 44.

The selected HLS-Q12 items conformed well to the unidimensional Rasch model in both samples, no items displayed DIF, all items had ordered thresholds, and the scale's reliability was acceptable in both samples. The HLS-Q12 scale was more or less well-targeted to our samples.

Discussion: The HLS-EU-O47 data violated the requirement of unidimensionality. The HLS-EU-Q47 data was best accounted for using a 12dimensional model. It follows that we cannot defend the common practice of summing up a single total health literacy score based on the HLS-EU-Q47. Based on these findings, we recommend a multidimensional approach when applying the HLS-EU-Q47. However, a 12-dimensional scale provides 12 sub-scores for each individual. Twelve different but related scores is quite impractical in clinical situations. Moreover, several of the 12 theoretically defined subscales suffer from low reliability. Hence, scales should be thoroughly validated applying Rasch modelling before one uses the data to support claims about health literacy in individuals and populations.

The HLS-Q12 seems to be a valid and sufficiently reliable HL measurement scale. As the HLS-Q12 items conform well to the expectations of the unidimensional Rasch model, and the scale is sufficiently unidimensional, we can sum up the item scores to one overall HL score. We found that the psychometric properties of the HLS-Q12 was superior to other short versions of the HLS-EU-O47, such as the HLS-EU-O16 and the HL-SF12. We need further validation of the HLS-Q12 across cultures, languages, ethnicities and in people with

different health conditions.

#99 Health literacy is needed for adequate health behaviour and empowerment.

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Health literacy (HL) is deemed as an essential asset for accessing, understanding, evaluating and using information necessary health for taking responsibility and manage own health. Hence, HL could be seen as an asset to empower people to adequate health decisions. HL has theoretically been linked to empowerment, where higher HL support increased opportunities for autonomy and empowerment. However, the association between HL and empowerment has only to a small extent been investigated empirically in populations at national level. Low HL has been linked to worse health status and unhealthy behaviour. However, there are a need for more knowledge about this association, especially in the Nordic countries where there is limited knowledge about HL in individuals.

Objective: The objective was to examine the association i) between HL and health behaviour, and ii) between HL and empowerment.

Methods: The sample consisted of 900 Norwegians aged 16 and above. Data were collected during November 2014 using computer-assisted telephone interviews. HL was measured using the short form of the European Health literacy survey questionnaire, HLS-Q12, which was developed and validated using Rasch model analysis and confirmatory factor analysis. The HLS-Q12 reflects a conceptual model of HL comprising four cognitive domains (access, understand, appraise and apply health information) across three health domains (health care, disease prevention and health promotion). The HLS-Q12 consists of 12 questions with one question from each of the 12 subdimensions. It has a 4 point rating scale: very difficult (1), difficult (2), easy (3) and very easy (4), where a higher score indicates higher HL. The HLS-Q12 was found to have a Coefficient Cronbach's alpha of 0.77 in this sample.

Health behaviour was measured using single questions about physical activity, tobacco use and alcohol consummation. Respondents were classified as physically active if they reported being physically active every or almost every day. Those who answered that they were former smokers or had never smoked were classified as non-smokers. Those answering that they did not consume alcohol during the last 30 days were classified as non-consumers.

Empowerment was measured using four selfdeveloped questions, which was used as a proxy for empowerment. The questions were developed on basis the World Health Organization's definition of individual empowerment and aspects of patient empowerment. The four questions were about how difficult or easy it is to: 1) take control of one's own health in daily life, 2) implement goals relating to one's own health, 3) take responsibility for one's own physical and mental health by being physical active, eating healthily and being social, and 4) participate actively in health communication with health professionals by asking questions and prompting a plan of action for their own health needs. The questions had the same rating as HLS-O12.

In addition, data on demographic variables such as gender, age and highest completed education were collected, as well as general health status.

HL raw data obtained from the HLS-Q12 was transformed into logit values using the software RUMM2030. Such estimates could be deemed as continuous data and at interval level. Initially, independent t-tests were performed to investigate the differences in HL across gender, age, education, health. health behaviour empowerment. Second, sequential multiple linear regression analysis was performed to investigate the association between HL and health behaviour and empowerment controlled for variables that displayed significant differences in HL when independent t-tests were performed. The variables age ($65 \le 66$ years), education (university level or not), general health (good versus bad), and health behaviour (as described above) were dichotomised before they were entered to the analyses. The empowerment variables were treated as categorical with a four point rating scale.

Results: Preliminary results indicated that significantly higher person location estimates of HL were found in females compared to males, persons aged 65 or below compared to those having an age of 66 or above, those reporting good general health compared to those reporting bad general health. Those being physical active each day or almost every day had significantly higher HL estimates than the others. Non-smokers were found to have significantly higher HL than those who were smokers. No significant differences in HL were found when it comes to education nor alcohol consumption. Independent-samples t-test indicated that those perceived empowerment indicators as easy had significantly higher HL as measured by HLS-Q12.

The variables that gave significant differences in HL (gender, age, self-reported general health, health behaviour [physical active and tobacco use] and empowerment) in the independent t-tests were further entered as independent variables in a sequential multiple linear regression analysis. The final model of the sequential multiple linear regression analysis was able to explain 32% of the total variance in HL as the dependent variable. The empowerment related indicators contributed the most to the variance in HL with 26%. The items 'participate actively in health communication with health professionals' and 'take control of one's own health in daily life' made the strongest and most significant contribution to the final model (β =0.28, p=0.001 and β =0.24, p<0.001, respectively).

Discussion

People who were physical active had significantly higher HL estimates than those who were less active, and non-smokers appears to have significantly higher HL than those who were smokers. These findings could be seen as indicators for people with higher HL being more likely to engage in health-promoting activities and might have a healthier behaviour. Adequate HL might bring that people are able to use health information to make healthy choices.

The association between HL and empowerment found underpin the theoretically link between the concepts, and that HL might be essential for people to take control of own health and to participate actively in the communication about health with health professionals.

#101 Health literacy mediates the relationship between socioeconomic status and health disparities.

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Background: Although the scientific literature has repeatedly demonstrated that socioeconomic factors are powerful determinants of health, the underlying mechanisms by which they exert their effect on health are not yet completely elucidated. Recently Health literacy (HL) has been proposed as a potential mediator in the pathway linking socioeconomic status (SES) to health. However, research investigating the possible contribution of HL in explaining the relationship between SES and health remains scarce. Self-reported health (SRH) is a qualitative single question assessment of health that is commonly acquired in population health surveys. Many studies have demonstrated the validity and value of SRH as a reasonable proxy of health status for application in community-based health studies.

Aim: to evaluate whether health literacy mediates the association between socio-economic factors and self-reported health.

Methods: The study adopted a cross-sectional design and was conducted in a population-based sample, with information collected through telephone interviews. Participants was randomly selected using the registries of 11 general practitioners (GPs) working in primary healthcare centres of the municipality of Florence. Sample size was calculated based on a power calculation. Inclusion criteria were the following: 18–69 years of age and Italian speaking. Exclusion criteria included cognitive impairment, severe psychiatric diseases and end-stage diseases. Health literacy was assessed using the Newest Vital Sign. Multiple mediation analyses were conducted according to the method proposed by Tingley and collaborators using: i. education and income variables as independent variables, ii. SRH as dependent variable and iii. HL classified by NVS categories as mediator variable. All models were adjusted for gender and age. Potential moderators influencing the HL mediation effect was evaluated in the mediation analyses. Potential moderators included: age, gender and chronic diseases.

Results: 452 subjects completed the study (58,8% female; mean age 53,25±11,7). Results of the analyses showed the presence of a positive association between socio-economic variables (education and income) and SRH (p < 0.01, for both variables). HL was found to partially mediate the association between education and SRH (proportion mediated(average) = 18.5%, p = 0.02). Similar results were observed for the relationship income and between SRH (proportion mediated(average) = 12.9%, p = 0.01). No significant moderation effects for age, gender, and chronic diseases were observed in the proportion mediated by HL.

Conclusion: Findings suggest that health literacy serves as a pathway by which socioeconomic status affects health. Findings not only provide insight of the underlying mechanisms by which socioeconomic disparities contribute to health differences, but also suggest a possible target to address these health inequalities. Policies and interventions aimed at increasing the level of HL in the population or that takes people's low HL into account may be a means to achieve greater equity in health. However, further studies are needed to confirm our results and to better define the role of HL in mediating the relationship between socioeconomic determinants and health status.

#102 Health literacy and confidence in noticing Colorectal Cancer (CRC) among the general population in Malaysia.

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Introduction: The colorectal cancer (CRC) burden in Malaysia is rising. Incompetence in recognizing cancer symptoms resulted delayed seeking health care and poor outcome of cancer treatment. There is a lack of information on general health literacy and people's ability in noticing cancer symptoms. Our study aimed to explore the health literacy status among general population in Klang Valley and its association on knowledge of CRC symptoms and risk factors, and confidence in noticing CRC symptoms.

Methods: Data was collected as part of a representative household survey in Klang Valley which comprises of Kuala Lumpur and Selangor state, in 2018. The validated Malay version of Bowel Cancer Awareness Measure (Bowel CAM) and 6 items European Health Literacy questionnaire were used to assess awareness of CRC and general health literacy. Statistical analysis was conducted in SPSS. Descriptive statistics have been conducted with Pearson's Chi Square for categorical variables and independent samples t-tests for continuous data.

We conducted generalised linear model analysis for categorical data and linear regression analysis for scale data. Our aim was to look for an association between health literacy and 1) knowledge about CRC symptoms, 2) knowledge about risk factors for CRC and 3) confidence to recognise symptoms. We adjusted for gender, age, education, and ethnicity.

Results: Data from 885 participants was retrieved. Among total participants 3% has inadequate, 40% has problematic and 57% has sufficient health literacy level. Our results suggest that health literacy is positive and significantly associated with knowledge about CRC-symptoms (B=0.553; 95 CI = 0.105, 1.001; p-value < 0.05). People with sufficient health literacy are likely to scored 0.553 points higher in CRC-symptoms knowledge compared to people with insufficient health literacy.

However, health Literacy was not associated with knowledge about CRC risk factors (B=0.069; 95% CI 0.752, -0.361, p-value 0.499).

We also found a positive and significant association between health literacy and confidence in recognising symptoms ((B) = 0.731; 95% CI 0.537, 0.994; p-value < 0.05).

Conclusion: General health literacy plays important role in noticing CRC symptoms. Improving general

health literacy has a promising potential on preventing delayed seeking health care for CRC.

#104 Self-management support can increase Health literacy. Examples from high and low level health literacy countries.

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Increasing the self-efficacy of people with NCD, by Self-Management support is strongly correlated with increasing the level of health literacy in a society. Research from Denmark indicates that participants in The Stanford Chronic Disease Self-Management program (CDSMP) with a low level of health literacy benefit more than participants with a high level of health literacy . In this way CDSMP and similar interventions is very concrete and useful tools to increase health literacy in a system wide approach, not just by raising the skills of those with a low level, but also by allowing citizens at all levels to address challenges, improve skills, and enhance empowerment.

In Denmark and several other western European countries, CDSMP have been operated in different settings in the local units of the health care systems for more than 20 years. In Denmark the Danish Committee for Health Education have implemented the workshops at a national level since 2006, through the Danish municipalities. This means that the program is accessible for all 98 municipalities, financed by a subscription system. Currently 67 municipalities are delivering workshops and outcome studies concludes that participants experienced:

- Increase in self-efficacy
- decrease in pain
- increase in energy
- decrease in fatigue
- increase in life quality
- decrease in functional disability
- better communication with family, friends and Health care professionals

When you implement a Self-management support program (e.g. CDSMP) on a national level and makes the program accessible to citizens with low Health Literacy, several things will happen, e.g.:

- Participants will increase their level of selfefficacy, which will increase life-quality, everyday handling of symptoms and make them a more even partner in the relations with Health care professionals.
- Patient organizations becomes important partners to local health centers and health authorities, and thereby increases their influence on procedures for treatment and support. During the 13 years of operating the CDSMP in Denmark, we have experienced many 'co-creation of health' initiatives between municipalities and patient organizations. Many of these initiatives was invented, because organizations and municipalities cooperated about recruiting participants to self-management programs.
- Local health literacy issues and challenges can be better addressed by authorities and organizations by the creation of better insight potentially aiding in the production of new materials, concepts, and initiatives

All three consequences have the potentials of increasing health literacy. Self-management support is in some sense retraining of everyday competences, which makes the individual more active, competent and motivated in managing life with NCD.

The Danish Committee for Health Education is currently advising Moldova about disseminating and testing CDSMP in local communities. Firstly we have tested the arguments and processes of Selfmanagement to central stakeholders including patients and identified a sustainable setup for delivering the program. The next steps will be a widened dialogue with stakeholders of all kinds, also appreciating the significant differences an implementation of such programmes has in terms of implementation in terms of timeline, geography, and complexity, depending on the concrete challenges of a specific healthcare system. The future of a full CDSMP in Moldova are still not certain, but there is a clear interest and engagement - which both are vital signs for the viability of such a transformation.

Focus on implementation and integration

In the interactive presentation we will share our experiences in introducing and integrating CDSMP in countries with relative high health literacy, a survey of the evidence behind the program, and our experiences of the introduction of Self-Management support in a country with a low level

of health literacy (Moldova) and the strategies and perspective of this first piloting of an CDSMP. Second, we will present the European Network of Patient Empowerment, and relevant European projects involving Self-Management support as a tool for increasing health literacy. We believe that the specific experience of our hands-on contact to citizens – rather than patients per se – have been very useful in giving feedback and input to the creation of policy suggestions for a wider

#105 Using the Conversational Health-Literacy Assessment Tool (CHAT) in client-provider rehabilitation consultations: A pilot evaluation.

empowerment agenda.

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Background: The Conversational Health-Literacy Assessment Tool (CHAT) is designed to support healthcare providers in understanding individually challenges related to health literacy. While it has been used in few settings, there is still a need for evaluations of CHAT across healthcare service contexts.

Objective: We aimed to evaluate CHAT in clientprovider consultations as part of a rehabilitation service setting focusing on its effectiveness, adoption and implementation.

Methods: CHAT was implemented among 10 healthcare providers in a Danish municipal rehabilitation unit for clients with chronic conditions. The RE-AIM framework (Reach, Effectiveness, Adoption, Implementation and Maintenance) was used for the evaluation. A healthcare provider survey with 14 questions provided results on adoption, effectiveness and implementation. Semi-structured interviews with 18 informants (healthcare providers and clients) were performed as focus group and individual interviews. Qualitative content analysis was used to qualify the descriptive survey results on effectiveness. This was also used to investigate factors affecting adoption and implementation among healthcare providers. Data analysis is

ongoing, but will be structured by the RE-AIM and completed prior to the conference.

