



The impact of health literacy on health

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Overview

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2. Why is Health Literacy important these days?
3. The Concept of Health Literacy
4. The European Health Literacy Survey (HLS-EU)
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1. HEALTH LITERACY IS HIGH ON THE EUROPEAN HEALTH POLICY AGENDA



1. Health Literacy is high on the European Health Policy Agenda

Together for Health: A Strategic Approach for the EU 2008-2013

“Promotion of health literacy programmes for different age groups”

(Commission of the European Communities, 2007)

EU Health Programme 2008-2013:

“ It seeks to [...]generate and disseminate health information and knowledge..”



HEALTH 2020: *“Health literacy is a key dimension of Health 2020, the European health policy framework.”*

(Jakab Z. WHO Regional Director for Europe)

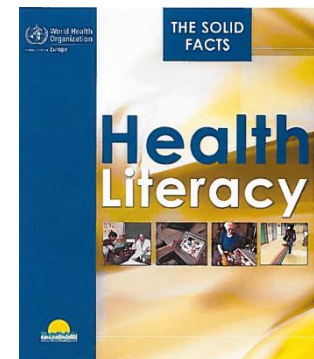


European Review of Social Determinants of Health.

(WHO Regional Office for Europe, 2012)

HEALTH LITERACY. THE SOLID FACTS (2013)

(WHO Regional Office for Europe 2013)





2. WHY IS HEALTH LITERACY IMPORTANT THESE DAYS?



2.1 Health Literacy is an important social determinant of health, related to inequality of health

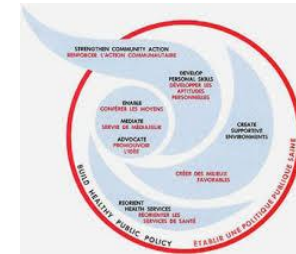




2.2 Health Literacy is a core concept of and related to other concepts of Health Promotion

Health Promotion (Ottawa Charter, 1986):

- **Definition:** „ *Health promotion is the process of enabling people to **increase control** over, and to improve their health.*“ (Ottawa Charter)
- **HP principles:** Enable, mediate, advocate & Equality
- „HL is critical to **empowerment**“, WHO 1998)
- Action area 4: **Develop Personal Skills** („ *to exercise more control over their own health and over their environments, and to make choices conducive to health.*“)
- Action area 1: Build healthy public policy (**Health literacy in all policies**)
- Action area 2: Create supportive environments (**Health Literate Settings**)
- Action area 5: Reorient health services (**Health literate health care organizations**)
- **Capacity Building** (as a personal resource & as a situative infrastructure)





2.3 Health literacy is a measurable concept linked to literacy research & there are effective interventions available

- HL is a measurable concept by different available instruments
- HL research & practice has been mainly developed for patients & health care, and less so far for general populations
- Evidence shows that HL makes a difference for health care (patient compliance, outcomes, costs etc.)
- A number of effective interventions are available to deal with low HL or improve HL in HC
- An interesting proposal for a Health Literate Health Care Organization has been made



