



The 2nd European Health Literacy Conference 10-11 April 2014, Aarhus, Denmark

Conference programme

"Health Literacy in populations and settings - developing the research base"



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Welcome

Dear Colleagues – Welcome to Aarhus

The Department of Public Health, Aarhus University and The European Health Literacy Network are very happy to welcome you to the 2nd European Health Literacy Conference in Aarhus on 10-11 April 2014. The Scientific Committee and the Organising Committee have done their best to prepare an inspiring programme – both scientifically and socially. We hope you will find unique opportunities to share knowledge, engage in fruitful debates, and ideally make new friends and connect with future collaborators.

Thanks to the participation of leading Nordic and international experts we have been able to form a programme with a variety of themes related to health literacy. With our overall theme: *"Health Literacy in populations and settings - developing the research base"* it is our aspiration that the conference will:

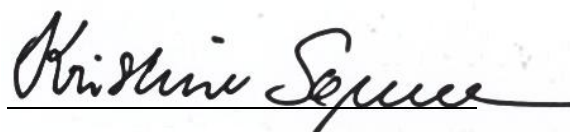
- Facilitate sharing evidence-based research on health literacy measurement, interventions, and policies
- Provide a platform for knowledge-exchange for professionals working in the field of health literacy in Europe stimulating wider collaboration
- Provide a cross-sectorial, interdisciplinary approach to health literacy by creating opportunities for capacity building and professionalization in research, practice, and policy.

The programme is organised in three plenary sessions, four parallel oral sessions and two parallel teach-ins. Altogether the conference offers 22 oral presentations and several speeches held by leading health literacy researchers. Throughout the conference there is the opportunity to explore the new and inspiring research projects presented in the 35 posters. The four pre-conferences will further provide a valuable platform for knowledge exchange and networking. We hope that you will find our distinguished panel of speakers and poster presenters to be as inspiring, as we do.

The conference setting is the beautiful and unique University Park of Aarhus University. The yellow buildings scattered around in the green scenery make up the daily work place for around 50.000 students and employees. Aarhus is a charming city situated close to forests and the sea and the city is the second largest in Denmark. We hope you will have the opportunity to experience the friendly environment which exists in the narrow streets and enjoy a coffee in a cozy café by the river. We can offer you free admittance to the art museum ARoS that will also host our Thursday night social event. We hope you will enjoy your stay in Denmark and look forward to sharing the scientific and social programme with you.



Helle Terkildsen Maindal, Aarhus University, DK. Conference Chair



Kristine Sørensen, Maastricht University, NL. Executive Chair

Programme

April 10

08:00	<i>Registration open</i>
08:00-09:00	<i>Registration morning – situated by the entrance to the “Konferencecenter” (“Conference Centre”) in building 1421</i>
11:00-17:00	<i>Registration after 11:00 - Lakeside Lecture Theatres, building 1250, Foyer</i>
12:30-17:00	<i>Poster exhibition - Lakeside Lecture Theatres, William Scharff theatre</i>
09:00-12:00	<i>Pre-conferences - Studenterhusfonden, building 1421 (see pages 8-9)</i> <i>A. What is happening in the health literacy field in the Nordic countries? – meeting room 2.2</i> <i>B. Introduction to the HLS-EU-Q measurements – meeting room 1.</i> <i>C. Health literacy, chronic disease and healthy ageing – meeting room 2</i> <i>D. Taking children’s health literacy seriously – meeting room 1.3</i> <i>A break will be held when suitable in each pre-conference</i>
12:00-13:00	<i>Lunch - Lakeside Lecture Theatres, hallway on the 3rd floor and William Scharff theatre</i>
13:00-15:00	<i>Opening session day 1 – Lakeside Lecture Theatres, Per Kirkeby theatre.</i> <i>Welcome:</i> <ul style="list-style-type: none">• <i>Helle Terkildsen Maindal, conference chair</i>• <i>Nick Haekkerup, Danish Minister of Health – video speech</i>• <i>Allan Flyvbjerg, Dean, Aarhus University</i> <i>Key note:</i> <i>Health Literacy Research 2.0: towards theory guided measures and their critical application:</i> <ul style="list-style-type: none">• <i>Thomas Abel, Bern University, CH</i> <i>Introduction to European health literacy research:</i> <ul style="list-style-type: none">• <i>Jürgen Pelikan, Ludwig Boltzmann Institute for Health Promotion Research, AT</i>• <i>Andrea de Winther, University Medical Center Groningen, NL</i>• <i>Stephan van den Broucke, University Catholic Louvain, BE</i>• <i>Jany Rademakers, Netherlands Institute for Health Services Research, NL</i>
15:00-15:30	<i>Break</i>
15:30-17:00	<i>Parallel session I: Health literacy status in populations I - Lakeside Lecture Theatres, Per Kirkeby theatre</i> <i>Parallel session II: Health literacy interventions - Lakeside Lecture Theatres, Jeppe Vontillius theatre</i>
17:15-17:45	<i>Guided walk to ARoS Art Museum. Meeting point: Main entrance, Lakeside Lecture Theatres</i>
18:00-20:00	<i>Aarhus by night: from the Rainbow Panorama at ARoS Art Museum</i> <i>Festive speech by Ilona Kickbusch, see social programme on page 12</i>

April 11

08:00-12:00	<i>Poster exhibition - Lakeside Lecture Theatres, William Scharff theatre</i>
08:30-08:55	<i>Opening session day 2 - Lakeside Lecture Theatres, Per Kirkeby theatre</i> <i>Critical health literacy: a pre-requisite for active participation in health?</i> <ul style="list-style-type: none">• Jane Wills and Susie Sykes, London South Bank University, UK
09:00-10:30	<i>Parallel session III: Health literacy status in populations II - Lakeside Lecture Theatres, Per Kirkeby theatre</i> <i>Parallel session IV: Promoting health literacy in settings - Lakeside Lecture Theatres, Jeppe Vontillius theatre</i>
10:30-11:00	<i>Break</i>
11:00-11:45	<i>Teach-in I: Health literacy measurements: matching tool and purpose - Lakeside Lecture Theatres, Per Kirkeby theatre</i> <ul style="list-style-type: none">• Kristine Sorensen, Maastricht University, NL, Jürgen Pelikan, Ludwig Boltzmann Institute for Health Promotion Research, AT <i>Teach-in II: Planning Health literacy interventions - Lakeside Lecture Theatres, Jeppe Vontillius</i> <ul style="list-style-type: none">• Helle Terkildsen Maindal, Loni Ledderer, Lise Juul, Aarhus University, DK
11:45-12:30	<i>Lunch - Lakeside Lecture Theatres, hall way on the 3rd floor and William Scharff theatre</i>
12:30-14:00	<i>Closing session - Lakeside Lecture Theatres, Per Kirkeby theatre</i> <i>Poster award</i> <i>Panel discussion:</i> <i>How to create a health literate Europe?</i> <ul style="list-style-type: none">• Helmut Brand, Maastricht University, NL• Karin Fjeldsted, Standing Committee of European Doctors, IS• Tomasz Szelagowski, European Patients Forum, PL• Bartosz Hagbart, European Commission, BE <i>The future vision for European health literacy</i> <ul style="list-style-type: none">• Ilona Kickbusch, Graduate Institute Geneva, CH

Organisers

Organising Committee

- Helle Terkildsen Maindal, Conference Chair, Aarhus University
- Kristine Sorensen, Executive Chair, Maastricht University
- Gill Rowlands, Aarhus University
- Kirsten Vinther-Jensen, Aarhus University
- Linda Edge, Aarhus University
- Anne Bo, Aarhus University

Scientific Committee

- Alexandra Joves-Vranes, Belgrade University, Serbia
- Diane Levin-Zamir, Haifa University/CLALIT, Israel
- Gerardine Doyle, University College Dublin, Ireland
- Gill Rowlands, Aarhus University, Denmark
- Helle Terkildsen Maindal, Aarhus University, Denmark
- Holger Penz, Carinthia University of Applied Sciences, Austria
- Jürgen Pelikan, Ludwig Boltzmann Institute Health Promotion Research, Austria
- Kjell Sverre-Pettersen, Oslo and Akerhus University College of Applied Science, Norway
- Kristine Sorensen, Maastricht University, Netherlands
- Lars Kayser, Copenhagen University, Denmark
- Luis Saboga-Nunes, School of Public Health Lisbon, Portugal
- Stephan Van den Broucke, Université Catholique de Louvain, Belgium
- Zofia Slonska, Cardinal Stefan Wyszyński Institute of Cardiology, Poland

Endorsing partners and sponsors

The 2nd European Health Literacy Conference is supported financially by Danish and international sponsors.



Danish Society of Public Health

Furthermore, the 2nd European Health Literacy Conference is endorsed by conference partners.



Key note speakers A-Z

Andrea de Winter

Andrea de Winter from University Medical Center Groningen is the scientific coordinator of the IROHLA project: "Intervention Research on Health Literacy among Ageing populations", which focuses on improving health literacy for the older people in Europe. It is an EU-supported project under the FP7 research programme. Andrea de Winter will introduce the aim and initial results of the project. Furthermore, she will reflect on promising interventions to improve the health, participation and wellbeing of older adults.

Bartosz Hagbart - European Commission

The Directorate General for Health and Consumers (DG Sanco) is supporting the development of health literacy at the EU-agenda through funding of health literacy projects, integration in strategies and supporting knowledge sharing platforms. At the conference the future EU-level initiatives will be presented and discussed.

The Directorate General for Information and Technology has been engaged in health literacy, particularly from an e-health and m-health perspective. DG Connect will provide insights in their future developments in terms of health literacy promotion in the information age.

Helmut Brand

Professor Helmut Brand from Maastricht University, the Netherlands has been leading the European Health Literacy project to establish health literacy in Europe. He is involved in health literacy Europeanization and health literacy integration to bridge research with policy and practice at global, European and national levels through international collaborations.

Ilona Kickbusch

Professor Ilona Kickbusch from the Graduate Institute in Geneva is one of the European pioneers within the health literacy field. She has been promoting health literacy for more than two decades. She will be addressing the future perspective of European health literacy.

Jane Wills

Professor Jane Wills from London South Bank University focuses on health literacy and health promotion. She will introduce her reflections concerning the promotion of critical health literacy.

Jany Rademakers

Dr Jany Rademakers is from NIVEL, the Netherlands Institute for Health Services Research. Her research focuses on the diversity in health care, more specifically on health literacy and patient activation, and in general on patient involvement and empowerment in health care. She is a founding member of the Dutch Health Literacy Alliance and of the Health Literacy Knowledge Centre of NIVEL and RIVM. She will introduce the new EU-supported initiative which aims at providing sound evidence for a better understanding of health literacy in the EU.

Jürgen Pelikan

Professor Jürgen Pelikan from Ludwig Boltzmann Institute Health Promotion Research in Vienna, Austria has, as a member of the European Health Literacy Consortium been the chief analyst of the HLS-EU survey. He has been leading additional health literacy population studies in Austria and has played a key role in the health literacy policy developments in Austria, where health literacy has been integrated as a strategic national health goal for the coming years. Jürgen Pelikan will share the main outcomes of the European Health Literacy Survey at the conference in Aarhus.

Karin Fjeldsted

Karin Fjeldsted is president of the Standing Committee of European Doctors (CPME). CPME considers health literacy as an important aspect for health professionals and acts as advocates for health literacy at European level by being involved in projects, EU policy development etc.

Stephan Van den Broucke

Professor Stephan Van den Broucke from Université Catholique de Louvain is leading the Diabetes Literacy project, which is supported by the EU's FP7 research programme. He will provide an overview of its objectives and initial results.

Thomas Abel

Professor Thomas Abel from Bern University in Switzerland, a sociologist in public health, calls for strengthening health literacy approaches through theoretical guidance. His own work on health literacy is focused on the links between social inequality (cultural capital, capabilities) and health literacy measurement (at the population level).

Tomasz Szelagowski

Tomasz Szelagowski's academic background is in pedagogical education. He has worked as a consultant and trainer in the areas of human relations and leadership. Tomasz Szelagowski is currently pursuing a line in further education in the field of Anthropology of Culture. As General Director of the Federation of Polish Patients (FPP) he is responsible for managing and implementing the overall strategy of the organisation. His contribution at the conference will be to raise awareness of health education and engineering large-scale organisational change among patient's environment.

Pre-conferences



A: What is happening in the Health Literacy field within the Nordic Countries?
Chairs: Lena Mårtensson and Josefin Wångdahl

The Nordic Health Literacy Network (NorHLnet) was founded 2012. The network is open to all people interested in, working with and/or wanting to work with Health Literacy and/or conducting Health Literacy research in any of the Nordic countries. The network meets regularly twice a year to discuss different Health Literacy issues raised by the members in the network. So if Health Literacy networking interests you, please sign up for this pre-conference workshop. The present situation of what is going on in different Health Literacy areas in the Nordic countries will be presented, followed by discussions focusing on what the overarching aim of the network should be and how work within the network will continue.

Prior to the workshop we will call for short written presentations (max 1 A4 page) on how you work with, or are interested in, Health Literacy and want to focus upon it within the context of I: What is happening in the Health Literacy field within the Nordic Countries?

Those attending the workshop will form focus groups based on their interest in health literacy. These focus groups will draw up the framework for continued work within the network. The pre-conference is organised by the Nordic Health Literacy Network.



B: Introduction to the HLS-EU-Q measurements

Chairs: Jürgen Pelikan and Kristine Sørensen

The European Health Literacy Survey was conducted in 2011 in eight countries. This pre-conference introduces the HLS-EU-Q, which was developed to measure health literacy in the European Health Literacy Survey. The aim is to provide insights concerning the underlying conceptual framework, the application and the analysis of the data. The HLS-EU-Q will be compared to other health literacy assessment tools and advantages and disadvantages will be discussed.

The pre-conference is organised by the HLS-EU consortium.



C: Health literacy, chronic disease and healthy ageing

*Chairs: Stephan van den Brouke
and Menno Reijneveld*

The aim of the pre-conference is to exchange views and experiences regarding health literacy and self-management, on the basis of research conducted in the FP7 projects Diabetes Literacy and IROHLA (Intervention Research of Health Literacy in the Ageing Population). The interactive programme includes discussions concerning conceptual models, best practices and implementation fidelity in break-out sessions and in plenary.

The pre-conference is organised by the Diabetes Literacy consortium and the IROHLA consortium.



D: Taking children's health literacy seriously: innovative perspectives from research, practice and policy – a multi-methods workshop

Chairs: Elise Sijthoff and Shanti George

The workshop is organized by Working Internationally on Social Development and Health in European Schools and Families (WISHES) - a network that spans university-based research and school-based as well as community-based practice, across Europe (wishesnetwork.eu).

How are skills required for healthy lifestyles developed and acquired in real life school situations? In what ways do health literacy programmes facilitate or undermine the skill sets currently displayed by various actors within school settings? What role is played by external actors who influence the working of schools, ranging from parents to local authorities? What are some relevant programmes, models and cases of good practice?

If these questions excite you, please sign up for this pre-conference workshop, where discussions will be embedded within strong cross-disciplinary research that draws on education, health, socialization studies, social science more generally and physical activity research.

The pre-conference is organised by the WISHES network.

Parallel sessions with oral presentations

I: Health literacy status in populations I

Chair: Gill Rowlands, Aarhus University, DK

- a) Jany Rademakers: Patient activation and health literacy as predictors of health information use in Dutch health care consumers
- b) Anne Bo: National indicators of health literacy: Ability to understand health information and to engage actively with healthcare providers – a population based survey among Danish adults
- c) James Fullam: Health literacy and health behaviours in Ireland
- d) Iris van der Heide: The Relationship Between Health, Education, and Health Literacy: Results From the Dutch Adult Literacy and Life Skills Survey
- e) Kjell Sverre Pettersen: Approaches to measuring health literacy in various contexts in Norway - from 2007 to 2013

II: Health literacy interventions

Chair: Astrid Austvoll-Dahlgren, Norwegian Knowledge Centre for the Health Services, NO

- a) Liesbeth de Wit: Older adults' needs and perceptions regarding health literacy components: participatory focus group discussions in three European countries
- b) Andrea F. de Winter: Development and evaluation of taxonomy of health literacy interventions
- c) Eva-Maria Bitzer: Patient attitudes to a personal controlled health record - associations with health literacy? - Results from survey among chronically ill patients
- d) Gitte Susanne Rasmussen: "Talk them through it". Towards an interpretive description of context-specific health literacy ability in family members to young people with psoriasis.
- e) Susie Sykes: Understanding and developing critical health literacy

III: Health literacy status in populations II

Chair: Jürgen Pelikan, Ludwig Boltzmann Institute for Health Promotion Research, AT

- a) Josefin Wångdahl: Functional and complex health literacy levels in refugees in Sweden
- b) Gudrun Quenzel: Health Literacy in vulnerable populations in Germany - a follow up study on the European Health Literacy Survey
- c) Lindsay Kobayashi: Ageing, cognition, and health literacy decline in the English Longitudinal Study of Ageing
- d) Peter Chang: The health literacy of young adults in Taiwan using the HLS-EU-Q

- e) Diane Levin-Zamir: Using National Health Literacy Survey Results to Improve Practice, Develop Policy, and Strengthen the Research Base for Promoting Health and Self-Care
- f) Monika Mensing: False self-perception of functional health literacy in North Rhine-Westphalia: Identifying endangered groups using the HLS-EU data

IV: Promoting health literacy in settings

Chair: Jany Rademakers, Netherlands Institute for Health Services Research, NL

- a) Jorien C.H. Bakx: Quick Scan Health Literacy in hospitals. Development and implementation of a practice based toolbox in Dutch hospitals
- b) Mirjam Fransen: Equal opportunities for informed participation in colorectal cancer screening
- c) Gillian Rowlands: Addressing the Health Literacy skills mismatch in England: moving from evidence to policy change
- d) Anne Konring Larsen: Framing health literacy into the workplace - means and perspective of a preventive intervention
- e) Zofia Slonska: Can we assume that nurses are always sufficiently prepared to support patients in their health literacy development? The results of the Warsaw cross-sectional study
- f) Enrique Castro-Sánchez: Health literacy in migrants: an integrative review of the literature

Poster exhibition

Posters will be exhibited during the whole conference. During lunch time we encourage everybody to study these valuable contributions to the conference where authors will be in the near vicinity and ready to answer questions as well as take up fruitful lunch time discussions about their research. The posters presented cover a variety of themes; Policy, measurements, health behaviour, chronic disease, older people, vulnerable groups, immigrants, health professionals, and communication/e-health. A prize for the best poster will be awarded in plenary session on Friday 11 April.