Results: Preliminary results show; Effectiveness: The healthcare providers emphasized CHAT as a useful framework for identifying enablers and barriers according to health literacy. Using CHAT prolongs the consultation but it adds information the healthcare providers were not otherwise able to identify. Adoption: All healthcare providers reported had tried using CHAT. Some acted as 'early adopters' and others as 'laggards'. Implementation: Healthcare providers identified CHAT as adjustable and easy to apply. It was used in combination with other tools and supporting questions regarding client history and action planning.

Discussion: Based on preliminary results healthcare providers finds CHAT efficient to use in rehabilitation consultations among patients with chronic conditions. Adoption among healthcare providers might be influenced by the initial knowledge of and attitude towards health literacy. Regarding implementation, CHAT seems adaptable and feasible to apply in the existing practice. It indicates to be a promising tool for facilitating individual health literacy needs assessment and design care plans which are otherwise difficult to obtain.

#106 Heart Skills - A health literacy profile of 161 people referred to cardiac rehabilitation.

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Background: Health literacy is defined by individual qualities but impacts also on health via people's interaction with health care providers and a demanding and complex healthcare system. Health literacy profiles provide a deep understanding of the health literacy challenges within a population allowing development of targeted, context-sensitive interventions at individual and system level.

Objective: This study among people referred to a municipal cardiac rehabilitation programme aims to produce a health literacy profile describing clusters with specific socio-demographic and health related characteristics and unique health literacy patterns.

Methods: This cross-sectional study was based on survey-data from 161 people referred to the cardiac rehabilitation programme in Randers Municipal Rehabilitation Unit. Health literacy was measured using the Health Literacy Questionnaire (HLQ), which describes nine aspects of health literacy. Questions regarding socio-economic status, disease course, and health status (SF-12) was included. Hierarchical cluster analysis was performed based on the nine HLQ scale scores.

Preliminary results: Six clusters (A-F) were selected as the optimal cluster solution. Each cluster represented a unique health literacy pattern. Of the six clusters cluster E (n=19) had the lowest mean age (63.5 y), the most females (47.4 %), and the lowest average physical health status (PCS 37.4) and mental health status (MCS 39.5). The cluster was characterized by low HLQ scores in navigating the health system (scale 7), as well as engaging actively with and feeling understood by healthcare providers (scale 6 and 1).

Of the six clusters cluster F (n=10) had fewest with high educational level and fewest who attended the rehabilitation services offered (exact values not reported due to small n). The cluster was characterized by low HLQ scales scores in finding, understanding and evaluating information (scale 8, 9 and 5) as well as navigating the health system (scale 7) and actively managing one's health (scale 3).

Discussion: The health literacy profile has provided a thorough assessment of the context-specific needs and health literacy challenges among people with cardiovascular diseases referred to Randers Municipal Rehabilitation Unit. Our results can now guide future research interventions and quality improvement activities. The specific profile may be generalizable to other similar settings concerned with comparable populations.

#109 How to engage low literate patients in practice improving projects in primary care? Experiences with a participatory method.

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Introduction: Low literate patients have an increased risk for chronic diseases and more often have an unhealthy life style. These patients experience difficulties understanding following up health related advises from doctors and are often unable to manage their health behaviour and related diseases. On the other hand, professionals experience difficulties communicating with low literate patients and .Adjustment addressing their needs of communication and materials to the capabilities, the level of (health) literacy and the needs of low literate patients will contribute to more quality of care and to a better relationship between patient and health care professional. The need for patient and public involvement in developing practice improvement projects is being widely accepted. However, involving low literate patients can only be beneficial if strategies are used that ensure a meaningful involvement of also the least powerful stakeholders, in this case, the low literate patients. Participatory Learning & Action (PLA) is known effective method when working with different stakeholders with different perspectives and levels of power. In our study on the improvement of self-management of low literate overweight patients in Dutch General Practice, we used PLA techniques to work together with low literate patients and professionals. The aim was to develop together activities and actions within the practice to adjust communication and care to the needs of low literate patients. As researchers and practice staffs are increasingly aiming for strategies to involve also low literate service users, we present here our experiences.

Method: In three primary health care centres in the Netherlands, stakeholder groups were formed in which primary health care professionals participated (General Practitioner. nurse. physiotherapist, dietitian) and other professionals neighbourhood (municipality, municipality health service or social work) as well as low literate patients. During a period of three years 11 sessions (of each two hours) were conducted with all stakeholders. The PLA techniques used included PLA moderated flexible brainstorm, commentary cards, direct ranking and speed evaluations—all visual and verbal instead of textual strategies. Participating patients received a reimbursement for each session. During the sessions the researcher made notes and after most sessions a speed evaluation took place. Results presented in this poster presentation are based on this data and experiences of the moderators.

Results: It was not easy to find low literate patients who wanted to participate in the stakeholder groups, and some were not able to attend all sessions, due to working shifts or health problems. However, in all practices low literate patients stayed involved in all sessions, despite sometimes language barriers on top of limited literacy. When working in smaller subgroups, the migrant stakeholders felt more at ease to express themselves.

Overall, engagement of low literate patients led to valuable insights into their needs and the obstacles they perceive with regard to use of primary health care in that particular practice. This resulted in different activities in the three practices e.g. adaptations to the health promotion materials in the waiting room, training of professionals, working together with sports coaches.

All stakeholders became aware of the need to keep their communication as clear and simple as possible. The clear messages of low literate stakeholders provided the professionals with real 'eye openers'. At the same time, often the professionals tended to speak too quick or too difficult vocabulary and had to be reminded by the moderator. The low literate patients often did not mention themselves that the discussion was too asked difficult. This good conversation management skills of facilitator of the sessions. The low literate stakeholders enjoyed participation, feeling empowered and important and became more aware of their own responsibility for changing their lifestyle.

Conclusions: Engaging low literate patients in a meaningful way throughout the project was a challenge, it asks for continuously being aware of their role, their needs during the session, and to what extent they are still able to understand and follow the discussions. However, it is highly valuable for the outcomes as their presence constantly keeps all stakeholders aware of the reality in daily practice when communicating with low literate patients.

#110 Health literacy among dialysed patients in Slovakia: preliminary results from ongoing study.

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Background: Prevalence of chronic kidney disease as a major cause of kidney failure is growing in developed countries. Patients with kidney failure requires special health care and regular dialyses. Patients on dialyses clinics represents specific group of patients with special health needs and whose vulnerability might be increased or decreased according their health literacy level. It is already known that chronic patients with better health literacy have fewer comorbidities, health complications and hospitalizations and mortality among them is lower. Little is known how dialysed patients' health literacy differs from general population in Slovakia and how health literacy relates to sociodemographic characteristics and self-rated health in Slovak dialysed patients.

Objective: The aim of our study is to compare the level of health literacy (HL) of dialyzed patients with general population sample in Slovakia and examine potential differences in HL level within dialysed patients and their subgroups based on selected socio-economic indicators and self-rated health categories.

Methods: Cross-sectional study on partial sample of dialysed patients (N=399, males 59,4%, mean age=63,4 SD=13,7) attending dialysis clinics in Slovakia was conducted during ongoing data collection. Actual sample size represents approximately 75% of planned number of participants. General population sample used for

comparison of HL level consisted of 360 respondents (mean age=38.6, SD=14.05). Wide range of data were collected from dialysed patients, e.g. demographic and socioeconomic information, HL, self-rated health, quality of life, adherence and objective clinical data as well. For the purposes of this study we used only data on patients' nine domains of HL (Health Literacy Questionnaire, HLQ), self-rated health (single item, KDQoL), subjective socioeconomic status and highest attained education. The differences in HL level between subgroups were tested using t-test and ANOVA. The study was approved by the Ethical Committee of the Faculty of Medicine P. J. Šafárik University and by the Ethical committee of Fresenius Medical Center.

Results: Dialysed patients generally reported higher average HL levels compared to general population. Difference was significant in 6 HLO domains except 3 domains: Appraisal of health information, Ability to find good health information and Understanding health information well enough to know what to do (t=3.03 - 5.52); p<0.01). Patients with apprenticeship, high school or university education reported higher levels of HL in 3 domains: Appraisal of health information, Ability to find good health information and Understanding health information well enough to know what to do compared to patients with elementary education. Differences in HL levels between patients' subgroups with different educational attainment was significant in those 3 domains (F=2.92-4.92, p<0.05). Comparison of two patient subgroups with higher and lower status socioeconomic showed significant differences in 5 HLQ domains (t=2.17 - 3.33; p<0.05). Higher SES patients in had higher HL in domains: Having sufficient information to manage their health, Ability to actively cooperate with healthcare providers, Navigating the healthcare system, Ability to find good health information and Understanding health information well enough to know what to do, compared to lower SES patients. Patients reporting fair, good, very good or excellent self-rated health reported higher HL in domains: Navigating the healthcare system Understanding health information well enough to know what to do, compared to the patient reporting poor self-rated health (F=2.92-4.92, p<0.05).

Discussion: Our findings on Slovak dialysed patients suggest that health literacy is not might predict better health outcomes and that higher health literacy might be expected in better educated and better economically situated patients. On the other hands health literacy among dialysed patients is higher compared to general Slovak population what might reflect longer interaction with health care system and health care practitioners.

#112 Establishing consensus on key indicators for the monitoring and evaluation of interventions aimed childhood obesity prevention: a Delphi Panel Study.

<u>Professor Gerardine Doyle</u>, Dr Shane O'Donnell, Dr Grace O'Malley, Dr Browne Sarah, Mr James O'Connor, Prof Tahar Kechandi

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Background: The aim of the EU H2020 BigO project is to develop a technology system that leverages the potential of big data to assist with monitoring and evaluation of public health interventions that address childhood obesity.

A key aspect of the project is to engage with leading public health authorities [PHAs] throughout Europe to co-develop such a system with a view to supporting decision making in the execution of policies in this area.

Objective: This study aimed to develop consensus surrounding key indicators in the monitoring of childhood obesity and evaluating population-level prevention approaches.

Methods: An expert panel with remit in childhood obesity prevention (including policymakers, academics and advocates) participated in a three-round Delphi Panel study. In round one, panellists answered a series of open-ended questions to

identify the most relevant indicators concerning the evaluation and subsequent monitoring of interventions against childhood obesity, focusing on three main domains: dietary, built environments and health inequalities. In subsequent rounds, panellists rated the importance of each of the identified indicators and the responses were then analysed quantitatively. Only indicators rated as either 'very' or 'extremely important' on a 5-point Likert Scale, by at least 70% of participants, were deemed to have reached consensus

Study Status and Results: The result analysis of the final round will be completed in November 2018. During Round 2, consensus has been reached for two indicators in the built environment (i.e. Availability of open spaces in neighbourhood and Availability of safe cycling paths), one in the dietary environment (Availability of fresh fruit and vegetables) and three related to health inequalities (Employment status or socio-economic status of family; Relative income poverty and Consistent income poverty). A further 12 indicators are likely to reach consensus in Round 3.

Conclusion: This study will directly affect further developments of the BigO system for use in Sweden, Greece, Ireland and The Netherlands and, later, across Europe. Moreover it will provide important insights into the needs of international Public Health stakeholders in terms of the monitoring and evaluation of childhood obesity interventions over the next 5-10 years.

#113 Health Literacy of Children and Young People – from a Conceptual Analysis towards a Target Group-Centered Definition.

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Background/Purpose: For measuring and strengthening health literacy during childhood and youth, it is important to be explicit and specific about the conceptual health literacy understanding and the concepts' meaning for these life phases. This contribution aims to examine and reflect upon

prominent health literacy understandings during childhood and youth through various, interdisciplinary perspectives and to propose a target group-tailored health literacy understanding for children and young people.

Method/Approach: The contribution is a conceptual exploration, analysis and reflections of health literacy in childhood and youth by drawing on theoretical and empirical literature on health, education and sociology and by means of expert discussions.

Findings: First, exploratory entry points for developing a child-specific health literacy understanding are presented in six dimensions, the so-called "Health-Literacy-6D-Model". These are epidemiology differential and health perspectives, (b) demographic patterns and inequalities, (c) developmental change socialisation process, (d) dependency within power structures and inter-generational relationships, (e) democratic citizenship and active participation, (f) digitalisation and the digital worlds of growing up. Second, five meta-level dimensions of available health literacy definitions and models for children and young people as described in the conceptual analysis are described and reflected upon: (a) content & attributes of health literacy, (b) antecedents and contextual interrelatedness, (c) subject matter or topic purpose, (d) expected outcomes, and (e) life course relevance and target group sensitivity. Third, based on the findings discussed, a target-group centered health literacy definition for children and young people is proposed:

"Health literacy of children and young people starts early in life and can be defined as a social, relational construct and entails how health-related. multi-modal information from various sources are accessed. understood. appraised, communicated and used to inform decision-making in different situations in health (care) settings and contexts of everyday life, while taking into account social, cognitive and legal dependence. As such, health literacy is observable in children's and young people's interaction and practices with health-related information, knowledge, messages in a given environment (so called "health literacy events or interactions"), while encountering promoting or hindering social structures (in micro, meso and macro contexts), power-relationships and societal demands."

The definition integrates three conceptual dimensions, namely individual health literacy assets, social health literacy assets and situational attributes of the occasion where health literacy takes place.

Discussion/Conclusion: This contribution offers a multi-disciplinary approach for advancing the available health literacy understanding considering theoretical and empirical evidence from health and educational research and sociology. There are four principles inherent to the proposed target group-centered health literacy definition that can be deduced into four recommendations for future actions: (a) To characterize health literacy from an asset-based perspective, (b) to consider health literacy as socially embedded and distributed at individual, family and social level, (c) to recognize that health literacy starts early in life and develops both in phases and agilely/flexible, and (d) to consider the complexity of health information by being multimodal health-related information from various sources.

This contribution raises awareness for the heterogeneity of the current conceptual health literacy debate as well as the gaps and shortfalls with regards to adequate representation of target group-specific characteristics. Further research is necessary to test the feasibility and applicability of the proposed definition and conceptual understanding in the target group and within research and practice.

#114 Open – Outcomes of patient's evidence with novel, do-it-yourself-artificial pancreas technology.

Dr. Shane O'Donnell, Dr Katarina Braune, Dr Bryan Cleal, Dr Ingrid Willaing Tapager, Mr Adrian Tappe, Ms Dana M. Lewis, Mr Bastian Hauck, Ms Renza Scibilia, Ms Elizabeth Rowley, Dr Winne Ko, Prof. Gerardine Doyle, Prof. Kechadi Tahar, Prof Timothy Charles Skinner, Prof. Klemens Raile

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Digital innovations in healthcare up until recently have typically followed a 'top-down' pathway, with manufacturers leading the design and production of technology-enabled solutions and patients involved only as 'users' of the end-product. However, this is now being disrupted by the increasing influence and popularity of more 'bottom-up' and patient-led open source initiatives. A leading example is the growing movement of people with diabetes (PwD) who create their own "do-it-yourself" artificial pancreas systems (DIY APS) through remote control of medical devices with an open source algorithm.