2.4 Health Literacy is important for everybody in different roles and tasks of every day life

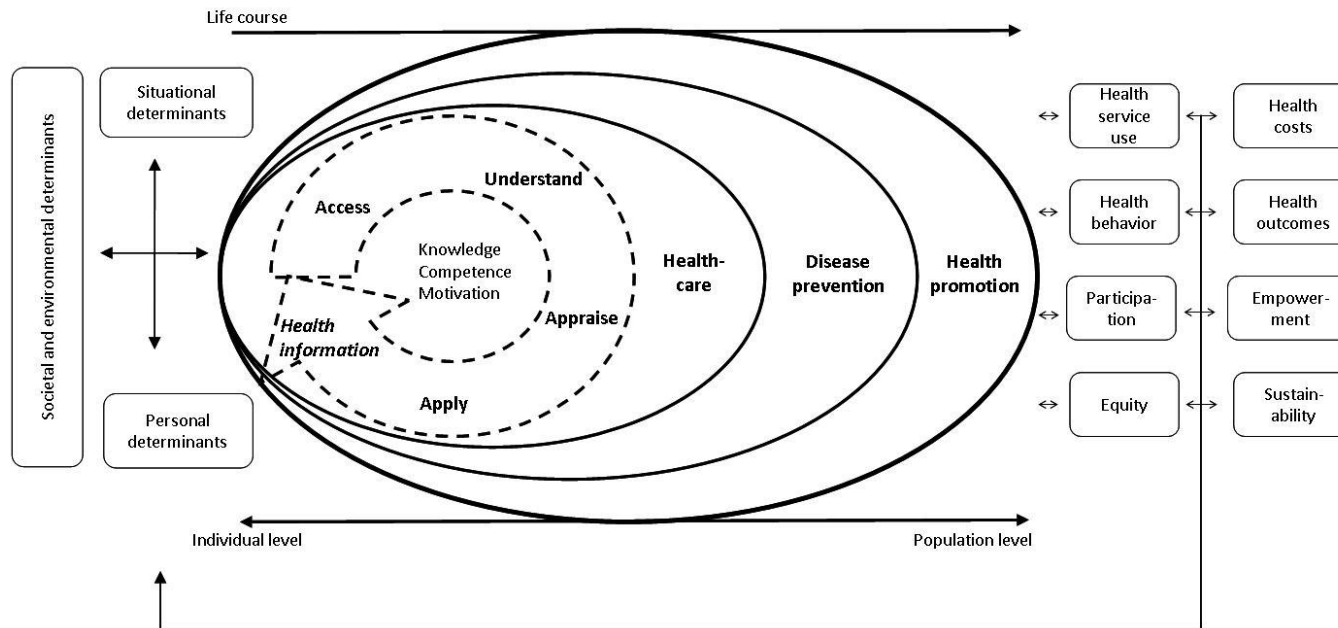
1. The **demands** on personal skills of individuals for a successful **life management** rise and continuously change with the complexity and dynamic of (late) modern societies.
2. **Tasks and roles** of managing ones life (e.g. as worker, consumer, patient, citizen) are increasingly to be taken within various **organizations and functional systems**.
3. These tasks and roles require more and more personal **information and communication management** for informed, responsible & accountable **decision making** and action taking in different co-productive role-relations (quality).
4. **Inadequate/ insufficient participation** has an effect on the opportunities in life, the quality of life and the life expectancy of the affected individual (equality & equity).
5. This applies in particular to **health-/illness related aspects** of lifestyle and to the role of the “responsible patient”!
6. In “**Health Societies**” (Kickbusch) (almost) every decision we take – in our different roles - (almost) always has an impact on our health.
7. Therefore, **personal competences** of individuals – in general literacy (reading, writing, calculating), in particular language competence or more specifically health literacy, media-literacy, IT-literacy, has become a focal point in science, politics and practice.