Social programme

Aarhus by night from the Rainbow Panorama at ARoS Art Museum

Thursday night you are in for an extraordinary experience when we ascend to the "Rainbow Panorama" on top of the ARoS Art Museum at dusk.

ARoS Art Museum is situated in the heart of Aarhus and is one of Europe's largest art museums. The museum, which opened in 2004, pleases, enlightens, and challenges its guests. The architecture of the museum itself has been internationally acclaimed, as has the art it contains. In May 2011 the spectacular Your Panorama Rainbow opened on top of the museum. This unique project was designed and implemented by Studio Olafur Eliasson, Berlin.

The museum staff will first take us on a short guided tour of the museum. Next, Ilona Kickbusch will give us an inspiring talk before we will enjoy a buffet and an informal time together.

When: at 18:00-20:00 hrs.

Where: ARoS Art Museum. ARoS Allé 2, DK-8000 Aarhus C. 10 minutes' walk from the train station, 25 minutes' walk from the University Park and conference site.

Guidance to ARoS: Conference staff will head the quick walk from the conference site to the museum. On our way we will pass through some of the main walking streets of Aarhus.

We leave from the main entrance of the Lakeside Lecture Theatres at 17:15 hrs.

Please ask the staff regarding taxis or buses.



Evening life in Aarhus

Aarhus has many cozy cafes and places for relaxing, socializing and listening to music. We are happy to advise you about nice places to visit.

Practical information A-Z

Addresses

The pre-conferences will be held in Studenterhusfonden, building 1421, entrance "Konferencecenter" ("Conference Center"), Fredrik Nielsens Vej 4, 8000 Aarhus C. Meeting rooms as allocated, 1, 2, 1.3, and 2.2.

The main conference will be held in the Lakeside Lecture Theatres, Building 1250, Bartholins Allé 3, 8000 Aarhus C. Signs will be posted and staff will be available to assist finding both locations.

Abstracts

All participating abstracts are printed in this book from page 16. The abstracts can be downloaded in pdf format from the conference webpage at www.healthliteracyeurope.net.

Name tags

The name tag issued to you upon registration is your admission to all scientific sessions, lunches and coffee. You are kindly requested to wear your name tag on all occasions. If the badge is lost, please contact the registration desk.

Catering

A light breakfast will be served during the break during the pre-conferences.

Lunch will be provided Thursday as a buffet and Friday as a lunch box served in the Lakeside Lecture Theatres in the hallway on the 3rd floor and in the William Scharff theatre.

The reception on April 10 includes a buffet at the ARoS Art Museum.

Certificate of Attendance

A certificate of attendance can be downloaded electronically after you have completed the electronic evaluation that will be sent to you by email. Please refer to the conference organisers if you have any special needs regarding documentation of attendance.

Evaluation

We would very much appreciate your feed-back on the conference content and organisation. Therefore, we will email you a short online evaluation form. We kindly ask you to complete the form - preferably during, and immediately after the conference and by May 5th at the latest.

Posters

The poster exhibition is located in the Lakeside Lecture Theatres, William Scharff theatre. The posters are exhibited from noon April 10 until noon April 11. Authors are requested to be in near vicinity to their poster during lunch breaks.

Posters should be hung-up between 9:30 and 13:00hrs. on April 10 and taken down by 12:15hrs. on April 11.

Poster award

The Scientific Committee will point out a candidate for best poster. The candidate for best poster will be announced, and a prize awarded, during the closing session on Friday afternoon.

Registration

If you are attending one of the pre-conferences, registration will take place before commencement on Thursday morning April 10. All other participants will be able to register before the opening session of the main conference on April 10.

Registration morning: April 10 at 08:00-09:30 hrs., Studenterhusfonden, building 1421, Fredrik Nielsens Vej 4. The Registration Desk will be situated by the entrance to the "Konferencecenter" (Conference Centre),

Registration late morning/early afternoon: April 10 at 11:00-13:00 hrs. The Registration Desk is situated in the foyer by the main entrance to the Lake Side Lecture Theatres, Bartholins Allé 3.

Speakers and presenters

We kindly ask plenary speakers to meet 15 minutes before the commencement of the session in order to test and save the presentations on to the lecture hall computer.

Presenters in the parallel sessions are also requested to meet with the session chairs 15 minutes before the commencement of sessions in order to test and save the presentations on to the lecture hall computer.

Staff

Staff will be available during all breaks. They will be ready to help you with any questions you might have or refer you to another person who can assist.

Transportation

It is approximately a half-hour walk from the main train station in Aarhus to the University Park, where the conference is being held.

Busses from the train station to the University Park: Bus 14 towards "Skejbyparken", bus 18 towards "Elev", bus 1A towards Lystrup Øst. Get off at: "Aarhus University Hospital Nørrebrogade" for main conference. Get off at "Nordre Ringgade" for pre-conferences. The price is 20 Danish crowns (20.00 DKK), and you will need coins.

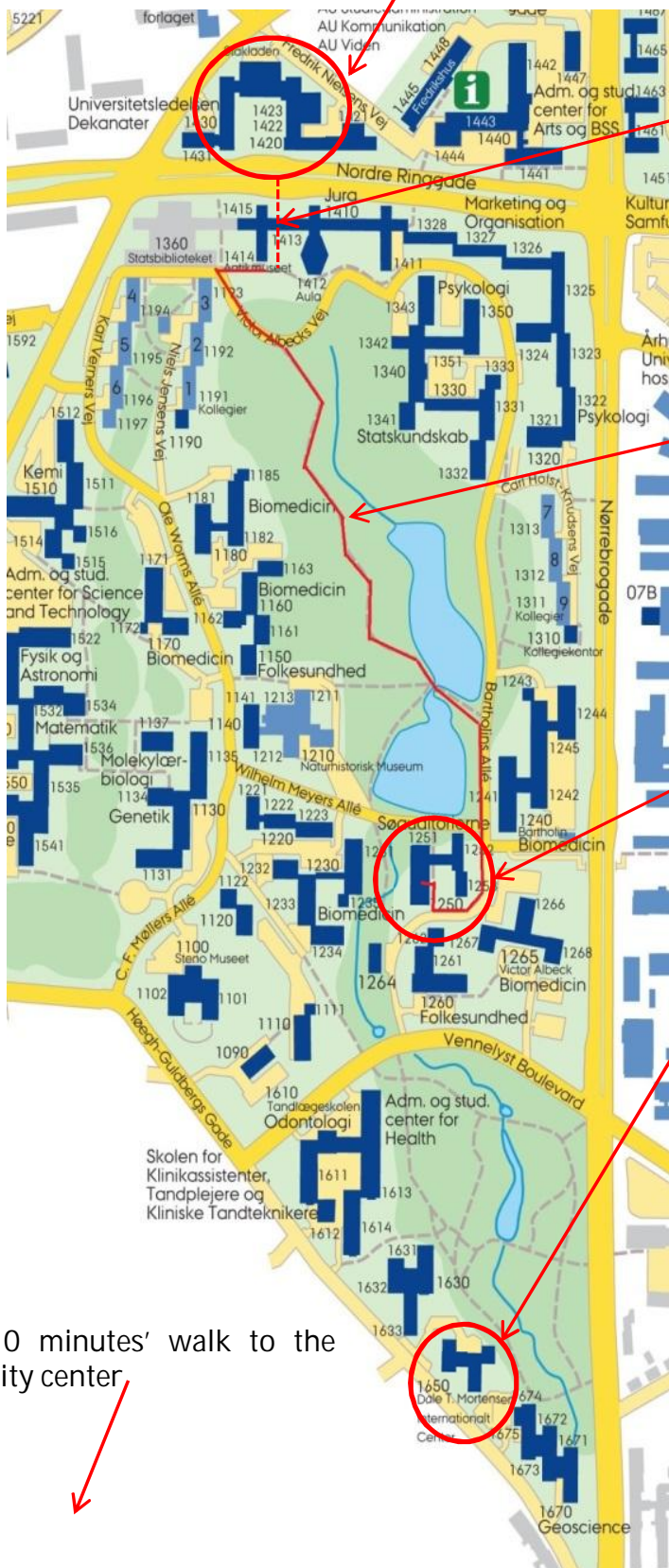
Taxis are available from the main train station. You can hire a taxi by calling +45 89484848. They will be able to take your call in English. Conference staff will be happy to assist you at all times.

Vouchers for Aarhus art museum ARoS

Vouchers for free entrance to the ARoS Art Museum are available upon request during registration. Alternatively, ask conference staff at any time during the conference.

Map of the campus area and conference venues

Venue for pre-conferences, building 1421



Secret tunnel

Walking path through the beautiful University Park from pre-conference site to Lakeside Lecture Theatre

Lakeside Lecture Theatre, building 1250.

"Dale's", small café

10 minutes' walk to the city center

Find your way around campus with the app "AU Find" for Iphone or Android.
<http://www.au.dk/om/organisation/find-au/aufind/>



Book of abstracts

This book contains all accepted abstracts for the 2nd European Health Literacy Conference, April 10-11 2014, Aarhus, Denmark

O-01 - Patient activation and health literacy as predictors of health information use in Dutch health care consumers

Jany Rademakers

Drs Jessica Nijman ¹⁾, Dr Michelle Hendriks ¹⁾, Drs Anne Brabers ¹⁾, Dr Judith de Jong ¹⁾, Dr. Jany Rademakers ¹⁾

¹ NIVEL - Netherlands Institute for Health Services

Research, Utrecht, the Netherlands

Introduction: In demand led health care systems, consumers and patients are expected to play an informed, active role in their own health care, e.g. with respect to the choice of health plans, providers and treatments, self-management, health promotion. In order for consumers to be able to play this role, they have to be adequately informed about relevant aspects of health and health care. Therefore health information and the use of it has become of significant importance. The ability to seek, use and comprehend health information is known to be related to specific characteristics, such as patient activation and health literacy. In this study, the level of patient activation and health literacy in a sample of the Dutch population was measured. Furthermore, the relative contribution of patient activation and functional health literacy to the seeking and use of health information was examined.

Methods: A questionnaire was sent to 2000 members (18+) of the Dutch Health Care Consumer Panel. Among other health related questions, the questionnaire included the following measures: the Patient Activation Measure (PAM) 13-Dutch, the Dutch version of the Set of Brief Screening Questions (SBSQ-D), and a set of questions assessing the seeking and use of health information. **Results:** The mean patient activation score in the Dutch sample was higher for younger health care consumers and for those with a higher education, higher income and better self-reported general and mental health status. A substantial amount of the respondents reported problems with functional health literacy: 9.4% frequently needs help with reading 17.7% doesn't feel confident in filling out medical forms and 23.3% reports frequent problems in learning about their medical condition. Both patient activation and functional health literacy were related to the seeking and use of health information. However, patient activation proved to be a stronger predictor than functional health literacy.

Conclusion: Health information use does not only depend on the level of reading skills, but also on other individual characteristics such as feeling responsible for one's own health, motivation to look for information and self-confidence to be able to ask questions. Health communication strategies, both

on an individual and on a public level, will have to address these aspects as well in order to be more effective.

O-02 - National indicators of Health Literacy: Ability to understand health information and to engage actively with healthcare providers – a population based survey among Danish adults

Anne Bo

Master of Science in Public Health (MScPH) Anne Bo ¹⁾, PhD Karina Friis ²⁾, Professor Richard H Osborne ³⁾, Associate Professor Helle Terkildsen Maindal ¹⁾

¹ Section for Health Promotion and Health Services, Department of Public Health, Aarhus University, Aarhus, Denmark

² Public Health and Quality Improvement, Central Denmark Region, Aarhus, Denmark

³ Public Health Innovation, Population Health Strategic Research Centre, School of Health and Social Development, Deakin University, Melbourne Victoria, Australia

Introduction: Health literacy covers a range of skills and competences necessary for participation in health care and it is a determinant of health inequity. Knowledge of health literacy in the general population is lacking. The purpose of this study was to examine aspects of health literacy related to understanding health information and engagement with healthcare providers.

Methods: A cross sectional population-based survey was conducted between January and April 2013 in the Danish population. Postal invitations were sent to a random sample of 46,354 individuals >25 years of age residing in the Central Denmark Region (22% of the total Danish population). Two key aspects of health literacy were derived from the Health Literacy Questionnaire (HLQTM): i) Understanding health information well enough to know what to do" (5 items) and ii) Ability to actively engage with healthcare providers (5 items), with scores ranging from 1 (easy) to 4 (very difficult). The distribution of these competencies, and associations between them and socio-economic characteristics were explored.

Results: A total of 29,473 (63.6%) responded to the survey. A considerable part of the Danish population perceives difficulties related to understanding health information and engaging with healthcare providers. Low socio-economic position is associated to lower levels of the two investigated health literacy aspects. The results will be presented at the 2nd European Health Literacy Conference in Aarhus.

Conclusion: Danish estimates on health literacy aspects are now available. Our results indicate the need to optimize the health system. The study

points to immediate responses that policy, prevention programs, and clinicians could take to improve population health, especially in vulnerable groups. It is critical that future studies investigate more aspects of health literacy and the relationship to health outcomes.

O-03 - Health literacy and health behaviours in Ireland

James Fullam

Mr James Fullam ¹⁾, Dr Gerardine Doyle ²⁾, Dr Sarah Gibney ²⁾

¹ School of Public Health, Physiotherapy and Population Science, University College Dublin, Ireland

² School of Business, University College Dublin, Ireland

Introduction: Health literacy has been on the periphery of the public policy agenda in Ireland since 2002, however academic interest and relevant data have been relatively sparse until now. Data from The European Health Literacy Survey (HLS-EU) was used to determine the prevalence of limited health literacy in the Irish population, to determine the most important predictors of health literacy and to examine associations between health literacy and health behaviours.

Methods: A cross-sectional survey was carried out with a nationally representative sample of Irish adults, data was collected in July 2011. Multivariate logistic regression was used to determine the most important predictors of health literacy and also to explore the relationship between health literacy and i) health behaviours and ii) health status.

Results: Data was collected from a sample of 1005 individuals (response rate 69%). Of those 10.3% had inadequate health literacy, 29.7% had problematic health literacy, 38.7% had sufficient health literacy and 21.3% had excellent health literacy. Multivariate logistic regression showed functional health literacy, proxy measures of socio-economic status, and age to be significant predictors of limited health literacy. Limited health literacy was associated with smoking and less frequent exercise in univariate analyses but significant associations did not persist in multivariate analyses. Adequate health literacy was a strong predictor of good self-rated health in univariate analysis, again however the association did not persist in a multivariate model.

Conclusion: The results show that a large proportion of Irish adults have poor health literacy and identifies those most at risk of limited health literacy. Examining the results of this analysis in the context of existing Irish data on literacy, health behaviours and health outcomes establishes a foundation for future research in the area. It also highlights potential targets for the integration of

health literacy into public health and education policies.

O-04 - The Relationship Between Health, Education, and Health Literacy: Results From the Dutch Adult Literacy and Life Skills Survey

Iris van der Heide

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Introduction: Health literacy has been put forward as a potential mechanism explaining the relationship between education and health. However, little empirical research has been undertaken to explore this hypothesis. The present study aims to study whether health literacy could be an explaining pathway by which level of education affects health status.

Methods Health literacy was measured by the Health Activities and Literacy Scale (HALS), using data from a subsample of 5,136 adults between the ages of 25 and 65 years, gathered within the context of the 2007 Dutch Adult Literacy and Life Skills Survey (ALL). Education was measured by the highest self-reported level of education completed. Linear regression analyses were used to estimate the extent to which health literacy mediates educational disparities in self-reported general health, physical health status, and mental health status as measured by the Short Form-12. All analyses were controlled for age and sex.

Results Level of education was significantly associated with health literacy; those who completed tertiary education showed the highest mean health literacy score. Mean health literacy scores decreased gradually with each lower level of education. Being lower educated was also associated with poorer self-reported general health, physical health, and mental health. These associations were found to be mediated by health literacy.

Conclusion Health literacy partially mediates the association between education and self-reported health status. The findings of this study suggest that strategies for reducing education-related disparities in health may benefit from attention for health literacy.

O-05 - Approaches to measuring health literacy in various contexts in Norway - from 2007 to 2013

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Introduction: Don Nutbeam's (2000) definition of health literacy (HL) has had a major influence on how researchers have attempted to measure HL in various contexts. Nutbeam's division of HL in three dimensions; functional HL, interactive HL, and critical HL has shaped the development of questionnaires that have been tested in various target groups in Norway during the period of 2007-2013. Particular interest has been to try to operationalize and measure interactive HL and critical HL in health promotion settings - and not in clinical. However, these approaches are mainly conducted as master theses and exclusively published in Norwegian. It was further attempted to operationalize and measure nutrition-oriented health literacy, a sub-concept which according to Silk et al. (2008) might largely overlap with Nutbeam's definition of HL. The purpose of this presentation is to report on how our research unit and students operationalized and measured both HL and nutrition-related HL in various national contexts over a period of six years, as well as show some results from these pilot test-like studies.