The EU-H2020 funded project "OPEN" brings together an international and intersectoral consortium of patient innovators, clinicians, social scientists, computer scientists and patient advocacy organizations to establish an evidence-base surrounding the impact of DIY APS on PwD and wider healthcare systems. Its aims include the following: 1) to examine the clinical and quality of life outcomes, as well as lived experiences, of DIY APS users through a variety of quantitative and qualitative approaches; 2) to make technological improvements in DIY APS through improving the user experience as well as the predictive capacity of such systems; 3) to explore barriers to scale-up, such as socioeconomic, gender, ethnic and agerelated inequalities in access to technologies needed for DIY looping, and how they might be resolved.

The DIY APS movement is an exemplary case study of historical significance, and this research will have important lessons and implications in a context where informed and connected patients are driving and challenging current care models and paradigms of medical innovation and regulation.

#115 Health Literacy among Parents as Caregivers in Neonatal Intensive Care Unit – A systematic review and meta-analysis.

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Introduction: Health literacy is high importance for pediatricians as their patients and caregivers have to comprehend the risks and benefits of medical procedures, strictly obey medical instructions, and make decisions about medical interventions especially in Neonatal Intensive Care Unit (NICU). Individual factors that influence a parent's level of health literacy in order to make a proper decision for their children are the pathways that link health literacy to health outcomes. However, every patient would face difficulties obtaining a situation when parents as their caregivers fail to do what should be done.

Objectives: The aim of this study was to assess the available evidence of studies investigating caregivers' health literacy regarding medical illnesses experienced by patients.

Method: The literature review was conducted using the text word and MeSH terms for topics on health literacy and caregiver in the OVID database system. Selected studies screened for the quality using STROBE checklist for observation studies and CONSORT checklist for experimental studies. Pooled estimates of proportions with 95% CI were described.

Results: Four different health literacy measurement tools were used among the studies collected. The overall pooled proportion of parents as caregivers with limited health literacy was calculated using a random-effects model. A total of 4 studies (1 longitudinal and 3 cross-sectional studies) representing 347 parents were included in the quantitative synthesis. Overall Pooled estimate of limited health literacy was 0.910 (95% CI 0.250-1.570, p-value 0.007, T2 0.142).

Conclusion: Our study showed a high prevalence of limited health literacy among parents as caregivers

in NICU. Our findings suggest the importance of addressing the caregivers with limited health literacy because the decision relating to the patient's treatment is in the parent's hand.

#116 Organisational health literacy – system-level health literacy response approaches for health care services working with non-communicable diseases.

Mr Jürgen M. Pelikan², Mrs. Helle Terkildsen Maindal¹, Dr. Peter Nowak², Mag. Eva Leuprecht², Dr. Christina Dietscher³, Dr. Anna Aaby¹, Miss Nanna Husted Jensen¹

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General objectives

- 1. Increase awareness of organizational health literacy (OHL) and health literate health care organizations (HLO).
- 2. Present experiences with the development and use of frameworks and tools to assess OHL in health care organisations.
- 3. Exchange local level experiences regarding health literacy challenges in NCD prevention and care.
- 4. Discuss opportunities and challenges regarding the use of an OHL/ HLO approach to a health system-level HL response focusing on NCD prevention and care.

Proposed format

1. Health literacy and non-communicable diseases in Europe. (10 mins)

This and the next presentation will scope the rest of the symposium.

- 2. The evolving concept of organizational health literacy / health literate organizations. (10 mins)
- 3. From the Vienna Concept and Self-Assessment Tool to an international adapted instrument on measuring organizational health literacy in hospitals (10 mins)
- 4. Organizational Health Literacy Responsiveness Making organizations fit for diversity (10 mins)

- 5. The Conversational Health Literacy Assessment Tool (CHAT) preliminary results from an evaluation (10 mins)
- 6. Audience discussions
- a. Questions and answers to/from the presenters (10 mins)
- b. Exchange of experience regarding major organisational health literacy challenges focusing on NCD prevention and care (15 mins)
- c. Discussion of the strengths and weaknesses of presented OHL frameworks and tools in relation to the identified challenges (15 mins)

Presentation abstracts

Abstract presentation 1. Health literacy and non-communicable diseases in Europe

Professor, PhD MPH Helle Terkildsen Maindal

What is known? Based on large population surveys in Denmark, people with NCD's report more difficulties than the general population in HL related-competences, and the specific diagnosis affects the association.

The above is evident in people with single conditions and especially people with multimorbidity.

What is needed? Prevention, care and rehabilitation of NCDs relies heavily on the patients' active health management and abilities to find, understand and use information, navigate the health system, communicate with caretakers and take decisions regarding health. The health system alone cannot meet the challenges regarding individual health literacy, since they involve a palette of different competences acquired throughout a life course. However, health care organisations can work to better accommodate people with diverse health literacy strengths and challenges, thus improving their OHL.

Abstract presentation 2. The evolving concept of organizational health literacy / health literate organizations

Professor em., PhD Jürgen M. Pelikan

The Why. A considerable proportion of patients have limited HL which has detrimental effects on use and outcomes of health care. Furthermore, through it's social gradient HL contributes to the health gap. This was first demonstrated in the US but later confirmed by research in Europe and Asia.

The What. To deal with patients with low HL first single interventions were implemented in the US: testing HL of patients, improving information materials, training of health professionals, and improving navigation systems in health care services. Later a whole systems approach was propagated by IOM with the publication of Ten Attributes of a Health Literate Health Care Organization by Brach et al. This lead to the development of the HLO/OHL concept and beyond for settings like cities, schools, workplaces etc.

The How. Measurement of the status quo is a prerequisite for systematic and sustainable organizational development. Therefore, different tools and interventions have been constructed to measure OHL or to improve specific aspects of OHL. Debate and research is emerging on the problems of implementing holistic OHL.

Abstract presentation 3: From the Vienna Concept and Self-Assessment Tool to an international adapted instrument on measuring organizational health literacy in hospitals

Professor em., PhD Jürgen M. Pelikan, Dr. Peter Nowak, Mag. Eva Leuprecht MA, Dr. Christina Dietscher

The Vienna concept took up the Ten Attributes of IOM, and related these to the settings approach of health promotion and to quality management. Following ISQUA rules 9 standards with 22 substandards and 160 indicators were developed and piloted in 9 Austrian hospitals. The concept and tool has now been translated and piloted several countries.

An international working group brought researchers together and adapted an international version of the tool for systematic testing in different countries. The results will be used by the Action Network for Measuring Population and Organizational Health Literacy (M-POHL) of the European Health Information Initiative (EHII) of WHO-Europe.

Abstract presentation 4: Organizational Health Literacy Responsiveness – Making organizations fit for diversity

MD, PhD fellow Anna Aaby

HLO make it easier for people to navigate, understand, and use information and services to take care of their health. We have investigated the development of a comprehensive local strategy on organizational HL responsiveness in a municipal rehabilitation unit in Denmark. 'The Organizational Health Literacy Responsiveness Framework' (Org-HLR) describes HLOs within 7 domains. During 3 workshops, we used the appertaining guide and tools to allow staff and management within the rehabilitation unit to reflect, self-assess, develop and prioritize ideas for OHL improvement.

Our results confirm the Org-HLR's ability to guide the development of a context-sensitive multi-level long-term action plan with realistic goals OHL improvements. The bottom-up co-creational strategy supported ownership and motivation increasing the likelihood of successful implementation.

Abstract presentation 5: The Conversational Health Literacy Assessment Tool (CHAT) - preliminary results from an evaluation Research Assistant Nanna Husted Jensen

The Conversational Health-Literacy Assessment Tool (CHAT) is a structure for client-provider communications designed to identify individual enablers and barriers related to HL. We have piloted CHAT in four municipal NCD rehabilitation teams as part of an organizational communication strategy to better identify client needs. Our preliminary results based on qualitative interviews with health care providers indicate CHAT as a useful, adjustable, feasible, and easy to apply systematic framework for identifying HL enablers and barriers. CHAT is a promising simple tool for systematic individual health literacy needs assessment within the client-provider consultations guiding the content of individual care plans.

#118 Improve Antibiotic prescribing by providing clear, easy to understand information for prescribers and patients.

Ms Roisin Breen¹, **Dr Nuala O'Connor**, Ms Norma Deasy ¹Hse, Dublin, Ireland

What did we want to achieve?

We wanted to educate both family doctors (GPs) and patients on the proper use of antibiotics.

- For GPs prescribe the right antibiotic for the right bacterial infection.
- For patients help them understand what types of infections antibiotics can cure and what they can't cure.

Why did we want to improve antibiotic prescribing?

It is estimated, that by 2050, if the world does not address the risk of resistance to antibiotics, it will be responsible for 10 million deaths annually (more than currently lost to cancer) and will have cost USD\$100 trillion in lost global production. Ireland's level of broad spectrum antibiotic use is in the mid to high level in comparison to European counterparts. Using broad spectrum antibiotics can be described as using bleach to clean the dishes when washing up liquid would clean them!

What the research told us Irish health literacy research shows patients could misinterpret antibiotic advice.

- 20% of Irish people are not fully confident that they understand the information they receive from their healthcare professional.
- 43% of people would only sometimes ask their health care professional to clarify the information if they did not understand something they had said.
- 17% of people took the wrong dose of medication at least once.
- 39% of Irish people called for less medical jargon from their healthcare professionals.

(Irish Health Literacy Research, 2007 and 2015)

Furthermore, research indicated that 49% of Irish people believe an antibiotic can kill viruses and 33% believe they can cure most coughs and colds. (http://www.healthyireland.ie/wp-

content/uploads/2017/10/Healthy-Ireland-Survey-Wave-3-Report-1.pdf)

A UK study also found that many primary care prescribers admit that even some of their own prescribing will not be clinically beneficial. They fear what might happen should they withhold antibiotics, and because they perceive that their patients will be dissatisfied.

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/405031/Behaviour_Change_for_Antibiotic_Prescribing_-_FINAL.pdf

Project methodology: A project group linked with up with senior leadership from South Doc, Irish College of General Practitioners, HSE's Primary Care Division, Quality Improvement Division and Communications Division.

We ran the project in the GP out-of-hours service in Cork and Kerry known as SouthDoc, which had the following prescribing habits:

- 45% of all antibiotics prescribed where from a non-preferred antibiotic list known as 'the red list'
- 55% of all antibiotics prescribed were from a preferred antibiotic list known as 'the green list'
- 34% of all antibiotics prescribed was for Co Amox (an antibiotic which should only be prescribed in special cases)

This project aimed to reduce prescribing from the red list and to target specific bacterial infections by prescribing the effective antibiotic from the green list.

Project materials: We published a range of health literacy friendly materials and resources made and used in the SouthDoc surgeries to:

- 1. Influence a change in GP antibiotic prescribing patterns
- 2. Influence patients' perceptions of antibiotics. We worked closely with the National Adult Literacy Association to produce these materials. These included:

For GPs:

- Mousemats and posters were placed in each GP treatment room with information on prescribing from the green antibiotic preferred list and the red non-preferred antibiotic prescribing list. We published these in easy to read and colour coded format so they could read them at a quick glance.
- We sent text messages to each GPs with educational nudges on the green and red lists.
- We put an antibiotic prescribing trigger tool on the GP software system so that when they were filling the prescriptions, it nudged them

towards appropriate prescribing and enabled collection of real time prescribing data. For patients:

- We placed information leaflets on what antibiotics cure and what they don't cure in the GP waiting rooms and at the check in desk. This aimed to prime patients on arrival and before they saw the GP on why not to expect an antibiotic. This leaflet has the plain English accreditation from NALA.
- We also put this information up on TVs in the waiting rooms.
- We produced stickers for children with appropriate pictures and phrases like 'My cough will go away by itself' 'Fighting my earache on my own'
- We produced bright, clear information on antibiotics on a tear-off sheet format, which the GPs gave to the patient instead of a prescription. These information sheets included a space where the GP was able to write down over-the-counter medicines such as paracetemol or ibuprofen, which patients could take for coughs, colds and sore throats. There was also a space for the GP to sign it.

Project achievements and improvements in patient safety

- Reduce the percentage of antibiotics prescribed from the red list by 50% to 22%. We actually reduced it to 16.5%
- Reduce the percentage of Co Amoxiclav prescribed by 50% to 22.5%. We actually reduced it to 11.4%
- Increase the percentage of antibiotics prescribed from the green list by 30% to 55%. We actually increased it to 79%. 8 patients were interviewed in the waiting room in Killarney. The age category as the use of antibiotics in Ireland is decreasing in all age groups (largest drop in under 16 years) for last few years except those aged over 65. However this showed a slight drop in 2017. Research also tells us that those who are older can experience increased health literacy difficulties The following facts were observed:
- All patients were provided with the leaflets at reception and leaflets and information were displayed clearly at reception
- 6 of the 8 were aware of the campaign to reduce inappropriate antibiotic prescriptions. 2 who were unaware were aged over 65.
- Only 1 of the 8 received an antibiotic.

These interviews with patients and GPs informed us that both groups understanding of appropriate antibiotic prescribing improved as a result of the project, which will lead to less harm to patients from inappropriate prescribing.

#119 "About the Irish health system: A guide for refugees and other migrants"

Ms. Diane Nurse¹, Ms. Ruth Armstrong¹, Ms. Therese Donnellan¹, Ms Angela Joy¹

Health Service Executive, Dublin, Ireland

This guide was developed by the HSE National Social Inclusion Office in response to an identified need for clear and accessible information on Irish Health services and how to use these effectively. It provides support to service users seeking to understand and navigate the Irish health system.

The guide is in three parts:

Part 1 gives information on how to access different types of health care, the services that are free and how the GP, Pharmacy and hospital systems work. Part 2 gives information about specialist services (dental treatments, eye tests, hearing aids, vaccinations) and some of the staff one may meet in the health system.

Part 3 advises what to do in an emergency.

The guide has received NALA Plain English approval and as an initial step has been translated to Arabic. The guide will be translated to other languages in the near future and is available on www.hse.socialinclusion.ie translation hub for download.

#120 Do Health Literacy Interventions Impact Health Outcomes in Patients with Chronic Conditions? A Systematic Review and Meta Analysis.

Ms Eimear Connolly, Ms Eilish Sweeney, Ms Ella Lacey, Ms Emma Loftus

Background: Health literacy (HL) interventions may improve the health outcomes of patients with chronic conditions. Low HL has been linked with poorer self-management and reduced health outcomes in patients, and has also been linked with increased costs to the health service. However, it

remains unclear the impact HL interventions have on health outcomes. Hence, the aim of this systematic review (SR) is to assess the impact of HL interventions on health outcomes in patients with chronic conditions.

Methods: This review comprised of four phases: 1) database search, 2) eligibility screening 3) assessment of study quality and data synthesis and 4) meta analyses. Studies eligible for inclusion were RCTs, that assessed the impact of HL interventions on health outcomes, that used validated HL tools and included participants with a chronic condition.