3. THE CONCEPT OF HEALTH LITERACY



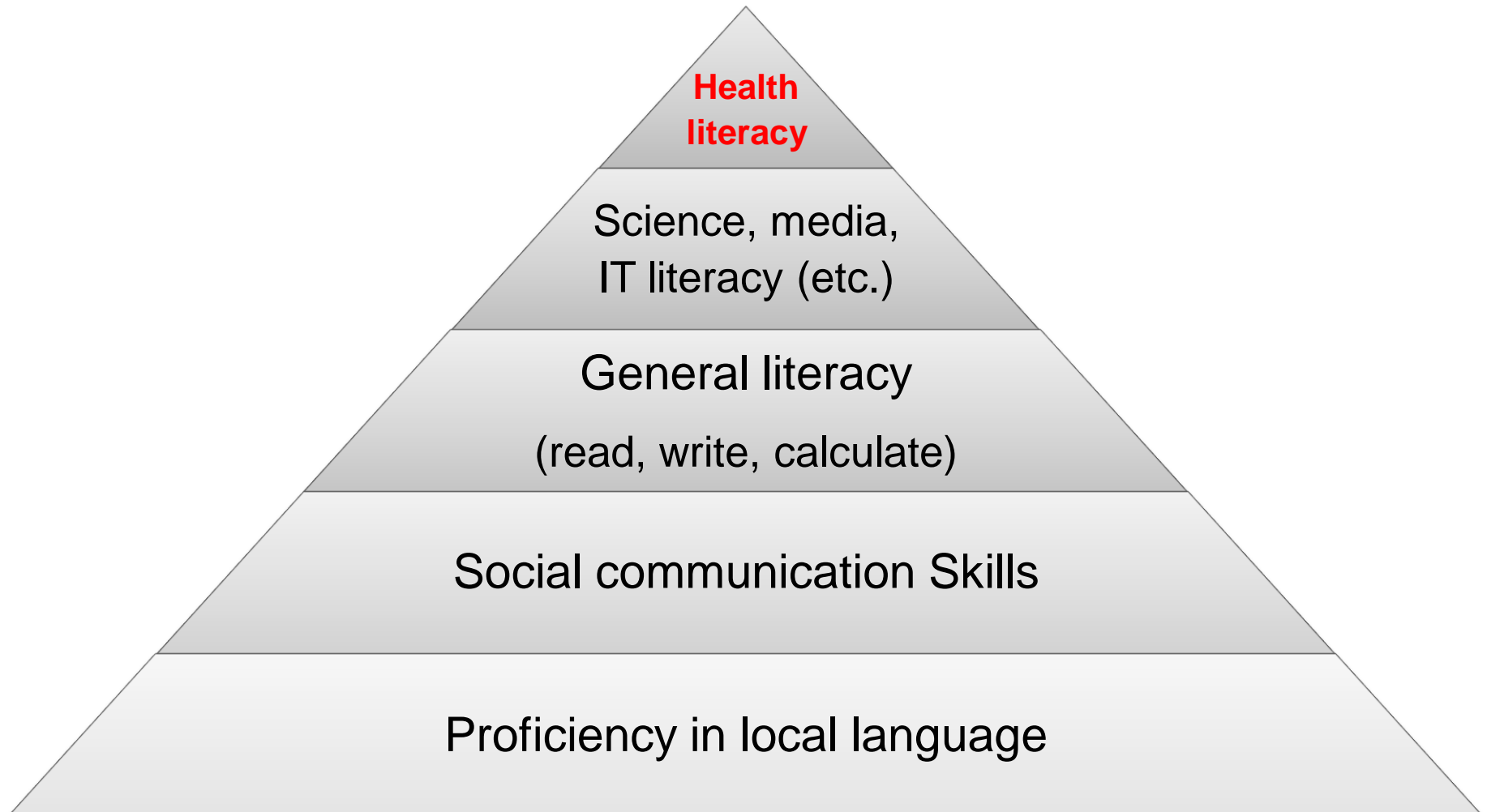
3.1 Integrated Model and Definition of Health Literacy for the HLS-EU Study (Sorensen et al. 2012)



“Health literacy is linked to literacy and encompasses people’s knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course.”



3.2 Health literacy is based on other literacies and skills





3.3 Health literacy is a relational concept and therefore can be improved by different types of interventions



Source: Parker, 2009

Improve personal abilities to ...

- access
- understand
- appraise
- apply

Make situations / systems more ...

- accessible
- understandable
- appraisable
- applicable

•(concerning) Information of relevance for health-related decisions



4. THE EUROPEAN HEALTH LITERACY SURVEY (HLS-EU)



4.1 Objectives of the HLS-EU Study

1. Adapt a model instrument for measuring health literacy in Europe
2. Generate first-time data on health literacy in European countries, providing indicators for national and EU monitoring
3. Make comparative assessment of health literacy in European countries
4. Create National Advisory Bodies in countries participating in the survey and to document different *valorization strategies* following national structures and priorities
5. Establish a European Health Literacy *Network*



4.2 Data Collection of HLS-EU Study

- In 8 member states AT, BG, DE (NRW), EL (Athens +), ES, IE, NL, PL
- For stratified random samples of 1000 per country
- For EU-citizen populations aged 15+
- By computer-assisted personal interviewing technique (CAPI) (BG, IE = PAPI)
- Within the period of summer 2011
- By TNS Opinion on behalf of HLS-EU consortium
- With Euro-barometer methodology (EU citizens, not residents!)