Methods: HL was measured in national samples of high school students; physicians; public health nurses, and diabetes nurses, while nutrition-related HL was measured among users of a fitness studio; employees at three companies; nursing students, and young athletes. All these studies were based on self-developed questionnaires, which mainly consisted of standard Likert-scaled attitude statements intended to build constructs reflecting the three dimensions of HL and nutrition-related HL. In some cases, it was also developed knowledge tests to add new aspects of the functional and critical dimension of both HL and nutrition-related HL. The analyzes followed the rules of classical test-theory (conducting factor analysis and reliability analysis measuring coefficient Cronbach's alpha - CCA - to establish constructs). To compare scores on the established constructs, correlation tests, t-tests and ANOVA were applied. To investigate possible significant predictors of the variance in the constructs as dependent variables, both linear and logistic regression analysis were conducted.

Results: In most contexts, the statistical analysis succeeded in establishing three separate constructs for theoretical dimensions of HL and nutrition-related HL. However, further analyzes showed that

these three dimensions were not be strictly hierarchical structured, as alleged by Nutbeam (2000) and Silk et al. (2008). This was also later pointed out by several researchers, for instance Sørensen et al. (2012) and Gutterud & Pettersen (2013). In a pair of studies, two interesting sub-constructs of the critical dimension (critical HL and critical nutrition-related HL) evolved through the factor analysis. Either way, a consistent finding in our research was that the respondents scored lower on the critical dimension than the on other two (functional and interactive), and this was particularly true of the statements about whether the respondents knew the difference between scientific and non-scientific based health/nutrition information.

Conclusion: Our Norwegian research approaches to measure HL and nutrition-related-HL show an interesting 'historical development', especially how we operationalized the concepts. This may be of general importance to the further development of the HL concept, itself, as well as for constructors of HL-measurement tools.

O-07 - Older adults' needs and perceptions regarding health literacy components: participatory focus group discussions in three European countries

Liesbeth de Wit

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Introduction: Health literacy (HL) is one of the determinants of health. Physical and mental decline inherent to aging make people at older ages vulnerable for lower HL, which is associated with lower quality of life. To promote older adult's HL there is a need for effective HL interventions that target older adults within their living environments. The success of such interventions strongly depends on the needs and perceptions of older people living within their particular socio-cultural context. Hardly any research in the field of HL has studied this essential topic. The aim of this study is to explore the needs and perceptions regarding HL related components of people >50 years old who live in less privileged urban neighborhoods in Hungary, Greece and the Netherlands.

Methods: This study included the perspectives of a diverse group of older adults as well as health professionals. In each country 2 participatory focus group discussions were conducted with healthy and less healthy older adults and 2 with health professionals from different professions, such as nurses, social workers, GPs and physicians. In total 50 older adults and 30 health professionals participated. The results were validated through follow-up sessions. A grounded theory approach was used to allow the most important topics emerge from the data itself. Standardized protocols for designing the study, coding and data analysis were used to assure consistency between the researchers in the different countries.

Results: The participants' stories in all 3 countries reflected three overarching main themes: 1) importance of autonomy for managing individual health and wellbeing; 2) support of social network in care and wellbeing; and 3) trust in health care providers, health services, the health care system and the wider system.

Conclusion: Having and maintaining autonomy, a social network and trust in all levels of the health care system relate to components of health literacy, such as health seeking behavior, and influence older adult's wellbeing. This empirical data contributes to the understanding of and evidence for designing effective health literacy interventions in Europe.

O-08 - Development and evaluation of taxonomy of health literacy interventions

Andrea F. de Winter

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Objectives: To develop and evaluate taxonomy to describe interventions to improve outcomes of older adults with poor health literacy, targeting either (older) adults, professionals or their context (family, peers, and community, and health system, respectively). An intervention taxonomy may be defined as a classification system that categorizes the characteristics of interventions. It may help to improve intervention research among older adults by standardizing the descriptions of health literacy interventions, thus supporting communication among and between care providers and researchers.

Methods: The taxonomy was developed and evaluated with a stepwise approach. First, we used literature on taxonomies or classifications of

interventions to develop draft taxonomy. Second, we tested the feasibility of the draft taxonomy by assessing whether two independent reviewers could classify health literacy interventions with this taxonomy in a reliable way. These interventions were derived from a set of 25 articles on a wide range of interventions. Inter-rater agreement was measured by Cohen's kappa, for each item of the taxonomy. Third, the feasibility of the (adapted) draft taxonomy was evaluated with health literacy researchers across Europe regarding its suitability. **Results:** The taxonomy classified objectives into seven categories:

- 1) to inform and educate,
- 2) to teach skills,
- 3) to support behaviour change and maintenance,
- 4) to strengthen contextual support,
- 5) To facilitate involvement of individuals at the system level,
- 6) to customize health literacy interventions or enhance the implementation of these interventions, and
- 7) to change the social, cultural or physical environment in order to enhance the effects of health literacy interventions.

Furthermore, it enabled the description of specific characteristics of interventions were described such as complexity, mode and/ or intensity. To inform and educate, to teach skills and to enable behavioural changes were the most frequent rated objectives with kappa values varying from 0.46 to 0.66 indicating moderate to good reliability. Very few interventions aimed to customize health literacy interventions to clients or to change the environment, making it impossible to compute kappa's for these objectives. Researchers considered the taxonomy useful for practice and research, both regarding its application on objectives and on characteristics of interventions.

Conclusion: A comprehensive taxonomy was developed for health literacy interventions targeted at (older) adults, professionals or their context. The taxonomy has proven to be easy to use, able to classify the contents of a large range of health literacy interventions, and reliable in classifying the most frequently pursued objectives. We expect that this taxonomy of health literacy interventions will contribute to describing and evaluating the evidence regarding multifaceted or complex health literacy interventions. However, its reliability and added value should be further assessed in various settings.

O-09 - Patient attitudes to a personal controlled health record - associations with health literacy? - Results from survey among chronically ill patients

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Background: Electronic health records promise to facilitate exchange and availability of health and health care utilisation related information in order to improve the quality of care and/or to save costs. With a Personally Controlled Health Record (PCHR) the patient controls what health information goes into it, and who is allowed to access it. A PCHR might be a powerful tool to enhance patient autonomy. A sensible use of a PCHR requires patients to be health literate. In a pilot study we explored associations between the general attitude towards a PCHR, the willingness to provide access to health information, and a variety of background variables.

Methods: In April 2012 we undertook a written survey among patients with known chronic diseases. The study population comprised a random sample of beneficiaries (born 1942 to 1994) of a German sickness fund with a hospitalisation in 2011 for either bronchial asthma (n=250), diabetes mellitus (n=250), or coronary artery disease (n=250). The questionnaire comprised items on (1) attitudes towards a PCHR, (2) selected health literacy domains, (3) technology commitment, (4) experiences with health care, and (5) socio-demographic variables. We used items and scales validated in German population based surveys and performed descriptive and multivariate analyses.

Results: 184 patients returned a valid questionnaire (response rate: 24,5%). 54,2% are male (average age 54,8 years). The majority (58,6%) belongs to the working class, 20,7% to the upper class, and 20,7% come from underprivileged class. The three target conditions are spread evenly. Respondents judge their general health status as poor in 10,2% (rather poor 36,9%, good 45,5%, very good/excellent 7,4%). Technology commitment is low. Basically there is a positive attitude towards a PCHR: 47,5% would definitely like to have a PCHR, 36,7% would consider having a PCHR, only 9,2% are opposed and would not take a PCHR. Better informed health care providers are the main benefit of a PCHR from the perspective of the respondents (74,3% agreement). Improved quality of care or cost containment are judged to be less obvious benefits (53,9% and 48,6% agreement). Surprisingly, least important respondents perceive being better informed themselves (46,2% agreement). Agreement that unsolicited use of personal health information, discrimination against illness, or reputation damage are risks of a PCHR is 27%, 19,4% vs. 12,3%. Respondents would provide permanent PCHR-access to their general

practitioners (GP) in 87,2%, to specialists and hospitals in 67,4% and 68,8%, whereas to pharmacists and other health care providers only in 10,9% vs. 10,0%. Tested multivariate a negative attitude towards a PCHR is most strongly associated with the unwillingness to provide access to health professionals other than GPs, specialists or hospitals. None of the included background variables shows consistent associations with the willingness to provide access to a PCHR or the general attitude towards the PCHR.

Conclusions: Survey participants are positive towards a PCHR, less convinced of a personal benefit and sceptical to provide access to a wider range of health professionals. The role of health literacy related variables remains unclear. However, the response rate of 24% does not preclude non-response bias. Further research on a larger sample size is warranted.

O-10 – “Talk them through it”. Towards an interpretive description of context-specific health literacy ability in family members to young people with psoriasis.

Gitte Susanne Rasmussen

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Introduction: Young people struggle to integrate psoriasis into daily life and minimize its influence on appearance and functioning. Psoriasis is a long-term condition with cumulative life course impairment which may impact the entire family. Family members' health literacy impacts adherence to treatment and self-management. Only a few studies report on family members' need for educational support. The aim of this qualitative study was 1) to achieve a deeper understanding of implications of being a family member to young people with psoriasis, and 2) to explore their need for education to facilitate the ability to support their young people in managing psoriasis and integrate treatment in daily life.

Method: The design was guided by the UK Medical Research Council's model for developing complex interventions. Interpretive description was chosen as a research strategy and provided a logical structure and philosophic rationale intending to

generate credible and meaningful disciplinary knowledge. Data were constructed through focus group discussions, individual interviews and questionnaires including 4 related family members, all mothers. The analysis was conducted inductively: From the first translations to prose telling the story of the family members, to broad codes and finally conceptualizing new understanding.

Findings: Decision making was the main concern for mothers whose young people had all suffered from psoriasis since early childhood. This included decisions about treatment and care, about the relationship to the health care professionals, about how to communicate in relation to environment and how to understand the young people's development. The mothers experienced a huge responsibility for the choices they had made, including whether to treat the skin or abstain from treatment due to concerns about side effects. They experienced that it was difficult to obtain knowledge about the disease, and the decisions they made were most often based on their own experience, beliefs about the disease and intuitive attitudes towards pros and cons of treatment. As the disease and life progressed, they were confronted with the consequences of their choices including the prize the young people paid for not having been treated. Through the disease trajectory, the decision process was associated with feelings of loneliness, powerlessness and hopelessness and, at times, guilt in relation to passing on a hereditary disease and guilt in relation to not being able to help the young people during adolescence. The mothers argued their need for group-based interventions targeted at

- 1) family members,
- 2) family members together with the young people, and
- 3) the young people themselves.

The interventions should be offered at different life stages, be an integrated part of the treatment and facilitate decision making ability, language skills about psoriasis, skills to manage the inside and the outside of the disease, and skills to support their young people through adolescence into adulthood with this disease.

Conclusion: This study argues that health literacy may be an asset to be built throughout life course and an outcome that supports the family members' health decision making. Family members need skills, not least verbal skills, to be able to interact with and support the whole person getting through adolescence to early adulthood. Further interventions should support the development of context-specific health knowledge relevant to psoriasis.

O-11 - Understanding and developing critical health literacy

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Background: Interest in and debates around health literacy have grown over the last two decades and key to the discussions has been the distinction made between basic functional health literacy, communicative/interactive health literacy and critical health literacy. Of these, critical health literacy is the least well developed with a lack of consensus definition and differing interpretations of its constituents and relevance. The design, implementation and evaluation of interventions depend upon there being a theoretical framework in place. This, in turn, depends upon a clearly defined conceptual understanding.

Method: The research used an applied evolutionary concept analysis method to systematically identify the key features associated with this concept. A unique characteristic of this method is that it combines analysis of the literature with in depth interviews with practitioners and policy makers with an interest in the field. Finally, two case studies were undertaken with health promotion and community development projects to explore how critical health literacy is developed in practice.

Results: Findings revealed a unique cluster of characteristics associated with critical health literacy including; advanced personal skills, health knowledge, information skills, effective interaction between service providers and users, informed decision making and empowerment including political action. The case study element of the research demonstrated that while there are few projects that claim to be developing critical health literacy, there are health promotion and community development projects that are in fact doing so, through the specific development of the characteristics identified.

Conclusions: This research shows that critical health literacy has not been well defined or understood and needs to be so if it is to be measured. Findings show critical health literacy to be a unique concept with characteristics distinct from the closely related concept of empowerment. However, there remain significant contextual variations in understanding particularly between academics, practitioners and policy makers. Key attributes presented as part of this concept when it was first introduced in the literature, particularly those around empowerment, social and political action and the existence of the concept at both an individual and population level, have been lost in more recent representations. This has resulted in critical health literacy becoming restricted, in some

interpretations, to a higher order cognitive individual skill rather than a driver for political and social change. Examples from the case study elements of this research demonstrate how all the attributes of the concept, beyond the individual cognitive skills, can and are being developed in practice, using participatory and deliberative processes which are well established within the field of community development.

O-12 - Functional and complex health literacy levels in refugees in Sweden

Josefin Wångdahl

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Background: Worldwide there are more than 10 million refugees many of whom have poorer health compared with indigenous populations. One plausible explanation for this inequality in health is poorer health literacy in refugees, i.e. not being able to access, understand, appraise or apply health information. The main purposes of this study were to determine functional and complex health literacy levels among refugees in different subgroups in Sweden. Further aims were to investigate socio-demographic and health related factors associated with inadequate health literacy.

Method: We performed a cross-sectional study in 455 adult refugees speaking Arabic, Dari, Somali or English. Data were collected among participants in 16 strategically selected language schools for immigrants across different regions in Sweden. Health literacy was measured using the Swedish Functional Health Literacy Scale, and The HLS-EU-Q16 questionnaire. Group differences were investigated using uni- and multivariate statistical methods.

Results: About 60 % of the refugees had inadequate functional health literacy, and about 80 % had limited functional (inadequate- or problematic functional health literacy) health literacy. About 27 % of the study population had inadequate complex health literacy, and about 62 % had limited complex health literacy (inadequate- or problematic complex health literacy). Having low education and/or being born in Somalia were factors significantly associated with having inadequate functional health literacy. Having inadequate functional health literacy was further significantly associated with having inadequate complex health literacy.

Conclusions: The majority of refugees participating in the language schools had limited or inadequate health literacy. The levels of functional and complex

health literacy in this study are lower than what has been seen in many indigenous populations. Health literacy is an important factor possibly determining the health of vulnerable individuals and should, thus, be taken into consideration in context as well as planned activities. However, more research is needed for to better understand the levels of health literacy among refugees and factors determining it. Ultimately there is a need to develop targeted strategies and methods increasing health literacy as well as facilitating life for those with low health literacy.

O-13 - Health Literacy in vulnerable populations in Germany - a follow up study on the European Health Literacy Survey

Gudrun Quenzel

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Introduction: The European Health Literacy-Survey (EU-HLS) focused on health literacy-levels of the general population in eight member states of the European Union (EU). Older people, people with chronic diseases, migrants, and young people with lower educational backgrounds demonstrated exceptionally low health literacy levels - in consequence these groups experienced higher risks not to receive necessary information or medical aids. A total sample size of 1000 participants made it difficult to understand subgroups with problematic health literacy-levels. Therefore, the aim of this study is to investigate health literacy-levels in these populations with high vulnerability by conducting differentiated analyses.

Methods: The faculty of Public Health of the University of Bielefeld conducts a follow-up survey on the EU-HLS. The project started in October 2013. The focus is on elder people between 65 and 80 years (n=500) and younger people with lower educational backgrounds between 15 and 25 (n=500). In addition, half of the participants in both age-groups will be immigrants or with immigrant background.

The questionnaire is based on the HLS-EU-Q from 2011. It is supplemented with questions regarding health behavior, health care utilization, well-being, social support, and personal factors like coping strategies, self-efficacy, and locus of control. According to the EU-HLS the interviews will be held as computer assisted personal interviews (CAPI) in the German state North Rhine-Westphalia.

Results: First preliminary results will be presented at the conference. In particular, the percentage of people with problematic health literacy-levels in

different vulnerable groups such as less educated younger people or older people, migrants from different age groups, etc. Additionally, we will scrutinize the relationship between health literacy and health behavior. Further, the focus on older people allows insight in the impact of chronic diseases on health literacy.

Conclusion: The survey offers insight, in health literacy-levels of populations with high vulnerability. Thus, it provides knowledge for political action to improve access to health care, self-management abilities and health care.

O-14 - Ageing, cognition, and health literacy decline in the English Longitudinal Study of Ageing

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Introduction: Although health literacy is assumed to decline with age, this relationship and the potential contribution of cognitive changes during aging have not yet been studied longitudinally. Therefore, we investigated the longitudinal association between age and health literacy decline, the role of cognitive decline, and the sociodemographic risk factors for ageing-related health literacy decline.

Methods: We used data from 5,253 participants (age ≥ 52 years) from two waves of the English Longitudinal Study of Ageing between 2004 and 2011. Participants completed a four-item health literacy assessment based on a fictitious medicine label from the International Adult Literacy Survey at baseline (2004-5) and follow-up (2010-11). Limited health literacy was defined as scoring $<4/4$ items correct on the assessment, and decline as a decrease of ≥ 1 item correct over the follow-up period. Multivariable-adjusted logistic regression was used to estimate odds ratios (OR) and 95% confidence intervals (CI) for the association between age (by five-year age group at baseline) and health literacy decline over the follow-up period. Declines in memory and executive function over the follow-up period were examined as potential mediators of this association. Sex, ethnicity, occupational class, and educational attainment were included in multivariable regression modelling.