Results: An initial search yielded 1346 results. Of these, 11 met the inclusion criteria. Three chronic conditions were identified; Chronic Obstructive Pulmonary Disease (COPD), diabetes and heart disease/heart failure, with nine different categories of interventions utilised. Results were inconsistent with nine studies reporting significant improvements in health outcomes postintervention. Those reporting differences favouring the intervention group suggest efficacy for the use of HL interventions. Overall the studies included were deemed to be of high quality, with limitations being noted in blinding and allocation concealment. However, no interventional effects were observed in any of the seven meta analyses conducted.

Discussion: The findings from this current review suggest that HL interventions may have a positive impact on health outcomes in patients with chronic conditions. Given the current findings, and that chronic conditions are both lifelong and costly, HL interventions should be considered when treating this cohort of patients. However, future research is required to give further direction regarding implementation into practice.

#121 A patient's voice in a Teenage Pregnancy Service. Health literacy demonstrated with a Clinical Midwife Specialist improving maternity services.

Mrs. Una O Brien¹

¹Our Lady Of Lourdes Maternity Hospital, Drogheda, Ireland

Context: Teenage pregnancy however remains a major public health concern world-wide (Mc

Carthy et al, 2014). Despite improvements in social attitudes and access to services, evidence suggests that maternal, foetal and social risks still exist in this group of women (McCarthy et al, 2014). Early booking and good care during pregnancy labour and childbirth can prevent complications in this high risk group (Mahavarkar et al, 2008). Meeting their needs more effectively will improve the life chances of these teenage parents and their children (Public Health of England, 2016).

Aim: To provide an overview of what life was like for a pregnant teenager in 1918 whilst highlighting the successful quality initiatives undertaken by a Clinical Midwife Specialist (CMS) to improve the care and outcomes of this cohort of women in 2018.

Objectives of the presentation:

- 1.To provide and over view of what life was like for a pregnant teenager in 1918.
- 2.To share the successful quality improvement initiatives in relation to communication, health literacy, learning made fun, breastfeeding rates, quitting smoking in teen pregnancy and screening and early intervention of sexually transmitted infections.
- 3.To demonstrate how having a designated Clinical Midwife Specialist in teenage pregnancy can bring about significant improvements in the quality of care, and outcomes for this vulnerable group, and having continuity of care through their pregnancy, and a one to one service has shown huge quality initiatives.
- 4.Health literacy is shown in this oral presentation through communication mediums, texting service, social media, face book, look and learning, and teaching in a fun way.
- 5.Health literacy is also shown in the peer to peer teen class for young fathers and teen mums bringing in a teen mum breast feeding shows how the teens learns under the supervision of the midwife.

Conclusion: The statistics outlined in this presentation will demonstrate health literacy in the teenage pregnancy service, and how the Clinical Midwife Specialist in Teenage Pregnancy has a pivotal role in improving the quality of care and outcomes to these mothers and their babies, through all the changes that have come about through health literacy and one to one care.

For the past 7 years the Clinical Midwife specialist has worked in this maternity unit. During that time she developed a particular interest in the teenage population attending the Unit. She took on new initiatives yearly to change and improve care for these vulnerable cohort of teenagers aged 13 years to 18 years.

Her aim was to promote, through evidence based practice and innovation, an education programme which involved and appealed to teenagers and their birth partners. Health Literacy was high on her agenda as unfortunately through no fault of their own, a lot of this group were from a lower socio economic group, and understanding hospitals, and high professional people, in the health care sector can be very daunting for them.

She firstly developed a system that clearly identified the teenager from the first point of contact. She meets every pregnant teenager on arrival to the hospital and their boyfriend, mothers and family.

She identified that there was a need to communicate with teenagers the way teenagers communicate with each other. Every teenager has a mobile phone and is on social media so this was the ideal and novel method of communication, a texting, face book service for teenagers. Once she had the basics in place she then set herself goals and targets to achieve in relation to the teenage pregnancy service, teenage classes, teenagers breast feeding, and quitting smoking. She set up teenage pregnancy guidelines for all staff in the care for the teenage mother and having the multidisciplinary team on board.

- Educated herself on health literacy.
- Researched all information relevant to the teenage pregnancy.
- Improved communication by using mobile phone texting service for teen mums and young dads and face book pages teen mums 2 b.
- Developed an education tool, and visual aids to assist at classes that teenagers can relate to and understand.
- Breast feeding box with look and learn using fun in learning.
- Survival education tool after having had a baby.
- Developed an evaluation of the service and made changes relevant for this cohort of women and young fathers.

The clinical midwife specialist decreased the length of the class while still managing to cover all topics. Thus helped the teenagers to concentrate more, and facilitated them time wise. she introduced new educational tools, and updated the DVD'S. Introducing music familiar to the teenagers, and developed new visual aids.

She designed a new up to date colourful letter for young mums, more attractive, and has helped to entice young mums to the class. All of the changes that she implemented have greatly increased attendances at the classes and clinics thus improving care.

Possibly the greatest initiatives she has introduced is the

- 1. The use of texting the teenagers with all relevant information. Mobile using is high in our society, especially among teenagers and using their own their 'language' has proved to be a huge success. Seen on poster
- 2. Setting up social media and face book has been a huge success.
- 3. Teenagers coming into the teen class breast feeding their baby supervised with the Specialist midwife improving breast feeding rates as seen in poster.
- 4. Quitting smoking in pregnancy is a success as seen in poster

Introducing different educational tools and material, new equipment. visual aids, new posters, CD'S more suited to teenagers, colourful bean bags, small pelvis for demonstration is less scary using a small knitted uterus, and dolls more baby like as the teenagers find it easier to relate to and understand.

#122 Empowering Women Globally: Using Community-Based Participatory Research Approaches to Improve Health Literacy and Promote Equity.

<u>**Dr. Elena Carbone¹**</u>, Dr Jennifer Manganello², Dr Janine Jurkowski³

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Promoting health literacy empowers individuals and communities to better navigate the health care system and health information environment, and

allows for informed decision making for choices and actions that affect health. Empowerment Theory and health literacy are inherent in Community-Based Participatory Research (CBPR) to promote health and health equity among lowincome and disadvantaged populations. In order for representatives to be engaged as equal participants in the research process, research and health capacity building need to occur. This interactive skill-based workshop will be conducted in three parts. Part One will provide an overview of health literacy at the individual and community levels, introduce participants to Empowerment Theory, and discuss how empowerment and health literacy can be used to build capacity of community representatives and patient stakeholders. Parts two and three will highlight CBPR projects currently underway in the US and globally and engage participants in discussions of how theory and practice have been used in tandem to advance the field of health literacy research. Specifically, Part Two will discuss CBPR and how Empowerment Theory can guide participatory research using an example of a CBPR process that incorporated empowerment theory in the US. Part Three will highlight several health literacy projects in the US and internationally that focus on maternal health literacy and empowerment at the community level.

Part 1: What Does Health Literacy Research Really Look Like in Individual and Community Settings?

Health literacy refers to a person's ability to obtain and understand health information and navigate the health system, as well as the health care environment itself. Definitions of health literacy will be compared and contrasted. And, drawing upon both the presenters' and workshop participants' own experiences, we will discuss how health literacy is relevant at different levels of the socio-ecological model (i.e., individual vs. community). We will also provide a brief overview about health literacy research conducted in community and clinical settings and engage in a skill-building activity that examines the benefits and challenges of conducting health literacy research in these different research environments. This part of the workshop will also involve the audience in a discussion about how health literacy is related to empowerment.

Part 2: Community-Based Participatory Research Guided by Empowerment Theory

A Community-Based Participatory Research (CBPR) approach equitably involves those impacted by the research in the research process. Inherent in CBPR is the empowerment of people to play a role in research while at the same time enabling them to increase control over their health and well-being. For communities, the empowering process of participating in CBPR can facilitate sustainable change. This part of the workshop will describe the CBPR process and the explicit incorporation of Empowerment Theory in the implementation and evaluation of CBPR. Examples from two childhood obesity prevention intervention research projects that used CBPR and Empowerment Theory to develop and scale up the intervention within Head Start will be explored with the audience. Head Start is a national program to promote school readiness and serves almost one million low-income and vulnerable families annually. Primary innovations of these projects are its explicit incorporation of Empowerment Theory into its participatory approach and intervention to address broader family realities, which deviates from the traditional model of nutrition education. The research projects engage parents and Head Start staff as co-researchers and embeds the resulting empowerment-focused intervention into Head Start. Workshop participants will engage in a incorporation discussion about how Empowerment Theory in the CBPR process has identified benefits to those participating, seemingly acting as an intervention in itself, yet the benefits to the research is a culturally-tailored, topicallysalient intervention.

Part 3: Mpower: Empowering Mothers for Health

This project, funded by the Worldwide Universities Network, responds to the Shanghai Declaration and the United Nations General Assembly call to promote health literacy in parents and empower women as a global strategy to reduce non-communicable diseases (NCDs). Because many NCDs originate in early development and from health disparities, the maternal health literacy of women in poverty is especially vital. Maternal health literacy refers to the cognitive and social skills which determine the motivation and ability of mothers to gain access to, understand, and use

information in ways that promote and maintain their health and that of their children. Despite its importance, few studies have examined maternal health literacy; fewer still have focused on skill development or empowerment of women in poverty. Workshop participants will gain practical knowledge about how this project has been designed to develop a long-term and sustainable research plan to fill these gaps as part of a five-stage approach to develop a universal research strategy to promote health literacy in parents and empower women globally. Participants will also engage in a discussion about how this project is introducing an innovative community-based participatory method to the field of health literacy, and focusing on critical health literacy skills, empowerment, and health literacy for health protection and promotion -- all of which have been largely ignored in traditional health literacy research.

Through the use of case studies, skill-building activities and group discussions, by the end of this interactive training, participants will have:

- 1. Compared and contrasted health literacy definitions.
- 2. Identified benefits and challenges of conducting health

literacy research in clinical and community settings.

3. Explored the concept of health literacy and its

relationship with empowerment.

4. Examined a continuum of how health literacy and CBPR

can work together to inform each other.

5. Discovered how CBPR processes can be used to build

health literacy capacity at the individual and community

levels.

6. Reviewed research examples, including those for which

implementation of partnership principles was aligned

with health literacy capacity co-learning, and building

research capacity.

#124 The Relationship Between Parental Health Literacy and Health Knowledge, Behaviour and Outcomes in Children.

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Background: Health literacy of adults is closely associated with leading health indicators including physical activity and nutrition. Parents represent a critical subgroup among the general adult population, because they are not only responsible for their own health but as parents also for the health of their children. Previous research suggests that parents with poor health literacy are less likely to meet the preventive and health care needs of their children compared to caregivers whose health literacy is at least adequate increasing numerous health risks including poor childhood nutrition, obesity in children, exposure of children to secondhand tobacco smoke and poor oral health, mistakes in the administration of children's medications, higher rates of injuries, unnecessary visits to the emergency department as well as a lack of utilization of available preventive care services. However, most of the available knowledge is based on small sample sizes in a limited number of countries. The exact nature of the relationship between parental health literacy and children's health is not yet well understood.

Objective: At the example of Germany, we examined the relationship between parental health literacy and health knowledge, behaviour and outcomes in children. What is the level of health literacy among parents of school-aged children? Are there disparities in parental health literacy depending on socio-demographic factors? What statistical relationships between parental health literacy and the health and wellbeing of their children can be established?

Methods: As part of a cross sectional study, we collected data from children in 28 elementary and secondary schools in Germany as well as their parents. The parent questionnaire was completed by 4,217 caregivers and included household sociodemographic, health and general wellbeing

indicators as well as the short form of the European Health Literacy Survey Questionnaire (HLS-EU-Q16). The child questionnaire examined the children's health knowledge, behaviours and outcomes. If the child was younger than 11 years, the caregiver reported on behalf of their children (N=1,518). In all other cases, the children questionnaires completed the themselves (N=2,776). Bivariate and multivariate analysis covered parental health literacy, household demographic and socio-economic characteristics as well as health behaviours (nutrition, oral health and physical activity for all children; smoking, alcohol consumption and sexual activity for children 11 years and older) and outcomes (including BMI) in children.

Results: Among the interviewed parents, 14.9% showed excellent health literacy, 39.3% sufficient health literacy, 33.7% problematic health literacy and 12.1% inadequate health literacy. The major determinants of high parental health literacy were high socio-economic status, living in West Germany (territory of the Federal Republic of Germany prior to unification) as well as older parental age. In the multivariate model, only socioeconomic status remained significant. High parental health literacy was associated with positive health behaviours in children including higher consumption of vegetables and fruits, less consumption of sweetened beverages, regular tooth brushing as well as more frequent physical activity. The relationship between parental health literacy and smoking, alcohol consumption and sexual activity among children was not significant nor was the relationship between parental health literacy and children's BMI. Parents with high health literacy reported a better subjective health, a better quality of life and they judged their children as being healthier compared to parents with lower health literacy scores.

Discussion: Our results confirm a relationship between low parental health literacy and some problematic health behaviours in children including unhealthy eating habits, less physical activity and worse oral health. Hence, this vulnerable group should be monitored as parents with low health literacy may require additional support to improve their health knowledge, understand and use the available health information, navigate the health care system and with health-related decisions on

behalf of themselves and their children. The research suggests that strengthening parental health literacy might be an effective strategy for reducing health disparities and improving the health of children. As part of this effort, the central role of socio-economic status in explaining variation in parental health literacy scores cannot be ignored.

#125 Adapting the European Health Literacy Survey Questionnaire for children aged 9 to 10 – validation results and implications.

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Background: Today, there is growing consensus among researchers and policy-makers alike that the promotion of health literacy at an early age could be foundational for health literacy, health, and quality of life throughout the life course. For the sustainable promotion of health literacy, however, evidence is needed on the distribution of health literacy and its determinants among young people in different countries, cultures, and settings. Such evidence, however, is not yet available. To address this research gap, a study was conducted aiming to adapt the European Health Literacy Survey Questionnaire (HLS-EU-Q) for children aged nine to ten. The HLS-EU-O was chosen because it is a widely-used and consistently validated measure of subjective health literacy. The questionnaire addresses multiple facets of health literacy, as opposed to focusing solely on one health setting (e.g. healthcare) or one health topic (e.g. mental health). Thus, the HLS-EU-Q reflects a broad and advanced understanding of health literacy, but it has never been used or adapted for the assessment of health literacy among children.

Methods: A pool of adapted and novel items was generated based on the HLS-EU-Q, its underlying framework, and the literature in epidemiology and childhood studies. In cognitive pretest, items were tested among n=30 children, and a selection of items were tested in a quantitative paper-and-pencil classroom survey among n=907 children attending

fourth grade of n=32 schools in North Rhine-Westphalia, Germany. Item analysis was conducted for the selection of items, and exploratory and confirmatory factor analysis were conducted to explore the factor structure of the instrument. Discriminant and concurrent validity were explored by correlation with indicators of self-efficacy and functional health literacy, respectively.

Results: From a pool of n=102 items, n=39 items selected for cognitive pretest. questionnaire was generally well understood, but certain items were misinterpreted by some participants. The n=26 best-performing items were tested quantitatively, and a 16-item health literacy scale was developed based on item analysis. These 16 items evoke less than 8% missing responses, have an internal consistency of α =.800, and an item-total correlation of more than .310. Factor analysis vielded a one-dimensional scale, instead of the three- or four-dimensional factor structure implied by the HLS-EU-Q. Correlation of health literacy mean scores were ρ =.285-.303 (p<.001) for self-efficacy, and r=.116 (p<.001) for functional health literacy.

Conclusions: This is the first study adapting and validating a child-specific questionnaire based on the HLS-EU-Q. A 16-item scale was developed that shows satisfactory reliability and represents a promising approach towards the measurement of subjective health literacy among children. The questionnaire can be used for the assessment of subjective health literacy among German-speaking children aged nine to ten, which will facilitate the process of building evidence on the level and determinants of health literacy in this population. Furthermore, this study can serve as a starting point for comparative studies on children's subjective health literacy in different settings and countries. However, further research is necessary to replicate the reported findings, and to further explore the validity of the questionnaire. For instance, it could be demonstrated that health literacy mean scores were more highly correlated to self-efficacy than to functional health literacy, which indicates that the constructs 'subjective health literacy' 'functional health literacy' might share less commonalities than previously thought. Thus, the presented 16-item scale will have to be validated against more similar measures in future studies to evaluate its concurrent validity. However,

satisfactory discriminant validity was successfully demonstrated for the scale, indicated by a low to moderate correlation with indicators of self-efficacy. Lastly, this study can provide important stimuli for the development of a theory of health literacy in childhood, as it was suggested by the data that there is only one major health literacy factor, instead of three or four factors for different health domains (i.e. healthcare, disease prevention, health promotion) or action areas (access, understand, appraise, apply health information) implied by the HLS-EU-Q.

#126 Say What? Health Literacy! Health Literate Health Care Organisations: From Policy to One-on-one Interactions.

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Background: Low health literacy skills result in poor health outcomes, more hospitalizations, and inefficient health expenses (WHO Europe, 2013). Until recently, research mostly focused on improving health literacy skills of patients themselves. However, promoting health literacy demands a multiparty approach. Thus, the role of health care organizations and care professionals providing information and aiding in health

Bach et al. (2012) proposed the concept of health literate health care organizations to point out and screen how organisations handle health literacy issues of patients. As a starting point, they considered organizational health literacy to be characterised by ten attributes.

decisions should also be emphasized.

Objectives: (1) to determine characteristics of health literate organisations from a Flemish care system perspective, (2) to investigate current knowledge of the concept of 'health literacy' among care professionals as well as their health literacy skills, 3) to develop an inspiration guide with actions for each health literacy attribute, (3) to integrate and test these attributes and interventions in an easy-to-use online tool, and (4) to explore the support needs and barriers of care organisations in order to facilitate an improvement of their health literacy.

Methods: A literature review, focus group and expert panel discussions, a questionnaire, and qualitative interviews with professionals and patients from a general and psychiatric hospital and community centre were performed. A constant comparative approach was used to identify the organizational health literacy characteristics, the support needs and barriers.

Preliminary results and conclusion: Most respondents were unfamiliar with the concept of health literacy at first; after exploring the concept, the ten attributes of Bach et al. (2012) were identified and confirmed by the Flemish health care professionals and patients (on a general level that is, as these attributes are considered to be universal, but because of their 'universality', attributes on a 'lower' or 'deeper' level may not be included). Care professionals already provide information in different ways including orally and written (i.e. brochures), always check whether patients have understood them by commonly using the teachback method, but so far have received little or no training on how to improve their health literacy skills.

Conclusion: Patients and professionals supported the ten attributes of organisational health literacy. Training of personnel is not commonly organized. A useful tool was developed to explore to which degree organisations are (becoming) health literate and to guide them in their effort.

#127 Rebuilding trust and confidence in the cervical screening programme -CervicalCheck education and information materials with health literacy at its heart.

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The health service is responding to a very complex set of problems related to the national cervical screening programme, CervicalCheck.

Over recent months, public confidence in the screening programme has been shaken, as stories emerged of women who developed cervical cancer, and were not given information about earlier screening tests that could have given an opportunity for earlier intervention.

A range of groups and health service teams are working to respond to the problems within this system, and provide support to the women directly affected and to their families. A major component of this work is integrating health literacy into our response and ensuring any new materials developed can be read, understood and acted on by women using the screening programme.

A statutory inquiry – www.scallyreview.ie - was set up to examine and report on the complex events and facts associated with this situation. The Scally Review has produced recommendations on how the people affected can be supported, and how the service can be changed and improved.

On June 12th, whilst recognising that the "provision of information to women in Ireland is comparable with that available elsewhere and, in some respects, is better" Dr Scally recommended that the information materials that support the cervical screening programme be enhanced as follows:

- 01. A more comprehensive guide to the Cervical Check screening programme should be provided online so that women who wish to learn more about the programme can obtain the information easily.
- 02. The information statements provided to women about the limitations of the tests should be more explicit about the possible reasons why screening might miss abnormalities that are present, as these can result in the development of cervical cancer. This information should be included in the leaflet sent to all women with their screening invitation, and in the information sheet accompanying the consent form.
- 03. The information for women accompanying the consent form should guarantee that they will have full and open access to their cervical screening record on request.
- 04. The information for women accompanying the consent form should guarantee that should there be a problem or error of any significance with the screening or reporting process, open disclosure of all the details will take place in a timely, considerate and accurate manner.

Objective: To begin to rebuild trust and confidence in the cervical screening programme.

• To make sure all women taking part in the cervical screening programme have a good understanding of the benefits of screening, and the limitations, and have confidence in an open, transparent and accountable service with women's needs at the centre.

Methods: A HSE working group consisting of a mix of expertise was established to progress the implementation of Dr Scally's recommendations. The development process was supported by a reference group that included; a patient nominee, experts in the area of cervical cancer, screening and research, clinical, adult literacy (NALA) and international experts from International Cervical Cancer Prevention Association (ICCPA), Sense about Science and online communication.

The development process:

- qualitative research carried out to understand women's knowledge of, and attitudes to cervical screening
- an ESRI paper on communicating risk commissioned to assist with the development process
- testing of information materials with service users, women and their family members who have been affected by the controversy (through a Public Patient Involvement panel)
- reviewing content for accuracy and identifying information gaps
- reviewing content for clarity and ease of understanding in conjunction with Nala
- creating and testing online materials that clearly explain the screening process
- reviewing the content after getting feedback from NALA, the ESRI and clinical input
- clinically and legally proofing all information materials
- review of materials through QPULSE which is a Quality Management Information System

Results: In October, a suite of easy to read health education and communications materials to describe cervical screening was published. The information materials have been updated to provide information on: the benefits and limitations of screening, descriptions of symptoms to watch out for and information about access to records and open disclosure.

These updated easy to read materials are:

- invitation letter www.hse.ie/eng/cervicalcheck/screeninginformation/cervical-screening-invitationletter.pdf
- information sheet www.hse.ie/eng/cervicalcheck/screeninginformation/information-sheet-on-cervicalscreening.pdf
- leaflet

https://www.hse.ie/eng/cervicalcheck/screening-information/important-information-about-your-free-cervical-screening-test.pdf

- website www.hse.ie/eng/cervicalcheck/
- video and visuals

Discussion: While no screening programme can detect every cancer, we know that the limitations of screening are not explained in a way that is readily understood by women, and this needs to improve, so that women can make an informed decision about taking part. In addition, in the rare cases where a woman who has been screened develops cervical cancer, information about her history and any clinical review or audit of her case must be shared with her in an open and transparent way.

Working with the National Cancer Registry Ireland and with Cerviva, we listened to the views of women and their families who have been affected by recent developments. We listened to women of different ages and in different parts of the country through research and testing and worked with GPs, practice nurses, health promotion workers and online experts. We also worked with different organisations like NALA and the ESRI to get their views on the best approach to describing complex information in a meaningful and easy way.

The working group with support from the reference group have worked hard to improve the information materials that are provided and available to women in relation to cervical screening and to address our shared purpose, which is to restore and rebuild trust and confidence in our cervical screening service. It is important to note that this is not a once-off process. We will continue to listen to the views of people and work to improve our information.

Our workshop or symposium will show the journey how we have put health literacy at the core of our work form the initial cervical check information materials, through the qualitative research following the cervical check incident to the revised materials and how they have been received by the women using the programme. #129 Health literacy workers who act in emergency rooms of a public Hospital in Brazil.

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Background: Health Literacy (HL) is defined as the ability to understand, manage and invest in actions for health promotion in many contexts. The HL allows you to rethink your lifestyle and enhance health promotion without disregard the social determinants. Objectives: identify the literacy level of health workers who work in health care, emergency sectors and emergency room of HC/UFTM/Ebeserh, in the city of Uberaba-MG. Methods: data collection established a convenience sample with a total of 216 people working in emergency room, HC/UFTM: emergency room for adults and children, hospital, quality and patient safety core. For data analysis, the SPSS version 22.0. Results: 141 questionnaires were applied (29 male and 112 female participants), placed in the emergency room of HC/UFTM. These participants 31.91% are from the administrative sector and from de health care sector, 40.43% are not graduated and 27.66% are graduated. Research shows that 7.2% of participants presented inadequate level (HL); 33.8% presented problematic level (HL); 35,3% presented suficiente level (HL) and 23.7% presented excellent level (HL). Although the research identified that 59% of workers had a level of (HL) ranging from excelente enough, worries that 41% of them presented inadequate or problematic levels. Discussion: the research confirms the need to enlarge the permanent health education for the HC/UFTM/Ebserh workers, with a focus on the potentiation of the capacity of understanding, management and investments in favor of ao care with their own health, quality of life and life in health and indirectly contributing to the quality of services rendered.

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#130 WHO National Health Literacy Demonstration Projects (NHLDPs): European Action Network for intervention development and implementation.

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Introduction: At the 9th Global Conference on Health Promotion in Shanghai 2016, health literacy was recognized as one of the key health promotion pillars to achieve 2030 SDG Agenda. A good understanding of health literacy of people and communities can support focused investments in health development through redesign of health systems to respond to the health literacy needs of communities and through equipping individual citizens. However people and communities with low health literacy have the potential to be left behind through reduced access, knowledge and understanding of healthy behaviors and health opportunities.

New developments in health literacy approaches to understand and respond to individuals and communities will accelerate development of new interventions and/or improve the reach and impact of current interventions. Consequently, WHO and member states are investing in improving health literacy through several initiatives. One of these is led by WHO's Global Coordination Mechanism for

the Prevention and Control of NCDs (GCM/NCD) through its Global Working Group 3.3 on Health Education and Health Literacy for NCDs (www.who.int/global-coordination-mechanism/working-groups/working-group-3-3/en/). The Working Group generated National Health Literacy Demonstration Projects (NHLDPs) which are being implemented in Europe and other regions to generate evidence on how health literacy can accelerate NCD intervention development, implementation and scaling-up. To date, five teams

The symposium will be interactive with first author as moderator

in Europe have been designated as WHO NHLDPs.

Objectives: 1. Increase awareness of methodological approaches to health literacy intervention development and the potential role of WHO NHLDPs to advance health and equity.

- 2. Share interventions currently underway in several countries (Portugal, Denmark, France, Slovakia) being applied in diverse health sectors and the life course.
- 3. Demonstrate health literacy interventions, including setting them up, focusing on impacting health literacy of individuals through to impacting the health literacy responsiveness of health services.

Presentations: Introduction to the WHO Global Coordination Mechanism (GCM) for Noncommunicable Diseases (NCD) Global Working Group, the rational and principles of NHLDPs, and the European Action Network to support implementation of NHLDPs.

Portugal: This project, focusing on diabetes, will cover the development of extensive cross-sectorial partnerships followed by health literacy assessment using the Health Literacy Questionnaire (HLQ) as well as to apply the Organizational Health Literacy Questionnaire (Org-HL) to the Portuguese Diabetic Association. Two Portuguese municipalities are participating, alongside patient groups and practitioners to identify local health literacy strengths and needs and co-produce interventions with stakeholders to diabetes outcomes and prevention of childhood obesity.

Denmark: The Heart Skills Project focus on making NCD rehabilitation services 'fit for diversity' by

improving organisational health literacy. We do this in a Danish municipal rehabilitation unit by combining organisational as well as individual health literacy assessment tools to inform a cocreational intervention development process. Specifically, the Organisational Health Literacy Responsiveness (Org-HLR) process was initially applied in our setting followed by the Ophelia (OPtimise HEalth LIteracy and Access) process. To date, an organisational health literacy action plan has been developed and together with a Health Literacy Questionnaire (HLQ)-based health literacy profile (n=161, 6 cluster solution) they provide the needs identification necessary to guide patients, staff and managers in the ongoing interventions development process.

France: This project focuses on three NCDs; diabetes, kidney and cardiovascular diseases. First, health literacy assessments were undertaken in hospital outpatient settings, urban community settings and in remote rural areas to reveal the current gaps in health literacy using the HLQ and semi-directive interviews. Assessment of digital HL using the e-HLQ (e-Health Literacy Questionnaire) will complete these data. The project then engages communities, patient associations, healthcare professionals, and government agencies in planning innovative actions to; 1) enhance the quality, relevance, and pragmatic nature of health information and individual medical files available using the regional digital portal; 2) Be aware of those who have not access or cannot get access to internet, and; 3) discuss the implementation and scaling-up if necessary of organizations to respond to health literacy needs at stake.

Slovakia: This project focused on several NCDs groups (end stage renal disease - dialyzed patients, patients with cervical dystonia, cardiovascular diseases, gynecological patients with cancer of endometrium and endometriosis, dental hygiene clients-periodontitis, allergic rhinitis patients) with primary focus on dialyzed patients. The aim of the project is to utilize health literacy profiles in to improve effectiveness of chronic disease management. Based on the multidimensional concept of health literacy and using the HLQ and other assessments, the project will: 1) identify profiles of health literacy among clients typical for the selected types of chronic diseases and levels of

disease progression, 2) assess level of influence of cognitive, social, and personality factors on development of health literacy, 3) analyze behavioural manifestations of health literacy level and profile and their associations with chronic patients' functional health status and quality of life, 4) longitudinally monitor associations of functional health status and fitness with progression, eventual complications of a chronic disease and mortality of chronic patients, 5) longitudinally monitor associations of health literacy profile and level with progression and eventual complications of a chronic disease.

Progress on other NHLDPs will be outlined including from Norway (co-designed interventions between hospital and municipality for people with COPD) and Netherlands (musculoskeletal health across three cities from clinic to community).

#131 The health literacy of workers who act in emergency rooms and emergency of Clinical Hospital (HC/UFTM-SUS).

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Background/Objectives: Health Literacy (HL) is defined as the capacity to comprehend, manage and invest in actions to the promotion of health in a number of contexts. The (HL) enables to rethink the life style and potencialize the promotion of health without disconsidering the social determinants. The Objective is identify the level of health literacy workers who act in the assistance of health,in the emergency rooms and emergency rooms of HC/UFTM-Ebeserh in the city named Uberaba-MG

Methods: The data collection established a sample by convenience with a total range of 216 people who act in the emergency rooms and HC/UFTM emergency rooms: Adult and children emergency room, front desk emergency room, holst, SUS fácil, Quality Nucleous and Patient security nucleous. To the data analysis, it was used the SPSS version 22.0.