Results: Limited health literacy was linearly associated with age at the baseline assessment, going from 22% at 52-54 years to 36% at ≥ 80 years ($p < 0.0001$). Over the six-year follow-up, health literacy decline was observed from age 65,

with the greatest decline at the oldest ages (p trend < 0.0001). The multivariable-adjusted OR for health literacy decline over follow-up among those aged ≥ 80 years (vs. 52-54) was 2.86 (95% CI: 1.96-4.17). Although cognitive decline was associated with health literacy decline (memory decline: OR=1.36; 95% CI: 1.18-1.58; executive function decline: OR=1.33; 95% CI: 1.14-1.56), it did not explain the association between health literacy decline and increasing age, which remained significant. Independent of baseline age and cognitive decline, men (OR=1.20; 95% CI: 1.03-1.39), those from an ethnic minority background (OR=2.50; 95% CI: 1.53-4.09), from routine (vs. professional) occupations (OR=1.71; 95% CI: 1.41-2.07), and with no educational qualifications (OR=1.54; 95% CI: 1.24-1.91) were more likely to experience health literacy decline.

Conclusions: Health literacy skill loss began around age 65 in this cohort of older adults and was profound among adults aged ≥ 80 years. Cognitive decline contributed to health literacy decline, but did not explain the relationship with age. Men and those from deprived or minority backgrounds were at increased risk for health literacy decline during ageing. Future research should clarify the role of cognition in health literacy and examine potential interventions for older adults at risk of health literacy skill loss.

O-15 - The health literacy of young adults in Taiwan using the HLS-EU-Q

Peter Chang

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Introduction. While a growing interest in health literacy researches has been observed in Asia and several assessing tools have been developed in different languages. This study examined health literacy and its relevant determinants that may associate with health literacy in young adults in Taiwan.

Methods. Specifically, the study is based on the European Health Literacy Survey [HLS-EU] conducted in 2009-2012 to assess self-perceived difficulty in health-related situational decision-making and tasks, using the European Health Literacy Questionnaire: HLS-EU-Q. With established validity and reliability, additional questions

regarding local culture and society for establishing Health Literacy Survey in Taiwan [HLS-EU-Taiwan]. A sample of 510 young adults from 9 universities across 5 cities in Taiwan was tested.

Results. Overall, university students with low health literacy were more likely to self-assess financially deprived and report poor health status, lower social status, and they tended to have lower frequency of physical exercise. We have also categorized our respondents into three academics to identify associate significant determinants. Several main predictors: frequency of watching medical TV series, previous medical training background, self-assessed financial deprivation and self-assessed health status, influenced students with Humanities background the strongest than Social Science and Science & Technology major.

Conclusion. This study was the first survey to use HLS-EU-Q in young adults in Asia and the results demonstrated a sensitive measure, which could be considered for national level measurement and international comparison.

O-16 - Using National Health Literacy Survey Results to Improve Practice, Develop Policy, and Strengthen the Research Base for Promoting Health and Self-Care

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Introduction: A substantial body of scientific literature indicates the strong association between low health literacy and health outcomes. Low health literacy is significantly associated with increased hospitalization, increased use of emergency services, infrequent use of preventive services and poorer outcomes for chronic disease indicators, poorer health status and greater use of health resources. The Israel National Health Insurance Law guarantees healthcare to all citizens in Israel according to the principles of equity and reasonable accessibility. A National Health Literacy Survey (HLS-ISR) was conducted in Israel in 2012, among 600 participants in a representative sample, members of Clalit, Israel's largest health service organization. The objectives of were to:

a. Develop and validate a research instrument for measuring and estimating health literacy among the general adult population in Israel, based on the Health Literacy Survey of Europe (HLS-EU).

b. To empirically assess health literacy in the general population in Israel and characterize by gender, age, education, ethnicity, religiosity and socio-economic status, thus identifying populations at risk for low health literacy; c. To study the association between health literacy, use of healthcare services, health behavior and self-reported health, sources of health information, health empowerment ; d. To allow for comparison of health literacy indicators of the Israeli population with those of different regions of Europe (HLS-EU study).

Multivariate analysis showed education ($\beta=1.8$) and income ($\beta=2.2$) were the main significant contributors to low health literacy. Low health literacy was significantly associated ($p<0.0001$) with greater use of healthcare services, higher prevalence of reported chronic conditions, higher rate of disabilities and hospitalizations, low self-rated health.

Contribution to practice, policy and research in Israel:

This study contributes to the growing body of studies that seek to interpret evidence regarding health disparities in Israel, and what can be done to reduce them. The results of the HLS-ISR significantly influence planning of health promotion policy and practice, primarily in the health care system. The focus is currently on two parallel action areas: improving the level of health literacy, while promoting health care organizations to be more health literate friendly, adapting services to the various levels of health literacy. Based on the HLS-ISR study, continued research is planned for determining the contribution of health literacy to chronic disease management, as well as to implement innovative, participatory interventions based on the components of the HLS-ISR (EURO) measure. Additional research will be conducted to determine to what extent low health literacy as a risk factor is resilient, for example, regarding navigation in the health system, and transformed to a health asset. Finally, the results of this study provide a basis upon which the financial cost of low health literacy can be estimated, providing necessary information for policy makers to make informed decisions and engage in long-term planning in reducing disparities to meet the health needs of the Israeli population. The results of this study significantly contribute to discussion regarding the role of health literacy as a priority area in the public health and health policy arena.

O-17 - False self-perception of functional health literacy in North Rhine-Westphalia:

Identifying endangered groups using the HLS-EU data

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Introduction: Within the European Health Literacy Project 2009-2012 (HLS-EU¹), a survey instrument HLS-EU-Q was compiled, providing data on self-perceived health literacy ("HL") in the fields of Healthcare, Health Prevention and Health Promotion, concerning the abilities of finding, understanding, evaluating and applying health-relevant information. The federal Institute for Health NRW was one out of eight European project partners.

The NRW data helps gauging the problem of overestimating one's capability concerning functional HL, since the survey was accompanied by the objective Newest-Vital-Sign-Test.

We want to identify possible characteristics of this group of participants, since it can be assumed that they give themselves a false sense of security when dealing with information concerning their health.

Methods: Within the HLS-EU-Project, CAPI-interviews with 1,057 participants (aged 15+ yrs.) were carried out in July 2011 in the German federal state of North Rhine-Westphalia (NRW). The questions dealt with Healthcare, Health Prevention and Health Promotion, complemented by the "Newest Vital Sign"-test (NVS), measuring functional HL via alphanumeric skills based on a nutrition label from an imaginary ice cream container. Participants were also asked to assess their difficulties of understanding when reading food label information, and these statements were checked on consistency with the NVS-score. Logistic regression was performed to determine effecting variables on true and false self-perception in respect thereof.

Results: A total of 38% of the NRW sample show a NVS-score prodding to probably or possibly limited functional HL, and 54% acknowledge difficulties understanding food labels. In this regard, the NRW-sample shows a degree of congruity of 58% (= true self-perception). The remaining 42% of participants present a false self-perception, and almost 1/3 of this group overestimate their ability to understand information on food labels. Factors promoting self-overestimation significantly are migrant background and older age (64+), whereas gender and education show weaker associations. On the other hand, factors promoting true self-estimation, amongst others, are female sex (61% vs. 54% in males) and young age (<30 yrs.).

Conclusions: Within the NRW sample, first indications could be identified that may influence a false self-perception of functional HL. Further data analysis will focus on this subgroup of self-

overestimators, whose vulnerability may take the form of false security, as this may lead to an unintended risky behaviour or ignoring of useful although missing information.

O-18 - Quick Scan Health Literacy in hospitals. Development and implementation of a practice based toolbox in Dutch hospitals

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Introduction: In the Netherlands more than 25% of the adult population has (very) poor health literacy skills (HLS-EU, 2010). These people are not able to find relevant information, to understand it, and to apply it for health-related decisions. By improving people's access to health information and the health care system and their capacity to use it effectively, hospitals can contribute to the empowerment of people with low literacy skills, resulting in better health outcomes and lower costs. With the Toolbox Quick Scan Health Literacy, hospitals are able to screen their communication with patients who are less health literate. The Toolbox includes screening tools on written information (e.g. leaflets and forms, digital information (e.g. websites), oral information (consultation by health care professionals), and access to/ navigation in the hospital (interview).

By using the Toolbox, hospitals become aware of health literacy and are able to formulate plans for improvement. The Toolbox has been developed by CBO in close cooperation with 6 Dutch hospitals and people with poor literacy skills. It was tested in 2 pilot projects during 2011-2013. Two health insurance companies contributed financially.

Methods: The pilot projects consisted of four phases.

(1) Development of the tools. CBO developed the tools based on (inter)national literature and practice based experiences. Each tool consists of a selfevaluation checklist for hospital professionals and tools which can be used by the target group itself.

(2) Pretesting. Six hospitals pretested the tools (incl. a qualitative and process evaluation) and exchanged experiences in a regional project team.

(3) Adaption. Based on the pretest CBO adapted the tools and a user instruction was developed. The process evaluation will be used to improve the implementation process within the hospitals.

(4) Implementation. The pilot hospitals have taken first steps to embed the tools in general patient

communication policies and activities, quality assessments, quality care policy.

Results: There is a lot of support for the continuation of working on health literacy in the participating hospitals, both at management level as well as on the level of individual employees. All developed tools proved to be useful. Especially the tools directed at the collaboration with people with low literacy skills and the opinions expressed by this target group were perceived as inspiring and supporting. Professionals mentioned for example that the website test was a wake up call and the leaflet-test helps to critically look at patient communication in general. All tools proved easy to use, fitted within daily work routines and it is felt they are easy to adapt to different hospitals and hospital departments. In 5 of the 6 hospitals small improvements have already been implemented. Larger improvements have been included in annual plans such as architectural improvements based on the walking interview. Working with the entire Toolbox has been included in the general policy and will be executed in specific divisions in at least 2 hospitals.

Conclusion: Working with the Toolbox increased the awareness of the hospitals on the subject of health literacy. The tools are implemented successfully on department level and seem usable for both professionals as the target group based on the process and qualitative evaluation. They intend to keep using the tools and therefore an validity check would be worthwhile for the future.

O-19 - Equal opportunities for informed participation in colorectal cancer screening

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Introduction: Colorectal cancer (CRC) is the second most common cause of cancer-related death. CRC screening aims at detecting CRC in an early or preclinical stage, in which early treatment leads to better health outcomes. To ensure that all screening invitees have equal opportunities to make an

informed decision regardless of their health literacy (HL) level, effective methods are needed to adequately inform those with low HL. In this project we aimed to optimize the information materials for the CRC screening programme that will be implemented in the Netherlands in 2014. All individuals between 55-75 years of age will be invited for a screeningtest (iFOBT) that they can perform at home. Our research objective was to explore the accessibility, comprehensibility and relevance of the preliminary information materials for screening invitees with low HL and to assess to what extent the information materials enable invitees with low HL to make informed decisions in CRC screening. The findings of this study will be used to formulate which adaptations in the written and digital information materials are needed in the CRC screening programme to support informed decision-making among invitees with low HL.

Methods: We analysed text characteristics and design of the information materials (notification letter, invitation letter, brochure, and test with instructions for use) and performed qualitative interviews among 30 individuals with low HL who were eligible for CRC screening. A computer-based survey was conducted to test to what extent the information materials enable invitees with low HL (n=150) and adequate HL (n=150) to make informed decisions in CRC screening. HL was assessed by the Newest Vital Sign in Dutch (NVS-D) and Short Assessment of Health Literacy in Dutch (SAHL-D).

Results: The qualitative interviews showed that individuals with low HL experienced problems in processing the amount of information given in the brochure. They found it hard to distinguish between screening- and diagnostic testing and had difficulty understanding some of the instructions for the screenings test. They did not understand the information about costs and insurance and the visual risk presentations in the brochure. The computer-based survey is still ongoing at the moment, results will be presented at the conference.

Conclusion: This research project contributes to the development of information materials for CRC screening that optimize informed decision-making in screening participation in the Netherlands and in other countries as well. The results will be implemented in the Dutch CRC screening programme.

O-20 - Addressing the Health Literacy skills mismatch in England: moving from evidence to policy change

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Introduction: Recent research into levels of health literacy in England show that 43% of England's working age population (aged 16 to 65 years) lack the literacy skills required to fully understand and use health information in common circulation. This percentage rises to 61% when materials contain numerical information or concepts. These results stimulated a project to develop consensus on national changes in policy and practice to address the mismatch between population skills and health information complexity.

Methods: A group of key national experts and stakeholders from the areas of policy, government departments for health and education, patient groups, and senior practitioners in health, education and public safety, met to review the research findings and identify the key areas where changing national policy and/or practice might address the mismatch between population skills and health information complexity, and to identify potential policy changes. This was followed by 2 rounds of web-based surveys. In addition to those who participated in the initial meeting, new participants were identified through a snowball technique. In both rounds, participants were shown the emerging project outcomes, and were asked for additional suggestions for policy or practice change. In the second survey, participants were also asked to rate the impact of the proposed changes on the skills:information complexity mismatch. The final stage of the project was a meeting of key stakeholders, where project findings were reviewed and policy areas prioritized. Stakeholders were asked to consider cost-benefits, potential for building on current initiatives, and potential for working across professional and policy boundaries.

Results: Fifty-one stakeholders participated in the project, representing a range of key public, health and education perspectives. Suggested policy change fell into three broad areas; health, education/lifelong learning, and the non-statutory sector (i.e. non-governmental, charity and commercial organisations). Suggestions included both building health literacy awareness and skills, and increasing the clarity, and accessibility of health information. The suggestions prioritized for implementation were

(1) to raise the standard and accessibility of health information,

(2) to develop the health literacy skills of health care workers,

(3) to develop a national open-access repository of high quality health information from health, education and non-statutory sectors,

(4) to incorporate health literacy into local health strategies,

(5) to work with employers to integrate health literacy skills into apprenticeship programmes, and

(6) to develop the health literacy skills of individuals, families and communities through Community Learning Trusts.

Conclusions: This project enabled stakeholders from a wide range of key public, health and education perspectives to work together to identify, and then prioritise, changes in practice and policy to address the issues of health literacy in England. The areas chosen for implementation balance building citizens' skills with improving the clarity and accessibility of communication of health messages, and emphasise the benefits to be realized through co-operation and inter-disciplinary working.

O-21 - Framing health literacy into the workplace - means and perspective of a preventive intervention

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Background: Musculoskeletal disorders (MSD) is a considerable problem among nursing assistants in Denmark, causing e.g. reduced wellbeing at work and quality of life, increased sickness absence and early retirement. Numerous environmental, societal, personal and situational factors affect the incidence, recurrence and persistence of MSD. Additionally, interpersonal factors such as support from management and colleagues and employee job control can affect development and consequences of MSD.

Interventions designed to improve Health literacy and managing chronic disease, indicate that these interventions positively affect prevalence and severity of MSD. Health literacy contains an individuals' opportunity for prevention (defined as the individual's opportunities to access, understand, appraise and use health information). Organizational and interpersonal factors potentially influence (supports or impair) these capabilities. In the current study, we aim to create workplace health literacy" entailing optimal organizational, interpersonal and individual premises for good health literacy.

Method: This workplace intervention aims to build workplace health literacy for employees in nursing homes through 1) Courses (2 x 3 hours) for employees and supervisors separately. The courses are based on cognitive behavioral training and generate a common base of knowledge about prevention, handling of MSD and tools for improved communication between employees and supervisors about these issues 2) Structured dialogue: Implementation of a 3-weekly structured dialogue between each employee and his/her supervisor to ensure a knowledge flow, and to facilitate the finding of the best solution for each employee. Furthermore, efforts are continuously made to maintain the organizational prevention competences through e.g. half yearly booster courses, roll-ups and theme days at the workplace. Seven workplaces participate in the project with approximately 600 employees enrolled. We will use quasi-experimental design with a stepped-wedge enrolment of clusters and several pre- and post measurements of MSD and workplace health literacy. The effect is evaluated after 6 months with further evaluation of sustainability, up to 2 years after the intervention start. The evaluation will be based on questionnaires (monthly using text messages) and register data (-yearly). Workplace health literacy is measured by a newly developed and validated questionnaire inspired by the Health Literacy questionnaire (HLQ).

Discussion: Individual health literacy is highly dependent on the environment around the individual. The workplace constitutes an important setting for health promotion and prevention initiatives. However knowledge about the effect of interventions to build workplace health literacy is limited. The individuals' opportunity for preventing and handling health issues within the workplace organizational framework, affect the employee health and well-being. Therefore, it is highly relevant to evaluate if the current intervention is a feasible method to improve the organizational, interpersonal and individual premises for workplace health literacy.

O-22 - Can we assume that nurses are always sufficiently prepared to support patients in their health literacy development? The results of the Warsaw cross-sectional study

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Introduction. The question of the quality of the medical staff contribution to the patient's health

literacy development is of great importance. Usually is silently assumed that the medical staff is sufficiently prepared to support patients in their efforts to raise the level of health literacy. Therefore probably researchers mainly focus on health literacy of patients forgetting about physicians and nurses' readiness to cooperate with patients in the health literacy domain. Some empirical data indicate the existence of significant gaps in the medical staff knowledge and skills necessary in the process of patient health literacy building. The purpose of this presentation is to assess selected components of nurses' knowledge, the adequacy of nurses' perception of their own competency, the frequency of providing counseling in nutrition and physical activity, and furthermore to identify the relationships between the nurses' knowledge, self-assessed competency and providing counseling in nutrition and physical activity. **Methods.** The data come from the cross-sectional study which was carried out at the turn of 2005/2006 years in the randomly selected sample of 500 PHC nurses employed in Warsaw (response rate 71,1%). The data were collected in face-to-face interviews. **Results.** The data analysis confirmed insufficient PHC nurses' knowledge of nutrition and physical activity. Only 4.2% nurses correctly answered 4 and 49% nurses only 2 of 5 questions of basic importance for nutrition counseling. Nurses who answered correctly 3 essential questions concerning definition and interpretation of Body Mass Index, accounted for only 32,2% of the studied group. The minimum dose of physical exercise necessary for the prevention of cardiovascular disease correctly identified only 50.3% nurses. 49,2% nurses overestimated their own abilities in nutrition counseling, and 26.2% of them overestimated own abilities in physical activity counseling. Those nurses who recognized their own competency as sufficient, independently on the real one, more often gave advice in nutrition and physical activity. **Conclusions.** Intervention programs planned in health service units and aimed at raising the level of health literacy of patients should be preceded by an evaluation and then filling the gaps in knowledge and skills of medical personnel, including nurses.