Results: It was applied 141 questionnaires (112 female and 29 male participants), placed in the emergency room of HC/UFTM. From these participants 31,91% are from the administrative sector; 40,43% from the high school level health assistance sector and 27,66 % from the College Health assistance sector. The investigation points outs to 7,2% of the participants presented an inadequated level of (HL); 33,8% presented a problematic level of (HL); 35,3% presented a sufficient level of (HL) and 23,7% presented an excelent level of (HL). Despited of identifying that 59% of the workers presented a level of (HL) ranging from sufficient to excellent it is worrying the fact that 41% of them presented an inadequated or problematic levels of (HL).

Discussion: The research ratifies the necessity of broadening the actions of permenent health education of the emergency workers of HC/UFTM-EBSERH focusing on potencializing the capacity of comprehension, management and investiments favorable to the care with their own health, life quality and health life style, and indirectly contributing to the quality of the provided services.

#132 The impact of health and ehealth literacies on perception of key public health policies.

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Introduction: The implementation of public health policies may rely on diversified types of interventions applied in the interplay with modern societies. There is a mounting evidence that legal and fiscal measures may be more effective than approaches based on education and communication in health promotion. In this context, the sugar tax, higher health insurance rates for persons with unhealthy lifestyles and preserving adequate vaccination rates belong to the hottest issues discussed in public fora.

Objectives

The main objective of the study was the analysis of key factors, including health literacy (HL) and ehealth literacy (eHL), determining the attitudes towards key public health policies and/or interventions in Polish society.

Method: The analysis was carried out on the data obtained from the survey encompassing a nationally representative sample (n=1000) of the adult population in Poland. It was conducted with the application of the computer-assisted telephone interviewing technique. The questionnaire used in the survey consisted from the eHealth Literacy Scale (eHEALS), a short version of the European Health Literacy Survey questionnaire (HLS-EU-Q16), the cluster of items assessing subjective perception of health, the use of health services, the use of modern technologies and attitudes toward four established or emerging public health interventions and the part exploring sociodemographic status of respondents. The respondents were asked about their perceptions of the proposals of the introduction of the sugar tax and increased health insurance rates for smokers as well as about their attitude toward vaccination and health-related social campaigns. Logistic regression models were developed with variables expressing above opinions as dependents variables, and HL, eHL, subjective assessment of health status, the use of health services, the use of the Internet and mobile telephony independents sociodemographic factors as variables. Uni- and multivariable models were implemented.

Results: The analysis was performed among 849 respondents who were Internet users. Women made 47.9%, residents of rural areas – 26.1% and urban areas with the population at least 100 000 – 21.8%, persons with University masters education level – 29.4%, with licentiate degree – 13.3%, and those with high school education 43.7% persons. There were 32.7% of singles and 57.2% of married persons in the study group. Respondents professionally active made 61.1%, retired or on a disability pension – 19.2%, students and pupils – 9.8%, and 9.9% of unemployed. The persons with inadequate HL made 6.7%, with problematic - 32.5%, sufficient – 43.8% and excellent -11.9% of the study group. The mean eHL score calculated

from eHEALS was (mean±standard deviation): 28.91±5.36.

The univariate analysis demonstrated that HL played a significant role in two, and, eHL in three models. The age of respondents was a significant determinant in all four, marital status and type of professional activity in three, and income per capita in the family in two models. Furthermore, daily Internet use and subjective health status assessment were also significant determinants in two models. Hospital admission in the preceding year and suffering from chronic disease was meaningful only in one model each.

Multivariate analysis, revealed that the attitudes toward the introduction of the sugar tax depended on eHL score (all further values presented as odds ratio (OR), 95% confidence interval (95%CI); 1.03, 1.01-1.07, p=0,05) and subjective health status (unsatisfactory vs. satisfactory, 2.33, 1.11-4.85, p=0.025). HL has not maintained a significant impact (OR, 95%CI: 1.02, 0.99-1.05, p=0.089). The opinion about the proposal of higher insurance rates for smokers depended on age (OR, 95%CI: 1.01, 1.00-1.02, p=0.012), education level (the lowest level of education vs. high school level: 0.59, 0.37-0.94, p=0.025, and, vs. university master level: 0.60, 0.37-0.99, p=0.048), and income per capita (the lowest level of income vs. the intermediate level, 1.73, 1.07-2.79, p=0.026, and vs. the highest level, 1.76, 1.13-2.74, p=0.013). The impact of HL score and eHL score was insignificant (1.02, 0.99-1.05, p=0.076, and 1.03, 0.99-1.06, p=0.083, respectively). The opinions about safety and effectiveness of vaccinations depended on age (1.02, 1.01-1.03, p=0.018), the use of mobile phone (0.22, 0.05-0.99, p=0.048), and marital status (single vs married, 1.55, 1.06-2.27, p=0.024). Finally, the conviction about the effectiveness of health-related social campaigns was related only to eHL score (1.05, 1.02-1.07, p=0.001) and daily Internet use (0.52, 0.35-0.79, p=0.002).

Conclusions: Only the age of respondents reveals a consistent impact on opinions about key policies planned or implemented in public health domain. The eHL revealed a more pronounced impact than HL on perceptions of interventions aligned with the most important challenges in the domain of health promotion in a nationally representative sample of Polish society. Unexpectedly, the factors related to the health status or the utilization of health services showed only a limited effect on analysed attitudes.

#135 Health literacy is associated with quality of life of women with breast cancer.

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Background: In order to have an adequate health care, it is necessary to consider the health literacy of the population. Organizations, services and professionals need to plan, execute and evaluate actions based on health literacy. The more inadequate the health literacy, the worse the health outcomes. This is true mainly for the cancer patients, who need to navigate a health care system that is usually complex and fragmented while they wait for diagnosis and treatment plans (Koay, 2012).

Also, studies have pointed that there is a direct relationship between low and medium health literacy with lower quality of life scores (Halverson et al., 2015).

Among the different anatomical sites for neoplasms, breast cancer is the second most incident in the world and the fifth cause of mortality. Considering only the female sex, it is the leader in incidence and mortality (FERLAY et al, 2018; Bray et al., 2018).

Objective: The aim of this study is to evaluate if there is a relation between health literacy and quality of life of breast cancer patients.

Methods: This is a cross-sectional study with a quantitative approach. It was performed in the city of Fortaleza, which is the capital of Ceara, a state located in the Northeast of Brazil, inside a referenced institution specialized in Oncologic care, that is a part of the Brazilian Public Health System. Data was collected through interviews occurred between March and October of 2017 in a

convenience sample of 201 breast cancer patients. This research was submitted and approved by the Ethics Committee in Research with Human Beings of the Institution responsible for its execution, under the number 59485816 9 1001 5078.

Demographic and socioeconomics variables were collected regarding health literacy and quality of life. For the health literacy it was used the Health Literacy Questionnaire (HLQ) (Osborne et al., 2013), which has 9 (nine) scales related to the perception of the individual about: 1. Feeling understood and supported by healthcare providers; 2. Having sufficient information to manage my health; 3. Actively managing my health; 4. Social support for health; 5. Appraisal of health information; 6. Ability to actively engage with healthcare providers; 7. Navigating the healthcare system; 8. Ability to find good health information; 9. Understand health information well enough to know what to do. The quality of life was investigated through the Portuguese version of WHOQOL-BREF (The WHOQOL Group, 1998). This instrument has 26 questions. The first and second of them are related to quality of life in general. The following 24 are divided in 4 domains: Physical, Psychological, Social and Environmental. In both questionnaires the answers are cathegorized according to a Likert scale, with the best scores indicating a high health literacy level and a better quality of life, respectively. The association between these variables was evaluated by the Spearman correlation test, with p < 0.05 as a significance level.

Results: The average age of the patients was 50 ± 10.6 years old. 46.8% of them had up to 8 schooling years, 52.2% were married, 75.1% were catholic, 34.8% were away from work due to illness, 23.4% were retired and only 18.4% were employed at the time of the interview. 76.6% had a family income of up to US 508.00.

Regarding the health literacy, the scores were low (< 3.0 points) in a maximum of 5 possible points), except in scales 4, 6 and 9, that had averages of 3.17 (0.04), 3.46 (0.06) and 3.16 (0.06), respectively. In relation to the quality of life, the scores were

In relation to the quality of life, the scores were above average in all the evaluated domains, being the lowest the environmental 3.25 (0.04), and the highest the social 3.75 (0.05).

There was no strong correlation between health literacy and quality of life. But, there was a weak positive correlation between scales 2 (r = 0.309; p)

< 0.001) and 6 (r = 0.334; p < 0.001) and the psychological domain of quality of life; between scale 6 (r = 0.314; p < 0.001) and social domain of quality of life; between scales 1 (r = 0.319; p < 0.001), 2 (r = 0.369; p < 0.001), 5 (r = 0.349; p < 0.001), 6 (r = 0.390; p < 0.001), 7 (r = 0.395; p < 0.001), 8 (r = 0.413; p < 0.001) and 9 (r = 0.312; p < 0.001) and environmental domain of quality of life. Also, there was a weak positive correlation between scales 2 (r = 0.321; p < 0.001), 5 (r = 0.305; p < 0.001), 6 (r = 0.380; p < 0.001), 7 (r = 0.339; p < 0.001) and 8 (r = 0.353; p < 0.001) and general quality of life.

Discussion: The studied population had low income and poor schooling, having low scores on the scales of health literacy. The quality of life scores were compatible with a good perception of it by the interviewed and it was similar to the one obtained in other studies involving this same type of population group. Despite the weak positive correlations observed between health literacy and quality of life, it was verified that scale 6 (Ability to actively engage with healthcare providers) was correlated to most domains (psychological, social, environmental and general). Also, the domain that presented a correlation with most of the scales was the environmental. The professionals responsible for the health care need to act, within their scope of in the psychological, social and environmental conditions present in the life of these patients in order to improve the care quality and favor the ability to actively engage with healthcare providers.

#136 Adolescents m-health use and health literacy impact.

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Background/Objectives: The ubiquitous routine of m-health apps usage, is today a new characteristic of those using mobile devices. Nevertheless little is known about adolescents' use of these apps and impact on health promotion. This research aims to identify the association between health literacy(HL) and mobile apps towards health promotion in adolescents in Portugal.

Methods: The study is observational, cross-sectional and includes both quantitative and qualitative data. By the means of a survey (CAWI) data was collected on HL (using the HLS-EU-PT instrument validated to Portugal) and adolescents' use of apps. The sample (n=293) includes students from the district of Santarem with ages between 15 and 19 years old.

Results: The most relevant apps used are about physical activity (40%), feminine health (18,3%), sleep apps (3,3%) and hydration apps (1.7%). Female adolescents use more mobile apps than males. While 38.2% of the adolescents' have low levels of HL, 10,4% are using apps in the context of disease management while 46,9% use health promotion apps. There is an association between HL (for the health care dimension) and the use of mobile apps aiming at health promotion.

Discussion: These results show the growing need of public health promoters to get more immersed in the everyday apps utilization among adolescents. Little is known about how these apps are built, how relevant are they to increase health literacy and promote well-being. Some apps may be used in a different context than the one that was at the basis for their creation (like women's health apps and birth control usage). HL levels are fairly good in this sample (when compared to results focusing adults' HL in Portugal), but there can be adverse health effects with the use of current most popular mobile apps (since they are not age sensitive, for example).

#137 Digital Health Literacy for a more Equitable and Health Literate Society – Opportunities and Challenges Throughout the Lifespan.

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Introduction: Digital health literacy (DHL) is becoming increasingly important in helping people

access health information, interact with the health and public systems and ultimately to manage their personal and family's health. Digital health literacy entails skills related to all aspects of health literacy – functional, interactive and critical. Yet, as the concept evolves, we understand that the social, cultural and generational contexts play an important role in influencing DHL skills. Research shows that appropriate and innovative interventions can positively influence DHL, and contribute to health and well-being. Yet, the principles defined in the UN Sustainable Development Goals must be applied to ensure that in the digitalized world, no one is left behind.

Objective

- To develop an awareness of the evolving concept of digital health literacy in context: definitions, measure
- To learn of specific initiatives in Europe and beyond to understand the role of digital health literacy in empowering people to actively engage in their own health
- To discuss the significance of digital health initiatives for promoting equity in health opportunities and pitfalls
- To explore the application of digital health literacy in local settings and populations
- To examine the role of digital health literacy within the larger context of health literacy and digital health

Workshop Format (90 minutes)

- Introductory remarks (20 min.): The evolving definition of digital health literacy (DHL) and e-health literacy (eHL), digital divide or digital development throughout the lifespan, the complexity of DHL/eHL in context
- Case studies (20 25 minutes min.): (1) using text messages for promoting self-management of diabetes in a community setting; (2) Using emerging digital technology to promote health literacy, self-management and wellbeing (3) Using massive open online courses (MOOCS) to enhance digital health literacy among diabetes patients (4) Developing technology skills to reduce the digital divide; examples from the UK.
- Exercise and small group discussion (25 min.) focusing on the following questions:
- o Who are the special populations that need support for promoting digital health literacy?
- o What kind of interventions can promote digital health literacy in your country/organizational context?

- o How can we develop digital health literacy skills using culturally appropriate methods?
- o What resources are necessary for implementation and evaluation?
- Summary of discussion and conclusions (15 min.).

#140 Children's perceptions and Cancer: digital storytelling as a health literacy strategy.

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Approximately 7 million people die from cancer each year (World Health Organization, 2014). Schools have unique characteristics and ability to construct behavioral directions at crucial ages. According to WHO, cancer prevention efforts should begin at an early age and be maintained throughout school different levels (WHO, 1995). The model of Health-Promoting School has received increasing recognition in Portugal and Oncology Prevention has been a recurring theme in several actions that involve the interaction between several actors that go beyond the school community. This study was developed in order to implement two complementary actions, aimed at students from four different schools: 1. Evaluation of the perception of cancer from a questionnaire with closed-ended questions; 2. Conceptualization and evaluation of an awareness raising action, using programmatic contents of the school curriculum and adapting it to innovative multimedia resources. From the first point, we achieved the profiling of 625 students between the ages of 9 and 13. The results show that the overwhelming majority of children (98.2%) have heard about cancer, but in one of the schools the percentage of students who consider cancer a contagious disease reaches 12.6%. Risk factors for the development of this type of disease are correctly identified by most of the students (72.9%). Still, nearly 40% of them have the perception that cancer can be originated from a flu. The need to provide schools with a more effective response to emotional management in cancer cases led to the development of an intervention with innovative multimedia resources, to reinforce positive behaviors and more assertive knowledge. The action of raising awareness is based on an animated video narrated

by a teenage cancer survivor, which tells the story of a boy who helps his brother go back to school, demystifying the illness with his classmates. Of the 625 students participating in this experiment, more than 96% were able to correctly identify risk factors associated with cancer, treatments and positive strategies for living with patients. Of the 21 teachers involved, 18 considered highly relevant the adequacy of new multimedia resources and digital storytelling for the dissemination of health education contents.

#141 Serious Games: a prescription to fight Pediatric Cancer.

Dr. Hernâni Oliveira¹, <u>Professor Helena Lima¹</u>, Professor António Coelho¹, Professor Rui Rodrigues¹

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Background: During the past few years, scientific literature presented an association between increased physical activity levels in cancer patients and an improvement in the quality of life during hospitalization. In particular, physical functioning is increased, anxiety is reduced, and social integration is encouraged. Considering the fact that physical activity plays a vital role in the physiological and psychosocial development of children, therapeutic exercise in pediatric oncology is particularly important to create a better body response to treatments. However, there is still a lack of comprehensive and evidence-based data in the field of exercise interventions in pediatric oncology.

This work intends to present the conception and the evaluation results of a 2D video game for tablets, the Hope Project, which was developed to solve major issues related to treatments adherence and the sedentary lifestyle of children between 6 and 10 years old, that are diagnosed with cancer. The serious game component allows building a tool that goes beyond entertainment and has the goal to teach cancer subjects, increasing adherence to treatments. On the other hand, the exergaming technology seeks to encourage the practice of physical exercise, using the front camera of mobile devices. Methodology/Approach: A characterization study was conducted, with the release of a survey for 78 children, to understand their routines in relation to entertainment. A prototype of the video game was then developed by a multidisciplinary team of informatic engineers, designers, and oncologists according to the children attitudes and beliefs towards cancer. This videogame tells a story of a superhero whose superpowers are based on the fears of hospitalized children. This prototype was evaluated in controlled sessions with 13 children with cancer, measuring the intrinsic motivation of the participants, as well as the exergaming and the usability components.

Finding: The results of the characterization study prove that video game for tablets is the indicated tool to try to address the problems identified. 94.5% of children who have played videogames on tablets really enjoy playing on these devices. The implementation of the first Hope Project prototype reached high levels of intrinsic motivation on children with cancer, with a mean of 77% of the participants being highly motivated in all the evaluation criteria. The video game entertains the children and the extreme motion technology offers a robust solution for the implementation of exergaming challenges, using the front camera of mobile devices in different scenarios. The main menu and buttons present in the different challenges are logical, minimalist and consistent. The prototype use also showed an 80% increase in children's level of knowledge about cancer.

Conclusion: Video Games can be an important tool to disseminate knowledge about cancer in hospitalized children, improving at the same time their physical condition. The combination of a serious game component with the exergaming technology can facilitate a change of attitudes in children, promoting therapeutic adherence and decreasing sedentary lifestyle.

#142 Evaluation Phases of an Oral Health Literacy eBook for Children: Curriculum Refinement and User Feedback.

<u>**Dr. Valerie A. Ubbes¹**</u>, Dr. Christopher Wolfe *Miami University, Oxford, United States*

Background. The Digital Literacy Partnership is an academic website with three health-related databases and one open access curriculum called the eBook for Oral Health Literacy©. The Oral Health Literacy eBook is a new genre of literature available for people with low and emergent literacy

skills. The curriculum is designed as a visualtextual-gestural narrative with lexical word patterns that highlight a cognitive skill of decision making or goal setting. Photographs show children practicing oral health hygiene habits alone and in small peer and family groups to promote interactive health literacy. The scripts describe the thinking and salient beliefs of the children who are modeling health habits in 10 different slides. Purpose. The goal of the project is to describe and explain the three evaluation steps that occurred to refine the design template then promote the use the eBook for Oral Health Literacy© by parent-child pairs. Procedures. The first step was to conduct an evetracking study to determine where parents and teachers focused their eye gazes on the written script and/or the behavioral photographs. The second step was to conduct a verbatim versus gist inferences evaluation on sentence construction. The third step was to evaluate the readability of the 15 chapters of the eBook for Oral Health Literacy using the Flesch-Kincaid test. And the fourth step was to implement an online assessment of parents and their child after they read one chapter of the eBook. The eBook chapters have an aural (auditory) component that reads the text to children to increase the likelihood that learners will be able to comprehend the text and develop fluency skills that lead to higher understanding of the steps needed to practice oral health hygiene habits. Through an online survey from a Qualtrics platform, the parent-child dyads will answer pilot questions on self-care self- efficacy, which is a psychological concept that focuses on children's confidence in their ability to perform relevant behaviors in a specific situation. For the purposes of the study, self-care self-efficacy conceptualized as "one's perceived ability to perform relevant self-care activities" as a component of self-management. Results. We found significant differences in how the two groups, parents and teachers, visually processed slide content. When the text and picture both appeared on the slides, teachers spent 63 percent of their time looking at the text and 13 percent of their time looking at the picture. In comparison, parents spent 57 percent of their time looking at the text and 21 percent of their time looking at the picture. We used Coh-Metrix to analyze the Oral Health Literacy eBook for the Gist Inference Score (GIS). We found that the text earned an overall GIS=0.10. An analysis of the components expressed in Z scores

presented in the research graphic paints a more detailed portrait of the eBook with respect to the Fuzzy-Trace Theory. Readability scores were found to be 6.82 grade level for the entire curriculum. Pilot testing of the questions for self-care self-efficacy is ongoing with data collection from 300 parent-child pairs. Results will be analyzed with descriptive and inferential statistics and shared as a national model for developing cognitive skills for oral health behaviors through the mediator of health literacy.

#144 The impact of health literacy on screening for cervical cancer in Reunion Island (South Indian Ocean).

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Context: Cervical cancer is a public health problem in Reunion Island. It has the third-largest cancer rate with a standardized incidence and mortality rate higher than those estimated for the French metropolitan area.

There are only two ways to limit the burden of cervical cancer: 1/ the vaccination of young girls aged 11 to 14 years against two types of HPV; 2/ the screening, every three years, of women from 25 to 65 years old by pap smear. The latter makes it possible to significantly reduce the mortality of cancer of the cervix. According to a screening campaign conducted in Reunion in 2008, the PS coverage rate was only 56.1%.

Non-participation in cervical cancer screening is reported to be mainly associated to socioeconomic and demographic characteristics. Moreover, other studies have shown that a limited level of literacy affects health behaviors such as participation in various screening operations (Lindau et al., 2002).

Objectives: To measure the pap smear coverage rate in Reunion Island and to highlight the association between the "not up to date" status of cervical cancer screening and the level of health literacy.

Method: A survey was conducted between March and June 2017 by telephone interviews among a sample of 1000 women aged 25 to 65, living in Reunion Island. An adjustment of the sample was performed by applying weighting in univariate analyzes. The screening coverage rate was estimated by the report of at least one pap smear performed in the prior 3 years. Health literacy was measured by the Module 3 "Actively Managing my Health" of the Health Literacy Questionnaire (HLQ). A score greater than or equal to 3 was considered to represent a high level of health literacy.

Health literacy and other variables retained following univariate analyses were introduced into a multivariate logistic model using a step-by-step procedure. The used significance threshold was 20% in univariate analyses and 5% in the multivariate analysis. All analyzes were performed using Stata 12.0 software.

Results: The average age of our sample was 43.7 years, and 68.2% had a health literacy score greater than or equal to 3. Almost all participants (96.7%) had realized a pap smear test in their lifetime. For 88.0% of women, the last smear test was performed less than 3 years ago. After adjustment on age, the probability of not being up to date for smear test increased in women who have low health literacy (score <3) (ORa=3.1), who benefited from free universal health coverage for people with low (Couverture Maladie Universelle resources Complémentaire "CMUC") (ORa=1.9), those with a low income per unit of consumption (less than 1500 €) (ORa=1.8) and in those who did not consult their general practitioner in the last 12 months (ORa=3.2).

Conclusion: Based on self-report, the pap smear coverage rate was probably overstated with an estimate of 88.0%.

The factors associated with the not being up to date status were consistent with those reported in the literature, and included both socio-economic, demographic conditions as well as the access to care system. In addition to these factors, we showed that the low level of health literacy of Reunion women had a strong impact on the nonparticipation in screening for cervical cancer.

#147 "Reading and Creative Writing in an Acute Mental Health Inpatients Unit: Our Sligo Experience".

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Prevention in Mental Health is a matter of absolute primary importance in all of its forms: primary, secondary, tertiary. Primary prevention is often considered an ancillary option or even not useful in certain cases. The usual primary prevention which is known and oiled regards maintaining a good body health through physical activity of any kind and healthy eating: this is a really important and essential form of prevention of almost all psychiatric problems, because improves our body and our mind capacity to stand and overcome our daily difficulties. Sometimes in primary prevention is forgotten the role of our brain and the importance to nourish it with reading and education and the importance to express our emotions in a healthy way. This is the basic idea that inspired me to set up a service in collaboration with Sligo Mobile Library, which ensures that every inpatient in Sligo/Leitrim Mental Health Services has access to the full selection of books and other devices in use to the Central Library, with the aim to improve their knowledge and to use this service for both a ludic and educational scope. I was in contact with the director of the Sligo Central Library who agreed to send the Mobile Library Service once every three weeks in St Columba's Hospital (Sligo) to give the opportunity to the inpatients to have available all the newest books and other means in their possession. At present this service has been running for the last 6 months roughly and both the staff and the inpatients are extremely happy with the quality, professionalism and punctuality of the service given.

Considered the same assumptions, we organized in October a pilot "Creative Writing Workshop" in St Columba's Hospital premises (Sligo/Leitrim Mental Health Services) which lasted 2 hours to explore the possibility to run a series of 6 appointments in an inpatient setting, with the aim

again to give the possibility to who is experiencing mental health difficulties to explore their own emotions and to externalize them in an artistic and also psychologically effective way. Once more the results of the above experience had a fantastic and enthusiastic response in all the community, which is leading at present to an even closer collaboration with the local Library Services.

These 2 experiences are having a huge impact in all the community in terms of:

- Normalization of the inpatient experience in psychiatry
- Fight against stigma
- Promotion of positive mental health
- Promotion of the role of education, reading and creative writing in universal prevention in mental health.

I truly hope that our experiences in Sligo can be interesting for a wider audience and I hope also that our projects will develop more in something extendable in a national scenario.

#148 IC-health: development of MOOcs to promote digital health literacy. First results and future challenges and cocreation session.

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Background: Citizens' digital health literacy is an essential element for successful eHealth deployment. However, citizens often do not have the necessary skills to find, understand and assess online health information and apply their knowledge to make health decisions. Digitally health literate citizens are empowered to play a more active role in their health self-management, resulting in improved prevention, adherence to a healthier lifestyle and better health outcomes.

AIM: The aim of this paper will be to present the objectives, activities and results so far achieved by the IC-Health project, which was funded by the European Commission and whose objective was to increase EU citizens' competences related to digital health literacy (DHL). Additionally, a practical cocreation session will be organized in the framework of the conference to provide participants with a

concrete example of the participatory approach adopted in the project.

Methods: A survey was carried out to find out the levels of digital literacy (DL), health literacy (HL) and DHL, as well as the related issues, interests and needs of the specific population cohorts targeted by the IC-Health project: children, adolescents, pregnant and lactating women, elderly and people affected by type 1 and type 2 diabetes. In May 2017, 1,704 responses to the survey were collected. A strategy of participation with end users was designed for the co-creation of specific MOOCs (Massive, Online, Open-access Courses) through all the participating countries of the consortium for different population cohorts.

Results: Each group of participants (749 participants in total: 73 Belgium; Denmark/Germany/Netherlands; 226 Italy; 224 Spain; 101 Sweden; 37 Uk) met off-line to create an initial storyboard of a MOOC. After that, participants from each group continued to provide MOOC feed-back through a community of practice (CoP) until the details of the MOOCs were outlined. 35 open access online courses MOOCs were developed in 5 different languages.

Evaluation of the quality and design of the MOOCs was carried out with new participants, results of this testing will be published soon. In previous evaluations, the usefulness of ICT resources for the shared creation of contents has been demonstrated, as well as the need to incorporate face to face sessions with the participants.

#149 European policy on health literacy and its effect on people-centred health.

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¹On behalf of the Committee for Health Literacy and Self-Care, European Health Parliament, Brussels, Belgium

While there is a general trend of improving the people-centricity of healthcare across Europe, evidence shows that healthcare systemsarestill largely disease-centred. This can create a gap between the person with a health-related question and the healthcare provider. To facilitate the development of more people-centred healthcare systems, health literacy needs to be improved. This

project is part of a multidisciplinary initiative at the European Health Parliament to develop constructive and actionable solutions to improve health among all Europeans.

This research focuses on the role of the European Union (EU) in fostering health literacy. We study current EU policies on health literacy and assess their impact on people-centred healthcare. Our aim is to propose novel recommendations on how EU policy on health literacy can be improved in order to facilitate the shift from disease-centred to people centred healthcare and improve health equity among Europe.

We start with a systematic review of the literature in order to identify the barriers to improving health literacy at both EU and member state level. To get a better overview of some of the issues related to health literacy across Europe we also conduct several interviews with various stakeholders. Our findings inform the development of a theoretical framework on how health literacy can improve people-centred healthcare. Subsequently, we collect EU policies on health literacy. We analyse the current practices and policies within the EU and their impact on health literacy and people-centred care by drawing on our theoretical framework. Finally, we propose recommendations on how European policies on health literacy can be adjusted in order to facilitate people-centred healthcare among Europe. One example of a novel policy could be implementing promotion of health literacy among immigrants entering the EU.

There exist barriers in the current health system and our analysis demonstrates the need for improving EU policies on health literacy in order to facilitate the shift from a disease-centred to people-centred approach. Our research shows how policies can be improved in order to achieve this and points out gaps in the current EU policy on health literacy. By this, health equity among Europeans can be improved.

In order to help the EU achieve its fullest health potential, leaders and policy makers should take active steps towards updating the current practices and policies in place. It is time for policy workers and health advocates to start working in synergy so that we can build a healthier EU for us and future generations.

#150 Improving health literacy for better quality of life of patients with soft tissue sarcoma.

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Background: Soft tissue sarcomas (STS) have been labeled an 'orphan cancer', accounting for $\sim \! 1\%$ of all adult cancer cases. As such, not only is research and funding for STS limited, but also patient advocacy and support groups. Patients with STS undergo invasive medical procedures, which despite the limb- and life-saving intentions prove to be extremely burdensome. A better understanding of patients' needs and voices will help inform the shared decision making and in turn, improve health literacy of individuals afflicted by this rare cancer.

Objective: We explored the intricate relationship between health literacy, quality of life (QOL), and ability to navigate the health care system in adult STS patients.

Method: Data was collected via 2 online focus groups, 2 in-person focus groups, as well as 4 individual semi-structured interviews. Data was analyzed using inductive thematic networks approach.