Key words: health literacy, nurses, real and perceived competency, counseling, behavioral risk factors

O-23 - Health literacy in migrants: an integrative review of the literature

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Introduction: Health literacy has gained recognition as a crucial determinant of optimal health. It is suggested that certain population groups such as migrants are particularly vulnerable to a variety of acute and chronic clinical and psychosocial problems. Increasingly, they also face legal hurdles to access and navigate health and social care services. Additionally, the financial crisis and its after effects has encouraged novel migratory patterns, with potential challenges for health services. For these reasons, a systematic review of health literacy studies in migrants is carried out to determine gaps in evidence and to inform policy.

Methods: Electronic databases (AMED, British Nursing Index, CINAHL, HMC, Medline, PsycInfo, Embase) were interrogated using the health literacy search string available in Pubmed together with a broad definition of migrant individuals (documented, undocumented, political, economic, etc). Qualitative and quantitative research studies published between 01/01/2000 and 31/12/2012, in English or Spanish language, reporting on health literacy screening or interventions in adult migrants on any healthcare setting or country were selected. The ICROMS quality appraisal tool was used to evaluate the studies.

Results: 55 research papers were selected, all in English language. Geographically, 39 (70%) studies took place in the US, 9 (16%) in Canada, 1 (2%) in the UK and 6 (11%) elsewhere. There exists a marked contrast between studies carried out in the US, with 17/39 (43%) of studies focused majorly on latino/Hispanic and trans-border populations, and the rest of the world. Studies focused predominantly on the impact of health literacy on clinical outcomes. 9/55 (16%) studies reported on HL and screening and management of cancer, followed by development of HL screening questionnaires (7/55, 13%), education and support programmes (6/55, 11%) and structural characteristics of national healthcare systems such as provision of interpreters (6/55, 11%).

Conclusions: Overall, current evidence about HL in migrant individuals is modest and polarised, with a majority of studies carried out in the US and therefore of relative usefulness to inform initiatives elsewhere. The lack of European studies appears surprising, considering longstanding external and recent internal migratory flows. Amongst the pathologies not explored, the absence of HIV/Aids or post-traumatic stress are noteworthy, and suggest areas for further studies. There are other issues to resolve, including the validation of screening scales in migrant individuals.

P01 - Health Literacy on the Public

Agenda: Exploring the Rise of a Social Issue through a Public Policy Approach

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Introduction: Developing our understanding of health literacy is becoming a growing concern for clinicians, managers of health programmes, and researchers. What was a new concept to operationalize one's capacity in accessing, managing, and using information to pursue good health soon became a public health issue on an international scale. Health literacy - as a research field and as a public health concern - is finding its place in public policy agendas. This has only become a reality thanks to the mobilization and work of various groups of actors interacting within the field of public health and medicine.

Due to the interdisciplinary nature of this concept, a number of definitions of health literacy have emerged, bringing with them very different perspectives on health literacy and, furthermore, on health systems. Many studies in the various disciplines studying health literacy have focused on building a consensus around its definition and conceptualization, trying to shape a common idea of this notion. However, a limited number of studies discuss the groups of actors' perspectives in a way that highlight both their elements of consensus and of divergence. Exploring the differences in how each group considers individuals who navigate healthcare and the individuals' social context can enrich our comprehension of health literacy. The opposing views on health literacy may, then, promote adapted applications of research findings in various policy and social settings.

Methods: To advance our sense of the situation of health literacy on the public agenda internationally, the objective of this study is to develop a mapping of the different conceptions of health literacy, organized per geopolitical region and per academic discipline. A literature review is conducted in English and in French throughout major databases, then analyzed under the lenses of sociology and public policy studies. The study draws from theories employed by social scientists to investigate how a social issue is drafted onto the public agenda and how the views of groups of actors contribute to shaping their contribution to the definition and advancement of health literacy.

Goals: Up until today, social determinants of health remain difficult to integrate accurately in government policies. More knowledge about the dynamics of the groups of actors surrounding health literacy should help policy-makers and healthcare managers to take a better hold of this relatively new concept, the issues and social concerns that accompany it, and its evolution in time and across different academic disciplines.

P02 - Validating the Norwegian version of the HLS-EUQ47 and the 3levelHL-scale

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Introduction: Health literacy (HL) is defined in various ways and has been measured by several scales. The 47-items EU health literacy survey HLS-EUQ47, which was developed by an EU-consortium, was recently applied in eight EU countries. The 3levelHLscale is the most frequent used instrument to measure HL among persons with diabetes and was developed by Ishikawa, Takeuchi & Yano. The HLS-EUQ47 questionnaire and the Japanese 3levelHL-scale have now been translated and adapted into Norwegian.

The two instruments rely on different theoretical perspectives of HL, but may be somewhat overlapping. When validating HL-scales, traditional test theory is most frequently used. However, traditional test theory may have limitations in confirming the validity of scales. The aim of this study was a) to translate the two instruments into Norwegian and 2) to validate the scales among persons with type 2 diabetes and in the general Norwegian population by applying modern test theory.

Methods: After performing standard forward and backward translations and analyzing a first field-survey, the instruments were further validated by cognitive interviews and subsequent Rasch-analysis of data from a second field-survey. The frame of reference was first year bachelor students at a university college, persons with type 2 diabetes and employees in three municipalities in Norway.

Results: Preliminary results of the Rasch-analysis revealed that the items and the scales work as intended, and that the items are invariant across gender and subgroups. The dimensionality of health literacy and the targeting of the instruments were also explored. Results of the Rasch-analysis will be presented at the conference.

Conclusions: Rasch-analysis is an important method to validate the data from newly developed HL scales.

P03 - The 'Health Promotion Health Literacy Index' in the 'German Health

Interview and Examination Survey for Children and Adolescents' Wave 2 (KiGGS Wave 2) - First pretest results

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Introduction: For prevention and health promotion, it is very promising to promote health literacy at young age. To gain knowledge of the health literacy levels in young people is the first step. However, in Germany, there is no population survey for health literacy in adolescents, yet. Therefore, the Robert Koch Institute plans to integrate a health literacy index in the KiGGS-study. KiGGS is a long-term population survey and includes interviews, examinations and tests. For KiGGS Wave 2 starting in 2014, a pretest was carried out to test various data collection instruments as well as procedures of the study. In the field of health literacy, the KiGGS wave 2 pretest investigated whether the 'Health Promotion Health Literacy Index' (HP-HLI) of the 'European Health Literacy Survey Questionnaire' (HLS-EU-Q) (HLS-EU Consortium 2012) consisting of 16 items with four answer options in a Likert-scale is suitable for the age group 14-17 years. Another question is whether data collection methods (mode effect) influence the answer choices, because so far the HLS-EU-Q has only been used in populations aged 15 or older and in personal assisted paper interviews (PPI). In KiGGS wave 2 pretest paper and pencil interviews (PAPI) and (CAWI) computer assisted web interviews were used.

Methods: First data of the KiGGS wave 2 pretest sample was randomly collected from August to December 2013 in four federal states of Germany. Response rate is now around 40%. The pretest analyses will compare the rates of missing values in the 16 items of the HP-HLI as an indicator for age specific understanding of the item questions (mean, range). The sample size of the first half of the pretest comprises 313 adolescents aged 14-17 years. A comparison is also carried out between girls and boys and with the missing values of a study on health literacy of 15-year-olds in Austria (Röthlin, Pelikan, Ganahl 2013), also based on the HP-HLI.

Results: The number of adolescents in each age cohort (14, 15, 16, 17 years) was nearly similar between 71 and 86 persons, as well as the proportion of girls and boys (n=121/117), but the study modes were not (PAPI: n=189, CAWI: n=49). The mean of missing values of adolescents aged 14 years (10.9%, range 10.7%-12.0%) was twice as high than that of the older in every of the 16 items of the HP-HLI. The 15 year olds had a range of missing values from 1.4%-4.2% (mean=3.4%), the

16 year olds of from 1.2%-7.0% (mean=4.0%) and the 17 years olds from 1.2%-3.7% (mean=2.2%). In the Austrian study, the mean of adolescents aged 15 years was 3.5%. The mean of boys aged 15-17 years was twice as high as the girls' ones of the same age (4.1% vs. 2.4%). The mean of the PAPI mode (2.8%) showed a lower rate than the CAWI mode (4.6%). Conclusions: The preliminary results concerning the missing values indicate that the HP-HLI is maybe too difficult to understand for some adolescents under the age of 15 years. The other age cohorts show no noticeable missing value rates. The difference between boys and girls might be explained by the fact that girls/women tend to have higher health literacy levels than boys/men. To understand the differences between the survey modes, we need the complete pretest sample. That and further detailed and updated pretests results will presented at the conference. Overall, for the moment the HP-HLI appears to be a suitable tool to measure health literacy in adolescent populations in the field of health promotion.

P05 - Approaching health literacy in Catalonia in the framework of self-promoting

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The Health Plan for Catalonia (HPC) 2011-2015 is the indicative instrument and framework for all public performances in the field of the Health Ministry of the Government of Catalonia. Nine lines of action pointing of the HPC, 3 come together at the same time to identify the health literacy as a key element to face the challenges of community health in the 21st century. These are the lines of action 1 (objectives and health programmes), 2 (more oriented system to chronic patients) and 5 (greater focusing to patients and relatives).

To comply with the HPC 2011-2015 with regard to the area of self-responsibility of patients and caretakers and forms of self-care, one of the strategic projects is the Expert Patient Programme of Catalonia®, which is included in the line of prevention and attention to the chronicity of

Catalonia. The EPPC® is a multidisciplinary initiative based on patient-healthcare professional collaboration and team work. In the EPPC it is the Expert Patient (EP) who leads the process and transmits knowledge about his or her disease to other patients who suffer from the same health problem. The healthcare professional becomes an observer, and only intervenes if it becomes necessary.

The design of specific actions for the promotion and improvement of the level of health literacy of citizens of Catalonia must be based on the analysis of the characteristics of this phenomenon. According to the data of the Health Literacy Project 2009- 2012, the results are not satisfactory levels in Spain.

During the year 2014 the health survey of Catalonia (ESCA-Health survey for Catalonia HSC) included in a specific module version in Catalan and Spanish in the short version of the European Health Literacy Survey Questionnaire (HLS-EU-Q16). This questionnaire, with 16 items, is a shortened version of questionnaire HLS-EU-Q47 elaborated by the European Health Literacy project of HLS, 2009-2012 and currently working on the validation of the questionnaire in the Catalan population.

The ESCA is an official statistical activity provides information relevant to population on the health status, life styles and the use of health services, and in this way to evaluate the objectives of health and reduction of risk and the effectiveness of health interventions. Since 2010 the ESCA has continuous character, that is to say, the collection of information is uninterrupted, with semi annual samples semi independents of about 2,400 individuals who allow the accumulation of results. The sample universe of the ESCA is the population of Catalonia who do not live in collective establishments, without age limit, and the sample unit is the individual. Since the questionnaire HLS-EU administered population 15 years and over, the real show will be more than 3,000 cases.

The analysis of the results of health literacy, starting in 2015, will be the starting point to identify areas of improvement, and allow you to design interventions aimed at different segments of the population, adapted to the needs and expectations of health services of each of them. The ultimate goal of designing these actions for the promotion of health literacy is, in accordance with the definition of the WHO to achieve a cognitive and social skills best determined by the motivation and the ability of people to access, understand and use the information appropriately, in order to promote and maintain a good state of health of the citizens.

P06 - Portuguese cultural adaptation and validation of the European Health Literacy Survey (HLS-EU-PT)

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Introduction: A trans-cultural adaptation and validation of the HLS-EU to portuguese (HLS-EU-PT) will supply policy makers, experts and health professionals with information that can promote healthier communities while fighting health disparities in portuguese speaking individuals. This follows the model to measure Health literacy(HL) proposed in the context of the European project Health Literacy Survey (HLS-EU).

Methods: After permission was granted from the HL European Consortium, the TRAPD model was used with the Haccoun technique. After a parallel translation a focus group considered the first HLS-EU-PT version and submitted it to two back translations. After comparing them adjudication was done and an assessment and pretesting of HLS-EU-PT was done with 54 subjects. The final version of the HLS-EU-PT protocol included the original 86 questions of the HLS-EU-Q86. Documentation on the use of the survey accompanied the final version of the HLS-EU-PT that kept all original dimensions and items of HLS-EU.

Results: A quantitative and qualitative explanatory cross-correlated study with a sample of 480 individuals from Portugal (mainland) was collected for the validation process. A variety of measures were obtained including social support, personal disposition, health-related lifestyle behaviors, and outcomes including health. Age as well as social strata or sex were considered as confounding elements. For evaluation of the psychometric properties of the HLS-EU-PT it was predicted that the HLS-EU-PT scale would demonstrate reliability, satisfactory internal consistency and test-retest reliability. On the validity level focus was for content, face and consensual, before considering convergent and discriminant validity, known groups validity and criterion validity. Exploratory factor analytic procedures to examine the factor structure of the scale was done. Results indicated internal consistence reliability with a high Cronbach's alpha coefficient (between 0.92 for Health Care, 0.92 for Disease Prevention and 0.93 to Health Promotion) and 0.96 to the global HLS-EU-PT instrument. The correlation between HLS-EU-PT, and the NVS suggest the external validity of the scale. Test-retest reliability provided high correlations ($r = 0.88$) between groups. Discriminant validity suggests that the scale is

correlated with social network, social strata health perception and health behaviours. Principal components analysis with a Varimax rotation sequence produced a solution of factors, suggesting that the HLS-EU-PT is a dimensional instrument that follows the original pattern. Inadequate HL (16%) and problematic HL (38%) show that about 51% of respondents have limited HL. One of the many related issues to HL that have a definitive influence on health, are health behaviors. This research shows that when performing bivariate examination of HL with health behaviors, like physical activity ($r = -.23$), there is an association between HL and an healthy life style.

Conclusions: Results enhance the reliability, validity, internal validity, statistical validity longitudinal and linguistic validity, as land marks of the translation and validation process to portuguese of the HLS-EU survey. The usefulness of the HLS-EU-PT instrument can be further discussed while planning public health policy strategies from the HL standpoint. The validated HLS-EU-PT portuguese version of the HLS-EU survey, with the user's manual can be accessed at www.literacia-saude.info

P07 - Developing a method to derive indicative health literacy from routine socio-economic data

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Introduction: Research has shown that low functional health literacy is associated both directly and indirectly with a range of poor health outcomes. Despite concern about the prevalence and consequences of inadequate functional health literacy, there is an absence of tools for efficiently collecting functional health literacy data in large populations. Direct measures of health literacy require in-person evaluation, which is not done in most national and regional health surveys. Multiple reports have found high correlations between test-based health literacy measures and demographic indicators such as age, ethnicity, and years of schooling. Imputed measures based on combinations of these indicators have been proposed.

The objective of this ongoing study is to develop a method of deriving indicative functional health literacy levels from routinely collected socio-economic data (such as age, sex, employment, income, education etc). The method will be developed using English data, but can then be replicated in any country undertaking national or regional surveys on health that includes suitable data on socio-economic characteristics on citizens.

Methods: Using data from respectively "The Skills for Life 2011 Survey" and the identified health literacy competency thresholds from "Defining and describing the mismatch between population health literacy and numeracy and health system complexity" we will investigate which set of socio-demographic variables will best depict whether an individual is being above or below the functional health literacy competency threshold. We are developing and testing a series of models to see which combinations of socio-demographic variables gives us the largest area under the Receiver Operator Characteristics curve. We will estimate measures of agreement (sensitivity, specificity) and discrimination (area under the ROC) as descriptors of each model's ability to predict an individual's health literacy level.

Results: The project is currently ongoing, and emerging findings will be presented at the conference. The outcome of the project will be a new tool to enable indicative health literacy levels to be derived from routinely collected socio-demographic data and applied to regional and national-level survey data. The models will be developed using English data but can be replicated in any country where routine socio-demographic data are collected.

Conclusion: Currently, few population surveys measure health literacy. Our formulae may be useful for researchers to estimate functional health literacy levels in populations from routinely collected socio-demographic data. This will enable exploration of the associations between functional health literacy and health and health behaviors, and facilitate both research and development of health and education services to improve health.

P08 - Using the Health Literacy Survey to Measure Health Literacy in Kazakhstan

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Introduction: Health literacy has continued to gain attention in research and everyday practice over the past decades. According to international health

literacy experts, the subject is linked to education and entails people's knowledge, motivation and competences with regards to access, understanding, appraisal and application of health information to make judgements and decisions in everyday life concerning general healthcare, protection from disease, and promotion of preventative measures. Quantifying health literacy studies is an important issue, which is why it is necessary to recognize and integrate the activity done throughout European and Asian countries. As for the current status of health literacy study in Kazakhstan, there is no representative data on the national or population level, thus making it crucial to develop such a survey.

Aims: The overall aim of this study is to measure health literacy and to create an overview of its status in Kazakhstan. The objectives are to present a work plan and preliminary results of a health literacy survey in Kazakhstan in order to explore core issues and their implications for healthcare in the future.

Results: At the time of submission of the present abstract, we have developed questionnaires in two languages (Kazakh and Russian) for study in Kazakhstan. These questionnaires are based on the conceptual model of the European Health Literacy Study consortium (HLS-EU). In addition to the existing 87 questions, another 18 have been added in order to reflect local diversity and specific interests of the country, as well as having been suggested by the Health Literacy Study project in Asia. We will conduct a scale pilot study in order to test the validity and feasibility of the HLS-Asia-Q prior to its use on the national level. After the pilot testing, we plan to train interviewers on study protocols and data collection tools (the number of which will depend on the duration of the study, given a sample size of 1000 participants).

Conclusions: The project is a work in progress. However, there is already growing interest in this promising venture, including among politicians, stakeholders and researchers. The implementation of this study will require cooperation between many partners. Furthermore, addressing health literacy requires great capacity within the public health sector.

P09 - Health Literacy in Childhood and Adolescence (HLCA) as a Target for Health Promotion and Primary Prevention - The German HLCA consortium

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Health literacy has widened from individual functional skills in medical word recognition, text comprehension, and numeracy to other skills required to access, appraise and use health information. Integrative health literacy concepts put a stronger focus on underlying competences and motivation and encompass social and life skills. In addition, the widened understanding of health literacy has also been recognized for its quality to shift the focus from individual-level skills to social, economic, or environmental forces that impact on health at population- and system-level. The recent conceptual developments make health literacy a promising target for health promotion and primary prevention because they a) allow for integrating behavioral and contextual factors, b) can be linked to related approaches from e.g. social epidemiology or socialization research, and c) serve for the development of measurement tools to assess dimensions other than those that are usually used to inform on health literacy levels in populations.

Screening of scientific literature however reveals that children and adolescents have poorly been included into health literacy research. Gaps encompass e.g. prevalence data, definitions, concepts and models refined for different age groups, the formulation of needs of and demands on health literacy for children and adolescents, or for adult people who impact on child health. This contrasts with the importance given to children and adolescents for health promotion and primary prevention. The available body of literature highlights the importance to focus on this age group as well as on adults and systems with impact on child health (parents; educators; teachers; provider of health services).

Here, we present the German Health Literacy in Childhood and Adolescence - HLCA" consortium launched to meet the needs as outlined above. The consortium aims at developing, adjusting, implementing, and evaluating theoretical, conceptual, and methodological health literacy approaches linked to children and adolescents. The consortium aims to target also adults and systems with impact on child development. It takes a multidisciplinary approach involving partners from academia, stakeholder in Public Health and Education and other who work in settings relevant for children and adolescents in- and outside healthcare. We will focus on the theoretical and conceptual development of a health literacy understanding that is adjusted to children and adolescents and focuses on health literacy and

primary prevention as well as on applied research with foci on mental health and e-Health literacy

P11 - A participatory approach to asthma education may improve children's health literacy to meet demands in everyday life

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Introduction: Programs where children participate in the development of educational materials or programs are lacking. Traditionally, asthma education programs (AEP) are developed by professionals. In this study children's perspectives were incorporated into an educational program and these children were involved in the development and implementation of this program.

Methods: Development of the program: The asthma educational materials included a storybook that was written for children with asthma. This material was previously developed by an interdisciplinary team together with children and parents. The AEP was developed locally based on the educational material and a co-operative inquiry process, where children with asthma, parents and health care personnel (HCP) participated.

Implementation of the program: The pedagogic approach used for this AEP, was theories of meaningful learning; the new knowledge must be related to the learner's current knowledge, the content must be relevant to and within the context of the learner's knowledge, the learner must be active in the learning process, peer discussions are central, reflection integrates knowledge in a meaningful way, and the learners' questions are the driving force. The main pedagogic tools were stories and pictures. The AEP was group based and a total of 21 children divided into 6 groups, with 3-4 children in each group participated in the AEP.

Evaluation of the program: One of the six AEPs, the third one conducted, was observed for a total of three hours. This AEP was selected after the HCP tested the program and were satisfied with its function. In the observed AEP three participants (8-10 years old), two girls and one boy participated. These children had moderate or severe asthma that was treated daily with asthma medications. Two HCPs participated in the study, a nurse who specialised in asthma and a physiotherapist who led the AEP session.

Results: The significance of the asthma education programme emerged in four themes: Children are

learning from each other: In a positive learning climate, the children were able to express emotional themes that they may not have communicated before. Children are learning through an interaction with the educational material: The children discussed stories and pictures in a fellow interplay: when one child expressed something, another child would recognise it and continue the story. Children are learning from their interaction with health care personnel and vice versa: Adjusting the vocabulary according to the children's experiences, they were met on their level of understanding. Children can express and discuss their understanding of asthma. When the children expressed their thoughts, the HCP would direct their attention to what they had expressed.

Conclusions: The unique aspect about this program is that it emanate from children's perspectives. The children were actively involved and learnt from each other's shared knowledge and experiences, which develop their health literacy and increase their knowledge and competence to meet demands in everyday life.

Relevance to clinical practice. Future educational approaches should use children's perspectives in a manner in which their questions, thoughts and daily challenges are emphasised.

P12 - Investigating children's health literacy related to physical activity - Results from a mixed-methods study of health education with pedometers integrated in mathematic lessons

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Introduction: Most research on pedometers and children has focused on measuring steps per day, assessing the relation between steps, physical activity and health, and how pedometers can be used in interventions to promote physical activity. However, little attention has been given to pedometers as an educational tool for promoting children's own learning about their movement patterns in everyday life.

Therefore, "The Imove Approach" was developed as a school-based health educational approach with pedometers to be integrated in mathematic lessons in Danish schools. The objective of Imove is to promote children's leaning and reflection about movement and physical activity based on their investigation of their movement with pedometers during a school week and subsequently processing the step data and reflecting on the patterns during mathematics lessons in the following week. The aim

and the outcome of this health educational learning process physical activity related health literacy. The objective of this paper is to explore children's physical activity-related health literacy as their self-reported conceptions of physical activity in relation to health and their attitudes to movement and being active.

Methods: During winter 2013-2014, the Imove Approach was implemented in four Danish primary schools in grade 5th, 6th and 7th . A total of 12 classes with approximately 300 children and 10 mathematic teachers participated. For research purposes, we asked the children to answer a 10 item questionnaire one week before and one week after the Imove period. The questionnaire contained open questions where the answer was a narrative, as well as closed, multiple choice questions. In addition, we observed and audio-recorded the mathematic lessons, and we conducted focus group interviews with all the children in one class from each grade. Finally, we conducted short individual interviews with the teachers and a workshop with all the involved teachers when all the twelve classes had completed the Imove period.

The questionnaire covers three components of physical activity-related health literacy: children's theoretical knowledge, practical experience and attitudes/preferences. Mixed methods analyses will be conducted.

Results: This study will produce knowledge about children's physical activity-related health literacy to be used for measuring effect in larger health education intervention in the future. Further, it will assess the feasibility of using pedometers for promoting children's reflection, and it will point at potentials and difficulties when integrating health education in mathematics lessons.

P13 - Health literacy and the salutogenic paradigm as a pathway to tackle the health gradient: the case of smoking cessation

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Introduction: In Portugal the prevalence of smokers over fifteen years of age within the population stood at 20.9% (30.9% for men and 11.8% for women) by 2005. The national goal was to decrease this to half by 2010 (National Health Plan (NHP) of Portugal (2004-2010). While the strategy of helping people to quit smoking has been emphasised at National Health Service (NHS) level, the uptake of cessation assistance has exceeded the capacity of the service. A problem of health

provision emerged with waiting lists for smoking cessation programmes. The average waiting period for health units with waiting lists was 132 days. Have waiting lists, determines restriction to programmes (OR=3.98; p=0.02). This induced the search of new theoretical and practical venues to offer alternative options to stop smoking, besides the pathogenic paradigm. Salutogenesis is here proposed as a new paradigm to contribute to increase health literacy (HL) and empower smokers to consider smoking cessation. eHealth and the use of information technologies in smoking cessation are researched has operational salutogenic strategies focusing the sense of coherence.

Methods & Results: An analysis of public opinion and receptivity to Internet use in smoking cessation to increase health literacy, as a secondary prevention intervention examining screening for the presence of tobacco-related by-products (such as Carbon Monoxide - CO) in a sample group of 10,824 (58.3% were males) was implemented. Smokers and non-smokers were canvassed about the use of the Internet to increase HL for smoking cessation. Results show that there were 37.0% smokers, smoking daily a mean of 15 cigarettes. These participants have a mean of 18.4 ppm of carbon monoxide (SD 12.9 ppm) and 43% of non-smokers had carbon monoxide levels ≥ 4 ppm. Higher carbon monoxide levels are associated to motivation to make behaviour changes (IBC) ($\chi^2=0.120$; p<0.01). A significant number of smokers (59.4%) would like to stop and 60% want to have help. More women than men accept assistance for smoking cessation ($\chi^2=4.48$; p=0.03). Even if 24.4% do not have Internet access, 57% say a web platform could help a lot ($\chi^2=18.66$; p=0.01). For those having Internet access the web opinions are more favourable to the contribution of the web to help quit ($\chi^2=377.07$; p<0.001). A high percentage of smokers (67%) tried previously to quit and reveal high motivation for attempting smoking cessation ($\chi^2=0.326$; p<0.01). Among the participants, 43.5% were motivated for not using tobacco in six months ($\chi^2=0.790$; p<0.01) and men were more motivated than women to go through with a quitting help programme ($\chi^2=10.60$; p=0.01). **Conclusions:** Implementing such initiatives focusing on health literacy about second hand smoking (SHS) and carbon monoxide is feasible and have good receptivity by the public. Internet support with emphasis on HL about the benefits and strategies to stop smoking is recommended has a strategy to help, particularly when waiting lists make it difficult for smokers to get appropriate support in due time.

P15 - The contribution of health literacy to educational inequalities in cardiovascular disease risk

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Introduction: Educational inequalities in cardiovascular disease (CVD) risk are well established, but underlying mechanisms are relatively unexplored. The aim of this study was to assess to what extent educational inequalities in CVD risk can be explained by differences in health literacy (HL).

Methods: Data were collected in a multi-ethnic cohort study (HELIUS) by questionnaire and a physical examination. CVD risk factors included: age; total cholesterol; HDL cholesterol; systolic blood pressure; diabetes; smoking. General CVD risk was estimated from a multivariable risk factor algorithm (Framingham). Objective HL was measured by the Rapid Estimate of Adult Literacy in Medicine (REALM), subjective HL was assessed by the Set of Brief Screening Questions (SBSQ). We performed stepwise linear regression analyses with general CVD risk as independent and educational level, HL and ethnic background as dependent variables.

Results: We used data from 6442 participants (mean age 46 years, 57% female, 26% Dutch ethnic background, 57% (medium-) high educational level). 81% had an adequate REALM score, 92% had adequate subjective HL. Educational level was significantly associated with objective and subjective HL. Lower educational level and lower HL were significantly associated with a higher CVD risk. In the full regression model, both educational level and HL were significant predictors of CVD risk. **Conclusions:** HL, as measured with REALM or SBSQ, is a contributing factor, but cannot explain educational inequalities in CVD. Further research on the role of HL in socioeconomic inequalities in CVD risk requires context-based objective HL measures.

P16 - Assessing Adherence and Health Literacy in a HIV Cohort in Guinea Bissau

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Background: Poor treatment adherence is the main barrier to the effectiveness of antiretroviral therapy (ART) globally. We have previously found in a qualitative study that HIV-infected in Bissau have insufficient knowledge about HIV and ART. We found that facilitators were experienced treatment benefits and complementing social networks. The barriers were treatment-related costs and competing livelihood needs; poor clinic infrastructure; perceived stigma; and traditional practices.

Method: From October 2012 to April 2013, we tested a questionnaire designed for assessment of adherence and description of barriers and facilitators to adherence based on our previous findings. HIV-infected in the Bissau HIV-cohort at the HIV clinic, Hospital National Simao Mendes in Bissau, Guinea Bissau were enrolled in the study.

Results: A total of 494 HIV-infected were included in the study. Twenty-five percent were men, 41 % were illiterate. 25% did not take the medicine during the last 4 days and 23% skipped their medicine during weekends. The main barriers were lack of knowledge about ART/ HIV and disclosure-related difficulties. The most frequent reasons for not taking medicine were side-effects, simply forgetting, too ill to attend the clinic and lack of food.

Conclusion: Our findings indicate that greater efforts are needed to educate HIV-infected sufficiently about HIV, ART and lifelong treatment, and there seem to be an urgent need for improving general HIV-knowledge (e.g. health literacy) and to strengthen interventions to improve this in clinical practice.

P18 - Testing health literacy in patients with chronic obstructive pulmonary disease (COPD) using a Danish version of the Test of Functional Health Literacy in Adults (TOFHLA)

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Introduction: The lack of consensus about the definition of health literacy causes disagreement about how it should be measured. To date one of the instruments most widely used to measure health literacy is the Test of Functional Health Literacy in Adults (TOFHLA). Functional Health literacy, as measured in the TOFHLA, is defined as basic reading, writing, and numeracy skills applied in a healthcare setting. The TOFHLA is only available in an American and Spanish version, and there is no standardised way to measure health literacy in most European countries. As a result the research into functional health literacy among the Danish population is also in an infant stage.

Elderly people with a chronic disease like for instance chronic obstructive pulmonary disease (COPD) are at risk of having a low level of health literacy and not receiving the health care they need. COPD patients undergo complex, life-long treatment courses, have multiple encounters with the healthcare system and most are faced with a situation where their quality of life deteriorates slowly and steadily due to growing physical and cognitive impairment obstructing their ability to perform everyday activities. The active involvement of these patients in their own care is a key priority that hinges on effective communication; yet, only few studies have examined COPD patients' ability to access, understand and evaluate health-related information, i.e. their health literacy.

The objective of the study was to assess the level of functional health literacy among COPD patients using a Danish version of the American TOFHLA, and relate this to gender, age, civil status and education. The American TOFHLA has been translated, adapted and validated for use in a Danish setting and culture. The total scores for the Danish TOFHLA test are divided into three levels: inadequate (lowest), marginal and adequate (highest).

Methods: 42 COPD patients completed the Danish TOFHLA and participated in a face-to-face interview concerning their basic demographics. Descriptive statistics were used to explore the general health literacy score by demographic characteristics, level of education, and response time to the Danish TOFHLA. Multiple linear regression analyses were conducted to explore the association between functional health literacy and gender, age, civil status and education.

Results: Distribution of health literacy level among the COPD patients: 23 had an adequate level, 8 had a marginal level, and 11 had an inadequate level. Based on unadjusted mean, a slightly higher health literacy score was observed among the male part of the COPD patients and also among those living with

a partner. The mean response time to the Danish TOFHLA became lower with a higher level of health literacy; those with an adequate level had the lowest response time.

The level of education was found to be slightly correlated with health literacy score among those with an inadequate level of health literacy (when adjusted for gender and age). Age was also found to be correlated with health literacy score.

Conclusions: More than 50% of the COPD patients had an adequate level of health literacy, which is a somewhat surprising result as elderly people with a chronic disease like COPD are at high risk of having low health literacy. The correlations between health literacy score and education and age were not strong, but nevertheless in accordance with previous findings in the literature.

P19 - Warfarin management by non-medical healthcare professionals: a question of trust?

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Objective: To examine patient's views regarding warfarin management by non-medical healthcare professionals and determine whether a relationship exists between health literacy status and patient perceptions.

Method: A previously validated questionnaire was distributed to patients attending the anticoagulation clinic at Cork University Hospital (CUH). Socio-demographic information was recorded and the Rapid Estimate of Adult Literacy in Medicine (REALM) Health Literacy tool was administered. Data were analysed using SPSS v 21.

Results: A total of 183 patients completed the survey (39.3% female, average age 62, standard deviation 11.75), with a response rate of 68.28%. The prevalence of limited health literacy was 19.7% and negatively correlated with age ($r=-0.429$, $p<0.0005$), age of leaving education ($r=-0.72$, $p<0.0005$) and thus education level obtained. Whilst 100% of patients agreed or strongly agreed that pharmacists or nurses were qualified enough to manage their anticoagulation, nonetheless 48.2% expressed a preference for consulting a physician, if this option was available. There was a small positive correlation between adequate health literacy and patient perceptions of non-medical anticoagulation management regarding trust in the pharmacist or nurse ($r=0.159$, $p<0.05$), and in their ability to answer questions correctly ($r=0.175$, $p<0.05$).

Conclusions: Our study indicates that the majority of patients are open to non-medical professionals

managing their warfarin doses. The role of nurses and pharmacists is often seen as supplementary to physicians, and most patients prefer medical management of treatment, when given the choice. The correlation between health literacy status and patient opinions was, with two exceptions, not statistically significant. Due to the small sample size further studies are required to generalise the results to the Irish population. The high prevalence of limited health literacy amongst Irish adults needs to be addressed with national strategies to ease comprehension of health related texts.

Keywords: health literacy, anticoagulation, patient perceptions, warfarin, REALM.

P21 - Measuring peoples' understanding of the effects of treatments: a review of outcome measures

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Background: Being able to critically appraise claims about treatment effects is crucial for informed decision making. Studies mapping or evaluating people's understanding of the effects of treatments have not been measured consistently, and are characterised by differences in terminology and parallel discourses. Such inconsistencies are to some extent attributable to different research areas and disciplines being responsible for studies that have often focused on a specific concept, such as the understanding of numeracy.

Aim: The aim of this project is to provide a systematic overview of outcomes and outcome measurements used in studies evaluating or mapping peoples' understanding of the effects of treatments, which will inform future research in this area.

Methods: We conducted a systematic search in Cochrane Library (CDSR, DARE, HTA, CENTRAL, Method studies) MEDLINE In-Process & Other Non-Indexed Citations, and MEDLINE 1946 to Present (Ovid), ERIC 1966 to present (ProQuest). We reviewed the available evidence to identify outcomes and outcome measures used in studies evaluating peoples' understanding of the effects of treatments. In order to identify unpublished studies, we also contacted key researchers working in related research areas such as health literacy and training of patients and consumers in evidence-based medicine, including members of the Cochrane Consumer group and the Nordic Health Literacy

Network. We included all relevant systematic reviews, trials and observational studies evaluating or mapping peoples understanding of the effects of treatments. The lead author in addition to one more researcher reviewed all references independently, extracted all outcomes in the included studies and entered these in a matrix to present an overview of the outcomes, to explore overlaps, inconsistencies and lack of evidence.