Results: Twenty-eight participants (mean age 56, range 24 – 75 years) answered questions regarding their STS experience. Due to lack of structured support groups specific to STS patients reported feeling alone and at mercy of their health care providers. Health literacy played a role in multiple domains; lower levels of health literacy was linked to lower morale, lower QOL, as well as poorer coping mechanisms, such as passive acceptance and avoidance.

Discussion: Our study highlights the important relationship between health literacy and overall psychological functioning. Health literacy is

multifaceted and future initiatives should address it from a broader, socio-ecological framework. Our findings present an exciting opportunity for implementation of psychosocial intervention strategies that could improve health literacy by addressing individual psychological needs in this vulnerable population of cancer patients.

#151 Associations between health literacy and patient outcomes in adolescents and young adults with cystic fibrosis: a registry cohort study.

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Background: Health literacy (HL) skills enable individuals to participate more fully in healthcare activities and play a role in improving their outcomes. We examine the associations between HL and CF health outcomes, healthcare resource utilisation (HCRU) and health-related quality of life (QoL), and compare HL in CF and general populations.

Methods: Data are from CF Registry participants aged 13-30 years. General population data are from the 2011 European Health Literacy Survey (HLS-EU), a study of interactive HL. Associations between HL and CF patient outcomes were examined using a correlation matrix. HL in age-sex matched CF and general population individuals was examined using a generalised linear model, with study population, sex, educational level and work status included as factors and age as a covariate.

Results: Sufficient interactive HL was self-reported by 81.7% of CF adolescents and young adults. Poorer clinical and HCRU outcomes were observed in individuals with limited HL. Better HL scores were associated with fewer oral antibiotics (-0.21 per annum, p=0.004) of shorter cumulative duration (-0.23 days, p=0.004), and better QoL (0.23, p=0.004). Compared with the general

population (13.1), mean HL score was higher among individuals with CF (14.3, p<0.01). CF females (14.0) had poorer HL than CF males (14.6), whereas general population females (13.3) had better HL than males (12.8, p=0.032).

Conclusions: CF adolescents and young adults with sufficient levels of HL to obtain, understand, appraise and apply health information have better health-related outcomes.

Key points

- Over 80% of adolescents and young adults with CF aged 13 to 30 years have sufficient interactive health literacy (HL).
- Adolescents and young adults with CF had significantly better HL than the general population, despite lower levels of educational attainment.
- In our study population, CF females had poorer HL than CF males, whereas females in the general population had better HL than males.
- Adolescents and young adults with CF having sufficient levels of HL to obtain, understand, appraise and apply health information had less healthcare resource utilisation, higher scores in most quality of life domains, and better clinical outcomes during the follow-up period.

#152 Health literacy in a mental health setting.

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This presentation will consider the opportunities and challenges of improving health literacy within a mental health setting, based on the organisational efforts of St Patrick's Mental Health Services to become a literacy-friendly mental health service.

The presentation will consider the necessity to develop health literacy within mental health settings from best practice, legislative, and rights-based perspectives. St Patrick's Mental Health Services (SPMHS) is the largest independent not-for-profit mental health service provider in Ireland and considers advocacy one of the core parts of our work. We view accessible information and access to mental health services as key advocacy goals, and a literacy committee was formed in 2015 towards this end. This presentation will outline the

efforts undertaken to improve health literacy practices and knowledge amongst staff, to make the mental health setting environment more literacy-friendly, and to uphold health literacy standards within the written and verbal communication shared with the people using the services and the general public. These efforts include ongoing collaborative efforts with the National Adult Literacy Agency, cross-departmental workshops, and the development of health literacy e-learning for staff. Special considerations and challenges pertaining to health literacy within mental health care will be explored, and areas for need and attention within mental health services highlighted.

#153 Effects of an easy-to-understand patient letter after hospitalisation on patient health literacy.

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Background: Satisfying health information improves patient health literacy (HL) and behavior [Frileux et al. 2004]. Limited HL is negatively associated with health status/behaviour, but also with higher health care utilisation and associated costs [Jordan&Hoebel 2015]. Numerous studies show insufficient patient information after hospitalisation. We examined if an easily understandable patient information letter (patient letter) after hospitalisation improves HL by patients.

Methods: We conducted an RCT in 2016/17 to examine the efficacy of a patient letter (intervention) compared to patient information as usual (control) after hospitalisation. The main outcomes were patient HL (based on HLS-EU-Q47) and self-reported medication intake/compliance. SPSS 25.0 was used for descriptive and comparative analysis.

Results: 464 (of 1772) patients took part, 417 questionnaires were analysed. Patients of the intervention (242) and the control group (175) were comparable regarding their health status and initial health information. 17% reported inadequate, 43%

problematic, 30% sufficient and 11% excellent health literacy. 22% reported no discharge discussion with physicians; 15% confirmed persisting questions after such discussion. 46% reported being sufficiently informed regarding medication at home. After intervention, significantly more patients of the intervention vs. control group showed better comprehension of therapy as well as significantly higher scores concerning several HLS-EU-Q47 items regarding obtaining, understanding and applying health information.

Conclusion: Our data confirm the need for improvement of patient information after hospitalisation. Easy-to-understand patient letter improved patient HL especially regarding coping with disease. Sustainable effects on HL and health should be examined in further studies.

Main messages: An easy-to-understand patient letter enables patients to understand information regarding disease-related matters after hospitalisation and is associated with improvement of patient HL.

#154 Farm safety education: a chance to improve safety and health literacy among agricultural workers.

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Introduction: Agriculture is among the least healthy employment sectors in Europe. The health hazards not only concern occupational diseases, but also injuries that might occur due to the nature of work. With over 500 fatal accidents annually across the EU, agriculture has the worst fatal accident record of all major employment sectors. To counteract this problem, farm health and safety initiatives that aim to increase farm safety and improve the health of agricultural workers are necessary. Of the three "Es" of safety – Education, Engineering, and Enforcement – Education has the potential to increase farmers' health and safety through enhancing health and safety literacy among

farmers. However, little is known to what extent existing safety education is successful in increasing the health and safety literacy of farmers. The present paper presents a systematic literature review to assess the effectiveness of farm safety education interventions in improving safety and health literacy of agricultural workers.

Methods: We conducted a systematic review of the literature, following the PRISMA-P guidelines. PubMed, SCOPUS, Embase and PsycINFO databases were searched from November 2018 to January 2019, using the search terms: health literacy (and synonyms) and agriculture (and synonyms) and farm safety (and synonyms) and interventions (and synonyms). Only farm safety interventions focusing on either injury or occupational diseases that aimed to offer both knowledge and competencies for farmers were considered as eligible. Farm safety interventions focusing on mental health of the farm workers were not included. The search was limited to papers in English from all countries. Relevant references in the selected articles were also analyzed, and the grey literature was also searched.

Results: A total of 2518 articles were initially identified as relating to the topic. Studies were selected independently by two reviewers using CADIMA. Titles and abstracts were screened for relevant articles to be included in the review. Fifty-three articles met the inclusion criteria and were further considered for the full-text review.

Conclusions: At the present moment, the reviewers are still conducting the full text review of the selected articles. From the title and abstract assessment, we can conclude that most of the interventions are targeting pesticide use, microbial and zoonotic infections, injury prevention and prevention of occupational diseases due to farming. Although health and safety literacy is rarely considered explicitly as an outcome of educational interventions, the results of this review have the potential of identifying effective educational strategies aiming at increasing farmers' safety and health literacy.

#155 Towards optimal self-management support for chronically ill with low health literacy levels.

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Background: Health literacy is definitely linked to the self-management of the chronically ill. Every day, health literacy skills are needed for the management of the disease in daily life, during medical consults and adapting of an individual's lifestyle to cope with the long term consequences of the chronic disease. A substantial group of chronically ill does not have the health literacy skills to self-manage their chronic disease. Internationally, a lot of self-management interventions are developed and implemented, but patients with low health literacy levels may need more, or different support. In addition, it is possible that patients with low health literacy differ in their self-management priorities and their preferences for self-management support. At the moment, selfmanagement support takes too little account of the needs and preferences of chronically ill patients with low health literacy levels, whereas low health literacy is one of the most important barriers of coping with a chronic illness.

Objective: To examine how people with low health literacy skills can be optimally supported in the self-management of their chronic disease. To determine which (elements of) existing self-management interventions (SMIs) are especially relevant and effective for this patient group.

Methods: This study is part from a large research project named COMPAR-EU, funded by the European Commission, which aims to identify, compare, and rank the most effective and cost-effective SMIs for adults in Europe living with a high-priority chronic disease (diabetes, obesity, heart failure and COPD). Additionally, data will be obtained through the patient panels of Nivel and

qualitative focus groups. The project will apply Network Meta-Analysis, which allows multiple (rather than pair-wise) comparisons of intervention effectiveness.

Study outcomes and discussion: This study gives insight into the most important outcomes for SM from the perspective of patient with low health literacy, the most effective and cost-effective interventions for patients with low health literacy to improve these outcomes. Findings will be built into an online platform to support patients, professionals and policy makers to choose the most optimal self-management interventions for people with low health literacy that fit to their needs and preferences.

#156 Promoting Health Literacy among farmers in Ireland.

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Background: Health literacy has been described as follows: "it 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" (Van den Broucke, 2014).. In Ireland, research in the past has indicated that farmers have considered themselves 'healthy' when they can complete work tasks. However, objective research has indicated that Irish farmers experience the highest levels of mortality for all causes of death when compared to other occupational groups (Smyth et al, 2012). Cardiovascular disease (CVD), cancer and injury are the dominant mortality causes. Accordingly, interventions are warranted to support farmers to make health gains.

Objective: Engaging farmer nationally in Ireland with Health Literacy to motivate health promoting activities, has been the objective of the state extension service in association with health professionals since 2006. Extension as a discipline seeks to gain voluntary adoption using Researchled Knowledge Transfer approaches based on adult education and advice provision. This paper reviews the major initiatives which have been implemented to assist farmers to make health gains.

Methods: A retrospective review was conducted to identify major national initiatives with extension involvement to promote health among farmers in Ireland. The period from 1st January 2006 to 31st December 2018 was used as the review reference period.

Results: The survey identified twelve major health promotion initiatives involving extension in Ireland in the reference period. Five involved research on the following topics: disability causes (PhD); health and musculoskeletal disorders (PhD); Extension supports needed for safety and health (PhD); farmer stress (Masters). A further study (PhD) is in progress assessing the effectiveness of a gendered approach to evaluate CVD health behaviour change strategies among farmers. One involved inclusion of occupational health in a statutory farm health and safety code of practice. Three involved provision of training to extension staff on health promotion as a component of the national men's health training programme (ENGAGE). One involved a series of health promotion exhibits, including blood pressure checking, at outdoor farming events. In addition, the Irish Health Service Executive has supported provision of heart health checks to farmers at livestock marts. One involved the national distribution of a farmer health booklet and one involved publication of a series of extension media releases and articles on aspects of farmer's health.

Discussion: The retrospective review has identified considerable engagement by extension with health literacy among Irish farmers. This engagement involved: research, staff training, and production of a major health literacy publication and provision of advice to farmers on health through farming media. The approaches adopted advocate use of both the 'bio psychosocial' and 'biomedical' approaches to achieve farmer health gains. Further research to

establish performance indicators for health literacy gain among the Irish farming population is warranted.

#157 Validating the HLS-EU-Q47 for the Indian context.

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Background/Objectives: Health literacy increasingly recognized as a key concept for public health. Poor health literacy is closely associated with an improper management of health, suboptimal uptake of preventive and health care services, unhealthy behaviour, increased likelihood for chronic conditions and medical complications, and increased health care costs. In India, studies using the REALM, STOFHL or self-designed questionnaires to assess health literacy have revealed a high prevalence of limited or inadequate health literacy, thus providing a challenge to public health. However, these studies typically involve patients in clinical settings and do not consider health literacy at population level. Moreover, they only focus on functional health literacy and do not consider critical or communicative health literacy. In order to measure health literacy at population level and compare the level of health literacy in India to that of other countries it is necessary to use broader measures of health literacy, validated for the Indian population. To that effect, the present study adapted and validated the HLS-EU Q47 for use in India by providing versions in Hindi and Kannada. Hindi is spoken by 52,83,47,193 (44%) of Indians, and Kannada by 4,37,06,512 (3.6%).

Methods: The original English version of the HLS-EU-Q47, a questionnaire that has been widely used in several European and Asian countries, was translated to Hindi and Kannada by native speakers familiar with health literacy, then back-translated to English and checked for content. The translated versions were then administered to 10 Kannada and Hindi speaking individuals in a "think-aloud"

approach to detect any problems in understanding and answering the questions. The time needed to answer the questions and any comments made by the participants were noted and used to refine questions where necessary. A back-translation to English and examination of the content by experts ensured the comparability correctness of the refined questionnaire to the original. The resulting questionnaire was administered a 200 individuals (100 each for Kannada and Hindi) for validation, using stratified purposive sampling based on gender, age, and education level. Selected participants were contacted in person or by e-mail and asked to complete the questionnaire on paper or online. Test re-test reliability was checked in 10% of the participants.

Results: Validation analyses involving internal consistency analysis for the full scale and subscales (accessing, understanding, evaluating and applying health information, and cure, prevention and health promotion) and association of health literacy with sociodemographic variables, self-reported health and health behaviour are currently under way.

Discussion: Health literacy remains an underexplored issue in India and needs attention. A validated version of the HLS-EU-Q47 for two of the spoken languages in India will allow to measure the level of health literacy and its components in populations in India, and compare them to findings from other countries in the region and worldwide. As such, it will contribute to addressing health literacy challenges in India.

#158 Health literacy as the practices of health rights.

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Health literacy has been shown with significant variations in different individuals in diverse culture and healthcare environment. Individuals' health literacy could be developed through longitudinal

and horizontal experiences and reflections, mostly from parents, but also through education and media. further fabricated by continuous modification via healthcare services received. Public health services would then be responsible for further refinements of individuals' health literacy, from all healthcare deliveries and communications received. The governments and communities can learn from the development of health literacy in individuals or families or clusters. to improve the quality of services provided to the citizens and communities. National vaccination programs are useful examples for development of health literacy in each individuals, including preventive programs for enterovirus infectious in newborns and pregnant women, tobacco cessation program in youngsters, and cancer screening and weight reductions for adults. Road safety programs, including reinforced helmet protection and safety belt, as well as prohibition of drunk driving are other examples that public services can provide to ensure the enrichments of health literacy and protection of human lives with equity, as the essentials of human rights. Transparent and voluntary organ donation programs to support satisfactorily the essential needs and to prohibit cross-border organ trafficking from illegal or unsafe sources are other examples of public health services. Health literacy, therefore, reflects the specific achievements of public health in communities and in the country on an individual level. On the other hands, governments shall review the programs which might jeopardize the health literacy of particular individuals or intervene or diminish health communications between individuals. Moreover, health literacy shall be recognized as the rights and revenue of each citizen that can be shared through adequate and transparent interactions in effective approaches. And the full development of health literacy as much as appropriate shall be the responsibilities of all the governments, to protect the human rights of its citizens.