Results: We identified 2961 references, of which nearly 70 were systematic reviews of studies mapping or evaluating specific concepts. All outcome measures evaluating the identified outcomes was presented in a table, and described according to the following criteria: which domains are captured, for which target population is the outcome measure intended, and are the outcome measures dichotomous or continuous, and subjective or objective. The identified studies included outcomes and outcome measures belong to several overlapping research fields including; health literacy, decision aids, education in evidence based practice, numeracy, science education and informed consent.

Conclusion: This review provides a systematic overview of outcomes and outcome measurements used in studies evaluating or mapping peoples' understanding of the effects of treatments, which will inform future research in this area.

P22 - Satisfaction with cancer-related information: Associations with information-seeking style and decision self-efficacy

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Background: During the course of cancer, patients are repeatedly challenged with complex information and may be involved in difficult decisions concerning their treatment and care. Information is often regarded as unambiguously beneficial. However, it may be that not all patients want all available information about their disease and treatment.

Aim: To explore individual differences in cancer patients' information needs, information-seeking behaviors, satisfaction and perceived helpfulness of the information received.

Methods: Patients with various cancers attending an oncology outpatient clinic completed questionnaires including items measuring their information-seeking behaviors, the EORTC information questionnaire, the Hospital Anxiety and Depression Scale, and the Decision Self-Efficacy Scale, measuring confidence in one's ability to participate in decision-making.

Results: Of the 494 eligible patients, 272 (56%) (Mean age: 61 yrs, 40% males) completed the questionnaires. Patients exhibiting an active information-seeking style (60%) reported higher levels of anxiety (M=6.7; SE=4.1) compared to patients with a passive style (M=5.2; SE=4.0) ($p < 0.05$). Multiple linear regression revealed that patients who were less satisfied with the amount of information received, tended to be in curative treatment ($\beta = 0.14$; $p = 0.02$; 95% CI: 1.12-13.17), to have an active information-seeking style ($\beta = -0.14$; $p = 0.03$; 95% CI: -13.44 to -0.57), and to be lower in decision self-efficacy ($\beta = 0.20$; $p < 0.01$; 95% CI: 0.21-1.07). The only predictor of perceived helpfulness of the information received was decision self-efficacy ($\beta = 0.19$; $p = 0.01$; 95% CI: 0.13-0.94).

Conclusion: Patients with an active information-seeking style were more anxious than patients with a passive style and less satisfied with the amount of information received throughout their cancer course. Patients who were less efficacious regarding decision-making were also less satisfied with the amount of information received and perceived the information as less helpful. Implications: Attempts to improve information in cancer care should take the role of information-seeking style and decision self-efficacy into consideration.

P23 - Information needs and health literacy of first-time breast cancer patients - intentions of the PIAT study and initial results

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Background: Breast cancer is the most common cancer in women throughout Germany. The PIAT study sets out to ascertain the information needs and health literacy aspects of first-time breast cancer patients.

Method: The data were taken from the preliminary qualitative study and the quantitative main study. On the basis of focus group discussions and standardized postal questionnaires the information

needs and health literacy of patients are collected during the postoperative hospitalization (T1), 10 (T2) and 40 (T3) weeks after diagnosis. In addition, breast cancer centres were asked to fill out structure and process characteristics of the centres. Results: The study results shows that first-time breast cancer patients are overstrained, at least in part, by the information load directly after surgery, and that some information needs are not being fulfilled. The information needs were linked to the age and health literacy of the study participants. Employees from breast cancer centres have reported wide ranging use of information materials, for the most part not subject to the health literacy of patients.

Summary: The results indicate that the use of individualized information at different treatment times seems desirable. The targeted use of information steps could contribute to increase the health literacy of breast cancer patients. The ongoing main study will provide more indications thanks to its follow up study design.

P24 - The role of health literacy in the decision making process regarding colorectal cancer screening: a systematic review

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Introduction. Colorectal cancer (CRC) is an important cause of cancer-related deaths throughout the world. Uptake of CRC screening is lower among those with lower SES. Poor health literacy is common among those with lower SES and possibly influences the decision making process with respect to CRC screening participation. The aim of this systematic review is to examine whether decision making regarding participation in CRC screening differs according to people's health literacy skills.

Methods. Four databases were searched for peer-reviewed English language articles published between 1950 and May 2013 that measured health literacy and (aspects of) decision making regarding participation in CRC screening. Articles meeting the inclusion criteria were independently reviewed by two investigators, who assessed the quality of the studies by the use of a standardized form.

Results. Results indicate in the first place that those with lower health literacy skills have less knowledge concerning CRC and CRC screening than people with higher health literacy skills. Subsequently, studies concerning the association between health literacy and CRC screening attitude show varying results; some find that those with lower health literacy are more likely to have negative attitudes and perceive more barriers regarding CRC screening than participants with adequate health literacy, where other studies report no effect of health literacy. Furthermore, those with lower health literacy seem to have more difficulty with understanding the concept of informed choice in the context of screening.

Conclusions. Our findings suggest that certain aspects of the decision making process regarding participation in CRC screening, differ according to health literacy level. However, there is limited knowledge available to draw univocal conclusions.

P25 - Mental health literacy and social support for older people in Wales living with depression

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Background: Mental health literacy involves an understanding of mental disorders, knowledge and beliefs about risk factors, the recognition of symptoms, knowledge of sources of mental health information, support and self-help interventions. Studies have shown that older adults have poorer mental health literacy and also less likely to recognise symptoms of mental health disorders such as anxiety depression than younger adults. This study aims to explore experiences of mental health literacy in the context of older people in Wales living with depression and explain how they use their social network for support with understanding and managing depression.

Method: A longitudinal qualitative interview study including 28 participants (aged 65+) living with depression recruited from a large population study of the health and well-being of older people in North and South Wales (CFAS Wales II). The transcripts were analyzed using the 'Framework' approach.

Results: Participants had a limited understanding of depression, how to manage it, sources of support and treatment options. Most participants did not engage with information about depression or seek help from services other than their GP. Most participants were taking prescribed antidepressants and only a few had been offered psychological therapies. Help seeking from family

and friends was limited because of 'non-disclosure', a reluctance to 'burden' others or to avoid 'stigma'. Differences are identified in experiences of mental health literacy around depression based on different types of social networks, rural and urban location, age and gender.

Conclusion: Identifying differences in mental health literacy in older people can help in designing and targeting appropriate community level interventions aimed at providing information, improving symptom recognition, promoting help-seeking behaviours and supporting older people in making informed decisions about treating and managing depression.

P26 - The distribution of health literacy in the social networks of older people with a long-term condition

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Introduction: Older people tend to have poorer health literacy and consequently they experience more adverse health outcomes in terms of physical and mental health functioning. Health literacy is part-cognitive skill and part-social skill and can be distributed amongst family, friendship and other social networks. This study aims to explain the 'distributed' nature of health literacy and identify how older people living with a long term condition draw on their social network for support with health literacy related tasks.

Method: A longitudinal qualitative interview study including 67 participants (aged 65+) with a long-term health condition (diabetes or depression) recruited from a large population study of the health and well-being of older people in Wales, UK (CFAS Wales II). The transcripts were analysed using the 'Framework' approach.

Results: The evidence for health literacy was mixed in the diabetes group of participants. Some had a good knowledge of diabetes and engaged with information and health care services and talked about active self-management. Some had little knowledge and understanding of diabetes, did not engage with information or follow self-management advice. Participants with depression had a poor understanding and most were not motivated to engage with information. Participants who had a poor understanding and were not motivated to learn about their condition often relied on primary care services as their main source of information and support. The distribution of health literacy within some social networks was limited with most participants with depression and some with

diabetes due to a reluctance of seeking social support from family and friends. Differences are identified in experiences of seeking social support for health literacy based on physical and mental illness, different types of social networks, rural and urban location, age and gender.

Conclusion: Support from friends and family can mediate the health literacy demands placed on older people in managing a long term condition. However, some older people are not motivated to become health literate and there are barriers to seeking social support. Identifying age-related motivational barriers to health literacy and accessing social support with health literacy in different social network types may help in designing and targeting appropriate community level health literacy interventions.

P28 - Healthy Ageing in Ireland: The Role of Health Literacy

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Introduction: This study investigates the relationship between health literacy, health status and behaviour among older people (aged 50+) in Ireland. In Ireland the proportion of the population aged 65 and older is set to increase by 44 per cent in the next ten years and double over the next 30 years (Normand et al., 2011). Results from the Irish Longitudinal Study of Ageing (2011) have illustrated high rates of current smoking (one in five), overweight and obesity (three-quarters) and low levels of physical activity among those aged 50+. Considerable disparities were also observed in both health outcomes and behaviour associated with education and income. In 2013 the Irish Government adopted a 'social determinants of health' framework to reduce disparities related to education, social inclusion, and health and wellbeing status at an individual and community level. For the first time in Irish health policy, health literacy was referred to in two action points, both in the context of empowering people and communities to reduced health disparities. In Irish policies relating to older people there continues to be a strong emphasis on older people remaining in their homes with support from family carers and local voluntary and community organisations (Cross, 2009). Intrinsic to this emphasis on ageing in place is the ability for individuals to self-manage and adapt to age related decreases in health and function. Continued participation in social and community life is also promoted. Health literacy can

be considered as central to realising the policy objectives of healthy ageing in place while reducing health disparities in old age.

Methods: This study adopts the 'social determinants of health' as a theoretical framework for analysing the relationship between health literacy, health behaviour and health outcomes of people aged 50 + and older in Ireland. The analytical sample (n= 251) is drawn from those aged 50 and older who participated in the 2011 European Health Literacy Survey in Ireland (n= 1005). Given the small sample size, non-parametric bivariate analysis will be performed to illustrate the extent and nature of the relationship between key demographic and socio-economic characteristics of older people in Ireland and health literacy in differing domains (cure and care, disease prevention and health promotion). Robust Ordinary Least Squares regression will be utilised to identify the extent to which health literacy performance in the health promotion domain (managing resources for health and wellbeing) predicts 1) health status and 2) health behaviours (smoking, excess alcohol consumption, overweight and obesity and physical exercise) among older Irish people. Standard demographic and socio-economics factors (age, gender, educational attainment, income and ethnicity) will be controlled for, which are known correlates of health literacy at the individual level.

Results and Conclusions: The objective of the study is to provide an empirical overview of the relationship between 1) health literacy and health status and 2) between health literacy and health behaviour among older people in Ireland. This information will provide an evidence base for the promotion of health literacy as a keystone in realising policy objectives in relation to older people ageing in place and reducing health disparities by empowering people and communities.

P29 - Healthy ageing in the city: Promotion of health literacy in old age in the context of biographies and the environment

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This paper presents preliminary findings from a German study on health literacy of older adults in three districts in the city of Frankfurt. The study builds upon a project on the meaning of ageing in place in the neighborhood for healthy ageing with data from N= 454 community dwelling older adults

(70-89 years old). The data revealed different levels of health literacy in different districts as well as an expected statistically significant relationship between health literacy and autonomy in daily life of older people with declining physical competence. The recent study aims to maintain and promote health literacy as people age in place. The aim of the study is threefold:

(1) Using a person-environment interaction perspective to better understand how and why older people maintain and practice health promotion within the context of ageing in place.

(2) Exploring how the experience of one's own health and health literacy develops over the life-span as well as how these perspectives are integrated into one's biographical narratives.

(3) Identifying implications to be considered with respect to better health literacy programs and services. Furthermore, results shall serve to specify the concept of health literacy for older adults in general.

The study design incorporates a mixed-methods approach utilizing both qualitative and quantitative data collection techniques. Biographical qualitative interviews were conducted with a sample of 12 people stratified for age (range: 70-89 years old), gender, health, socio-economic status and place of residence. In the quantitative section of the study, 100 persons (matched pairs of 50 participants from health education programs versus 50 non-participants) were asked to fill out a questionnaire focusing on health literacy (HLS-EU-Q-S and NVS) and items addressing subjective perception (e.g. satisfaction with life), social participation and health behaviour. Preliminary findings show connections of health attitudes among older adults with former biographical experiences and health socialization in the family. Furthermore, findings in context with the use of health services by older adults shall be presented. These results help to highlight the pivotal role health literacy plays in provision of age- and setting-specific services that foster healthy ageing.

P30 - Effectiveness of interventions to improve adherence in older adults with low health literacy: a systematic meta- review

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Objectives: Older adults frequently suffer from low health literacy. Increasing adherence rates may be a productive strategy to improve the health outcomes of older adults, since difficulty in adhering to advice from healthcare professionals may be one of the potential pathways that exert a detrimental effect on those with low health literacy. Our first objective was to systematically review the available systematic reviews on the effectiveness of adherence interventions in older adults with low health literacy. Our second objective was to evaluate the association between health literacy and adherence in older adults. Also, to get a more complete picture of the evidence, we explored the association between educational level and adherence in older adults.

Methods: We conducted a systematic search of systematic reviews and meta-analyses. The search was conducted in eight electronic databases: MEDLINE, EMBASE, Education Resources Information Center (ERIC), PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), DARE, Web of Knowledge, and The Cochrane Library. All steps in the selection procedure and data-extraction were conducted by two independent reviewers.

Results: After screening 1330 citations, a total of 12 reviews were included. A total of 7 reviews on the effectiveness of adherence interventions in older adults with low health literacy were found, 6 of which reported improvements due to adherence interventions. Interventions on adherence that are effective for older adults with high health literacy are also effective for older adults with low health literacy. Educating patients and providing support to change or maintain adherence behaviours (e.g. telephone counselling) are potentially productive intervention strategies to improve adherence rates. Another 7 reviews showed inconsistent results regarding the association between health literacy and adherence. Similarly, 6 reviews showed inconsistent results regarding the association between educational level and adherence.

Conclusions: Adherence interventions could be effective for older adults with low health literacy. Insufficient evidence was available to provide solid conclusions on which type of intervention would be most suitable for this population, although our results indicate that interventions that aim to educate patients and give additional support to change or maintain adherence behaviour are promising. No consistent associations between health literacy and adherence and between educational level and adherence in older adults were found. Adherence interventions could be used to improve the health outcomes of older adults with

low health literacy. However, as the evidence is limited, more research is required.

P32 - Exploring European immigrant health literacy: a critical review

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Background: Health literacy (HL) is an increasingly important topic in public health and health care systems, and refers to one's ability to gain access to, understand and use information in ways which promote and maintain good health and meet the demands of health systems. Immigrant populations are particularly vulnerable to poor or inadequate health literacy and health disparities. Current efforts responding to immigrant health literacy are lacking. Little research has been done in Europe to assess best practices related to health literacy in under-represented immigrant populations.

Objectives: The main objective of this literature review is to evaluate the effects of low health literacy in immigrant populations. Additional objectives will be explored including: improving immigrant health literacy through best practices in Europe, investigating the relationship between poor health literacy and health care utilization and cost and examining the current state of health literacy research in Europe.

Methods: A literature search was performed using PubMed. The study inclusion criteria is as follows: literature must be written in English, published from Canada, Europe or the United States, and generalizable to immigrant populations.

Results: The literature search resulted in 698 articles eligible for screening, of those twenty were identified as potential sources and finally fourteen were included. Immigrants often have significant health literacy difficulties that are further enhanced by communication barriers when accessing care and making sense of relevant health information. Immigrants are often unaware or misinformed about available health care services, health promotion activities, early detection guidelines, correct use of medications and treatment strategies, which can cause harmful effects. This vulnerable population is faced with additional challenges including language and communication barriers. Immigrants are more likely to experience medication and treatment errors when accessing care and the combination of poorer outcomes, increased health care utilization and medical errors can be very burdensome to the health care system impacting health care costs on the whole society

Limitations: Potentially missed articles published in other languages. The term 'health literacy' is not

as commonly used in Europe thereby missing publications that failed to identify themselves as health literacy articles. The concept and definition of health literacy vary throughout the world. Lastly, there is very limited research in the field of health literacy in Europe which is further reduced when researching the health literacy of under-represented immigrant populations.

Implications: As Europe becomes increasingly diverse the importance of focusing on the health literacy of immigrants has become more evident. Little research has been done to assess best practices related to immigrant health literacy, interventions for health promotion strategies or evaluation of their effectiveness in immigrant populations. Health care professionals, policy-makers and researchers must join forces to concentrate on the health literacy of immigrants in Europe. Evidence-based practices must be used to standardize the quality of care provided to immigrant populations. Increasing the health literacy of immigrants will allow for greater autonomy with health care decisions, personal empowerment, improved quality of life, and decreased health care costs.

P35 - Is health literacy addressed in the medical education of General Practitioners?

Oana R. Groene

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Introduction: A large proportion of patients have difficulty navigating the health system and struggle understanding the complicated jargon used by health professionals both in oral and written communication. Health literacy studies have largely focused on patients' individual skills but have placed little emphasis on the role of health professionals in facilitating access to information and ultimately to healthcare. General Practitioners (GPs) play an important role as gatekeepers of health care: 90% of medical encounters are with GPs and more than 50% of medical students choose general practice when leaving medical schools. This research, part of a larger project to assess GP registrars' self rated health literacy competencies, explores current approaches to health literacy in the undergraduate and postgraduate medical education curriculum of GPs in London.

Methods: Fourteen semi structured interviews were conducted with stakeholders in general practice medical education. Data collection took

place between May and September 2012. Stakeholders were identified using purposeful and snowball sampling techniques based on their involvement and experience in elaborating and implementing key official curriculum documents. They included representatives of professional associations setting standards for undergraduate and GP postgraduate medical education curriculum, heads of curricula implementation in medical schools, heads of communication skills modules, and GP program directors. The framework approach was used to analyze their understanding and awareness of health literacy and how it is addressed in practice.

Results: The ability to access, process and filter information" was identified as one of the main determinants of health along with socio-economic, environmental and cultural factors. Stakeholders were also aware of the health literacy demands of a complex healthcare system that is difficult to navigate for people with low literacy skills. Yet, stakeholders in medical education were not familiar with the concept of "health literacy" as such. They underlined the importance of the use of clear communication techniques and stressed the need to enhance medical students' positive attitudes towards patient-centeredness. Most of stakeholders believed that literacy and health literacy might only be indirectly addressed in the curriculum under the umbrella of "clinical communication skills", "holistic care", and "patient-centred" care. Moreover, they were unaware of any tools to assess patients' health literacy or health literacy demands.

Conclusions: As GP educators are not familiar with the concept of health literacy, it may not get addressed in the curriculum. Whereas future GPs are trained in the use of certain clear communication techniques, it is likely that they are unaware of the impact of health literacy on health outcomes. Conceptualizing some of the clear communication techniques and patient-centred approaches under the concept of health literacy could increase both GPs' and GP educators' awareness and understanding of health literacy related barriers to care and potentially improve their skills in addressing them in practice.

P36 - The Vaccine Literacy of Health Care Workers in Tyrol, Austria and Alberta, Canada: A Comparison and Exchange of Knowledge

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Background: Enhancing the public's understanding of health information is crucial in order to improve

vaccination coverage and disease prevention. Health care workers (HCWs) can function as role models by providing clear and accurate information about vaccines to their patients and communities. Research across the globe has revealed significant gaps in the vaccine-related knowledge of HCWs. Vaccine literacy extends beyond mere knowledge about vaccines; it also concerns the development of a system that minimizes the barriers associated with communicating about and accessing vaccination. In Alberta, Canada, concerted efforts have been made in the past decade to enhance the immunization competencies and vaccination uptake of HCWs. Since 2012 the Austrian Ministry of Health's strategies highlight the need to improve the availability of information on the benefits and risks associated with vaccines and to raise the awareness about the importance of vaccines for HCWs. These strategies are in line with national health goals to provide health-promoting working conditions and enhance health literacy in the population. However, due to insufficient immunization programs coupled with a significant number of vaccine critics, improving vaccination coverage in Austria remains a challenge. This study compares interventions in the regions of Alberta and Tyrol designed to improve the vaccine-related knowledge of HCWs. Additionally, the researchers collaborated with the Public Health Agency of Tyrol to create a survey to evaluate the knowledge, attitudes and practices of HCWs towards vaccines.

Methods: A document analysis of policies as well as health information brochures related to vaccination for HCWs was performed using a pre-defined set of criteria. Expert interviews were conducted in order to obtain information about how the documents have been put into practice and to reveal innovative strategies for increasing the vaccine literacy and immunization uptake among HCWs. This information was also used to design a survey for each region.

Results: There is a broader range of well-established policies and customized educational documents in Alberta than in Tyrol. The Alberta government has integrated a national multidisciplinary framework for training HCWs about vaccines along with a social marketing campaign that utilizes twitter, interactive blogs as well as intranet forums to connect HCWs and the general public with vaccine experts and easy to understand information. Access to vaccines is free for HCWs and has been improved by peer to peer clinics and the introduction of pharmacists as vaccinators. In Tyrol, recent national policies related to increasing the awareness of HCWs about vaccines have yet to be put into practice. A shortage of educational brochures specifically targeted to HCWs was revealed. A conflict of interest and lack of trust has arisen as most brochures are sponsored

by vaccine manufacturers. Accessing vaccines is complicated and costly for HCWs in Tyrol.

Conclusion: This study provided a basis for knowledge exchange between decision makers in Tyrol, Austria and Alberta, Canada. Findings were used to inform the provincial and federal governments in Austria about improving vaccine-related communication for HCWs. The researchers continue to collaborate with the governments in both regions to integrate a survey as a tool for assessment of HCWs' beliefs and behaviors regarding vaccination as well as for evaluating current interventions.

P37 - Comprehensibility of health related documents for older adults with different levels of health literacy: a systematic review

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Introduction: The main objective of this study is to systematically review the evidence on the effectiveness of interventions aiming to improve the comprehensibility of health related documents in older adults, by manipulating features and formats of these documents.

Methods: A systematic review was conducted. Seven databases (MEDLINE (1996 -), PsycINFO (1887 -), CINAHL, 1982 -), Web of Knowledge, The Cochrane Library, ERIC, 1966 -) and the Comprehensible Language and Effective Communication (CLEC) database) were searched (time period: 01-01-2005 until 03-25-2013) and references in relevant reviews were checked. Search terms consisted of terms related to health literacy, to health related documents and to comprehensibility. The selection procedure was conducted by two independent reviewers. Data extraction and quality assessment of 60 selected studies were conducted by one reviewer and checked for accuracy by a second reviewer.

Results: 37 studies of the 60 selected studies had a study population of older adults or made an explicit comparison between a younger and older study group. The remaining 23 studies included age as a covariate. In this article, we focus on the 37 studies that report specific results for (the subgroup of) older adults and thereby provide the most direct evidence for our objective. Inconsistent evidence was found about the importance of formats and

design features to enhance comprehensibility of health related documents for older readers. Only for health narratives and multiple-feature revisions, the included studies (n=2 and n=4, respectively) provide moderate evidence that they may be effective in enhancing comprehensibility in older adults with limited levels of health literacy. Health narratives refer to health related documents that include narratives or apply narrative formats in their messages. Multiple-feature revisions are based on both textual design principles and linguistic features (e.g. aiming to simplify linguistic content). Studies on all other interventions in our review provided inconsistent evidence of effectiveness. While all of these interventions may contain elements that contribute to enhanced comprehensibility in older adults, the large heterogeneity of the studies, in terms of subject matter, research design, outcome measures and study participants, prevents consistent conclusions. Conclusions: Using health narratives and/ or multiple-feature revisions of health related documents seems a promising strategy to enhance comprehensibility of health related documents for older adults. Overall, there is limited and inconsistent evidence about the effectiveness of interventions aiming to improve the comprehensibility of health related documents in older adults. This review shows that is essential to gather more data on features and formats of health related documents to increase their comprehensibility in the target population of older adults.

P40 - Developement of the Dutch Talking Touch Screen Questionnaire

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Introduction/context: In the Netherlands there is a strong call for transparency in health care. Therefore physical therapists are encouraged to monitor their care processes by asking their clients to fill out health related questionnaires before and after treatment. A considerable group of clients are unable to fill out such a questionnaire

independently. The main underlying problem of Dutch native as well as immigrant clients seems to be their level of (health) literacy. American and Chinese research shows that the use of a Talking Touch Screen (TTS) increases the ability of low (health) literate clients to fill out questionnaires, even if they have limited or no computer skills. For this reason a Dutch/Turkish TTS Questionnaire (DTTSQ) was developed.

Description of policy or practice innovation: Different from the development process of the American and Chinese TTS, a User Centred Design method was used. This involved an iterative development process in which (future) users and researchers collaborated as equals. Tools and techniques for co-creation/co-design have enabled users to take on the role of 'expert of their experiences' and become part of the design team. In co-designing, the researchers took on the role of facilitators. User needs were discovered through focus groups. A prototype was developed through generative prototyping and scenario building.

Evaluation/impact: Usability of the DTTSQ (n=102) was compared to the usability of a questionnaire on paper with similar content (n=121). Throughout all literacy levels clients were significantly better able to independently fill out the DTTSQ. Additional qualitative research shows that clients are satisfied with the usability of the DTTSQ and physical therapists are inclined to incorporate this innovation into their daily practice.

Discussion/implications: The prototype of the DTTSQ enhances the ability of Dutch and Turkish physical therapy clients across all (health) literacy levels to independently fill out a health related questionnaire.

P41 - Usability and validity of the Dutch Talking Touch Screen Questionnaire; a qualitative study

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Introduction: The aim of the investigation was to identify potential problems with usability and validity of the Dutch Talking Touch Screen Questionnaire (DTTSQ), which is being developed in order to enable low (health) literate clients to complete it independently. It comprises pain

intensity, pain location and limitations in daily activities. Neither reading or writing skills, nor computer skills are needed to fill out this questionnaire. As no gold standard was available to address the issue of validation, we used a qualitative approach.

Methods: The Three Step Test Interview (TSTI) method containing think aloud and cognitive debriefing techniques was used. Thirty-two Dutch physical therapy clients with various education and literacy levels filled out the DTTSQ.

Results: Almost all respondents were able to complete the questionnaire independently. A few low educated respondents had trouble finding the right button to navigate through the application. The introduction and instruction videos are too long, but the concept of instruction videos is highly appreciated as was the use of a touch screen. Overall respondents were positive about the usability of this questionnaire. Prioritizing daily activities was difficult and led to invalid responses. The respondents stated they were able to reflect on their health problems through the DTTSQ.

Conclusions: The usability of the DTTSQ is currently sufficient. It could be even better by enhancing the user interface by shortening and simplifying the instruction videos, improving the visibility of the navigation buttons, showing all selectable daily activities in one screen and improving the instruction concerning prioritizing daily activities. Enhanced user interface may also solve the problems with validity.

P47 - Identifying barriers and facilitators to people's ability to obtain health information, and the development and evaluation of a web portal to improve health literacy

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Background: Contemporary healthcare is complex. For users, participation in decision making is not only dependent on access to valid information, but also on the ability to interpret, understand and act upon such information. These are what are often referred to as health literacy skills. Presently, most interventions have been developed to improve the functional literacy of patients. But advice based on reviews of the health literacy literature and studies of conceptual development have extended this focus to include recommendations about the

development of initiatives that target critical and interactive skills.

Aim: To improve people's health literacy skills related to obtaining health information through an intervention to target key identified barriers and facilitators, and to evaluate this effort

Methods: The project used a mixed methods approach including qualitative focus groups, a questionnaire study and systematic searches of the research literature for identifying barriers and facilitators to obtaining health information. A web portal was developed in the contextual framework of evidence based practice and shared decision making, targeting specific domains of health literacy based on the model by Zarcadoolas and colleagues. The final phase of the project included an evaluation of the web portal in a pragmatic randomized controlled trial. The purpose of this was to evaluate the effects of the web portal intervention compared to no intervention in a real life setting.

Results: Three main barriers to obtaining health information was identified; 1. the inability to understand and critically appraise health information; 2. the inability to exchange information in consultations, 3. not knowing where to find reliable and relevant information. Our web portal was therefore tailored to address these barriers. The content was presented in ways that encouraged users to adopt an active role in decision making and encouraged them to see that decisions about healthcare should be informed by the best available, current, valid, and relevant evidence. Central to the design of the structure of the web portal were three sets of tools, each presented in an easily accessible and logically structured way.

Conclusion: The web portal is freely available to the public at no cost and provides access to evidence based practical tools for enabling informed decision making.

P48 - New European Challenges: Health Literacy Intervention in Diverse Communities

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Introduction: Immigration in the EU is central to the public and political debate in Europe, receiving more attention in recent years, especially in relation to immigration from the southern border. The thirty-nine million registered immigrants represent about eight percent of the EU population to which must be added the irregular influx. The Strait of Gibraltar represents the gateway of immigration

from Africa to Europe and thus represents a geo-strategic location to consider.

The lack of national responses to address the needs of health service delivery to the growing diversity of population, community cultural competence deficit and difficulties inherent in the immigrant status (the way the migration process itself develops, language barrier, socio-cultural exclusion situations and low health literacy) influencing the deterioration of their welfare and act as determinants of health factors.

In this regard, the Health Literacy is a basic social determinant of health to enhance and develop the empowerment of disadvantaged populations. It influences, among others, the availability and the ability to manage health information effectively, the level and quality of self-care, therapeutic adherence and, ultimately, the general health status. Under the European Equi-Health project (which aims to strengthen the capacity of governments and public sector actors to provide quality services in health and social care), the National PROCOMDI project (aimed at designing learning paths and action to improve the competence of providers of public services) and in line with the priority in health (Health Literacy) by the European Commission, this study aims to develop a program of community intervention on Health Literacy, culturally competent, based on scientific evidence and identified needs, to improve access and utilization of health services in the Strait of Gibraltar. This project has been funded by the Andalusian Regional Ministry of Immigration Policy. Design. Methods: Mixed design investigation configured in three phases: first and second phase of qualitative design using focus groups and expert consensus, respectively, and third phase of quasi-experimental design with one group and pre and posttest measures. Preliminary results of first and second phase are presented.

Conclusions: The analysis of discourse denotes a limited Health Literacy in all participating groups (where the length of stay in the country is a decisive factor) and highlights the multidimensionality of the concept. The main difficulties of the immigrant population in access to services are: misinformation about their rights, language and cultural difficulties, inadequate health system to their socioeconomic conditions and the use of different ways of addressing the symptom. The effectiveness of new methodological strategies for the development of proposals for intervention based on action-participation is shown.

Key words: Health Literacy, Intervention, Migrant Population, Empowerment, Health Promotion, Social Determinant of Health, Public Health.

P49 - Health literacy analysis in citizens seeking health education in Galicia (Spain)

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Introduction: The Galician Health School for Citizens, is a public institution focused on health education initiatives to help patients, families and citizens to make sound health decisions. Analyzing health literacy in their population is a key point for measuring the effectiveness of their programs. The European Health Literacy questionnaire is a new tool designed to assess health literacy in a broad way, integrating perceived difficulties with health information in the domains of health care, disease prevention and health promotion, in terms of accessing, understanding, appraising and applying relevant health information. The aims of this study were to analyze health literacy in a sample of a population seeking health education in Galicia (Spain). Hopefully, this will contribute to designing more effective health education initiatives that fit the population's needs and expectations.

Methods: The HLS-E-47 questionnaire was administered face-to-face in a sample of 257 Spanish adults seeking health education workshops in Galicia in July 2013. Additionally, sociodemographic data and perceived improvement in addressing health problems after attending the workshops were collected.

Results: Health literacy levels in this population are similar to those reported in the national (Spanish) results from the European Health Literacy Survey, although they vary according to the competence and health domain addressed. Women and those with lower levels of formal education show the poorest levels of health literacy but, surprisingly, we found no relationship between age and health literacy scores. Of note was the fact that the sample scored higher in the health care and disease prevention domains, and in their understanding and application of health information than the national average obtained in Spain for the European Health Literacy Survey. This was especially true in the case of those citizens who had participated in previous workshops. Most of the participants enrolled on these courses because they have chronic diseases and mainly wish to improve their knowledge and skills to manage their problem. When the sample was asked if they thought that the workshop had improved their skills and capabilities to manage their health status, 75% of the answered "yes". This

confirms the validity and successful nature of the programs directed at patients, although there is room for improvement in the health promotion area, which had the lowest scores.

Conclusions: Most of the participants concluded that they had improved their knowledge and skills to manage their problem. The results of Health Literacy analyses must be taken into account when formulating health literacy policies. It is necessary to address a given population's needs to design and implement health education programs to focus on removing the gaps that prevent people from improving their health. This study was funded by MSD Spain.

P50 - Effective communication with patients with limited health literacy and migrant background.

Healthcare professionals need to adjust their communication and use more visual materials

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Introduction: Patients with limited health literacy and many first generation migrants have difficulties in obtaining health information and understanding and applying it correctly. They have problems understanding healthcare professionals and to correctly follow up their advice or instructions for treatment. Therefore they are at greater risk of poor health outcomes. To tackle this communication problem, healthcare professionals should adjust their communication and are encouraged to use visual materials supporting the consult.

Methods: At Pharos, we develop and conduct training programs for healthcare professionals in effective communication with patients with limited health literacy and migrants who have difficulties understanding Dutch. They learn to avoid jargon, to use "teach back" methods, to encourage patients to ask questions, to pay attention to cultural differences and to use visual materials.

In addition, Pharos develops understandable visual health information materials in participation with the target groups.

First, we analyze among healthcare professionals which information is essential to communicate to patients. Second, we ask patients with limited health literacy and migrant background how they perceive the existing materials; the illustrations and text. Based on these analyses we adjust existing materials or develop new simplified illustrations supported by a few written sentences. The adjusted and new materials are extensively pretested among the target groups and healthcare professionals.

Results: The use of these newly developed visual materials and elaborated competencies of the professional lead to better understanding among patients of their diagnosis and suggested treatment by their doctor. Professionals note that by using the simplified information, patients ask more questions, show more understanding, and are more interested in their disease and cure.

P51 - Individualized health communication at the dental clinic - A randomized controlled trial

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Introduction: The encounter with a dentist or a dental hygienist is an opportunity for patients to receive individualized oral health information, guidance, and learn skills for oral health self-care. However, low health literacy in patients may be a barrier to successful communication between patients and dental health professionals. The aim of the study was to investigate if communication adapted to patients' health literacy levels may improve patients' oral hygiene, inspired by Nutbeams (2008) model of health literacy as a risk factor.

Methods: 130 adults (mean age 48 years) from the waiting list at the University Dental Clinic, Tromsø, Norway participated in the study. Health literacy level was assessed by using the Adult Health Literacy Instrument for Dentistry (AHLID). Oral hygiene was measured clinically by utilizing standardized international indexes for dental plaque and gingival bleeding. Demographic variables were collected using a self-administered questionnaire. Participants were randomly assigned to intervention or control group. The intervention group got individualized communication adapted to their health literacy levels. The control group got standard information according to what is common in general dental practice today. After minimum 6 months patients' oral hygiene was measured clinically once again. The person doing the all clinical measurements was blind to patients' health literacy levels. Paired-sample t-test was applied to determine differences in dental plaque and gingival bleeding from clinical measurements at baseline and recall.

Results: There was a significant decrease in dental plaque from baseline to recall after 6 months for

both patients in the intervention group ($p < 0.001$) and in the control group ($p < 0.05$). A significant decrease in gingival bleeding ($p < 0.001$) was also seen in the intervention group, and a minor non-significant decrease in the control group.

Conclusion: Individualized health communication adapted to patients' health literacy levels seems to positively affect oral hygiene in patients over time.

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