4.3 Indicators and Index of Health Literacy

Format of items

- „On a scale from very easy to very difficult, how easy would you say it is to
- “very difficult” – “difficult” - “easy” – “very easy”, (don´t know)

Five examples of an instrument of 47 items

5. ... understand, what your doctor says to you?
12. ... judge if the information about illness in the media is reliable?
18. ... find information on how to manage mental health problems like stress or depression?
38. ... understand information on food packaging?
47. ... take part in activities that improve health and well-being in your community?

Index-construction

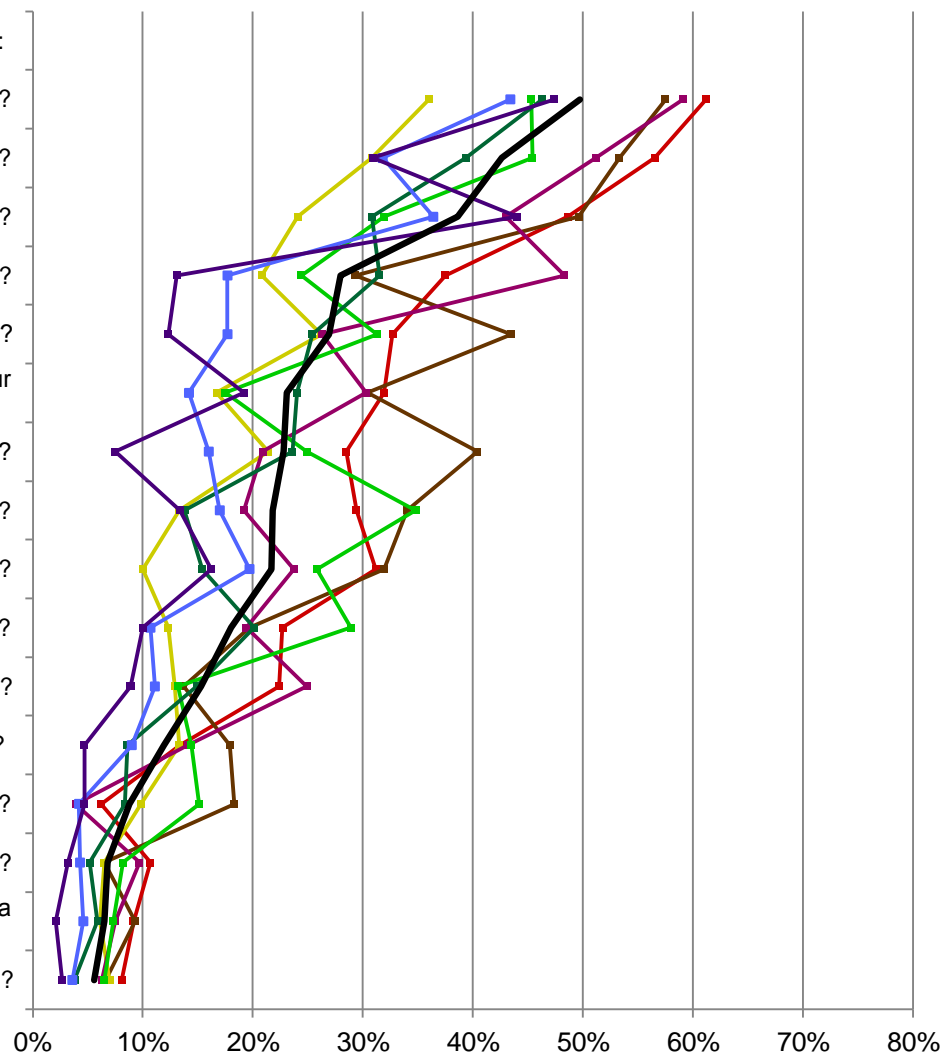
- A comprehensive health literacy index & 3 domain specific indices have been constructed
- *standardized* on a scale from a minimum of 0 to a maximum of 50 (= best possible HL),



4.4 Combined Shares of 'Fairly Difficult' and 'Very Difficult' Answers of Health Care Related Items for Countries and Total

On a scale from very easy to very difficult. How easy would you say it is to:

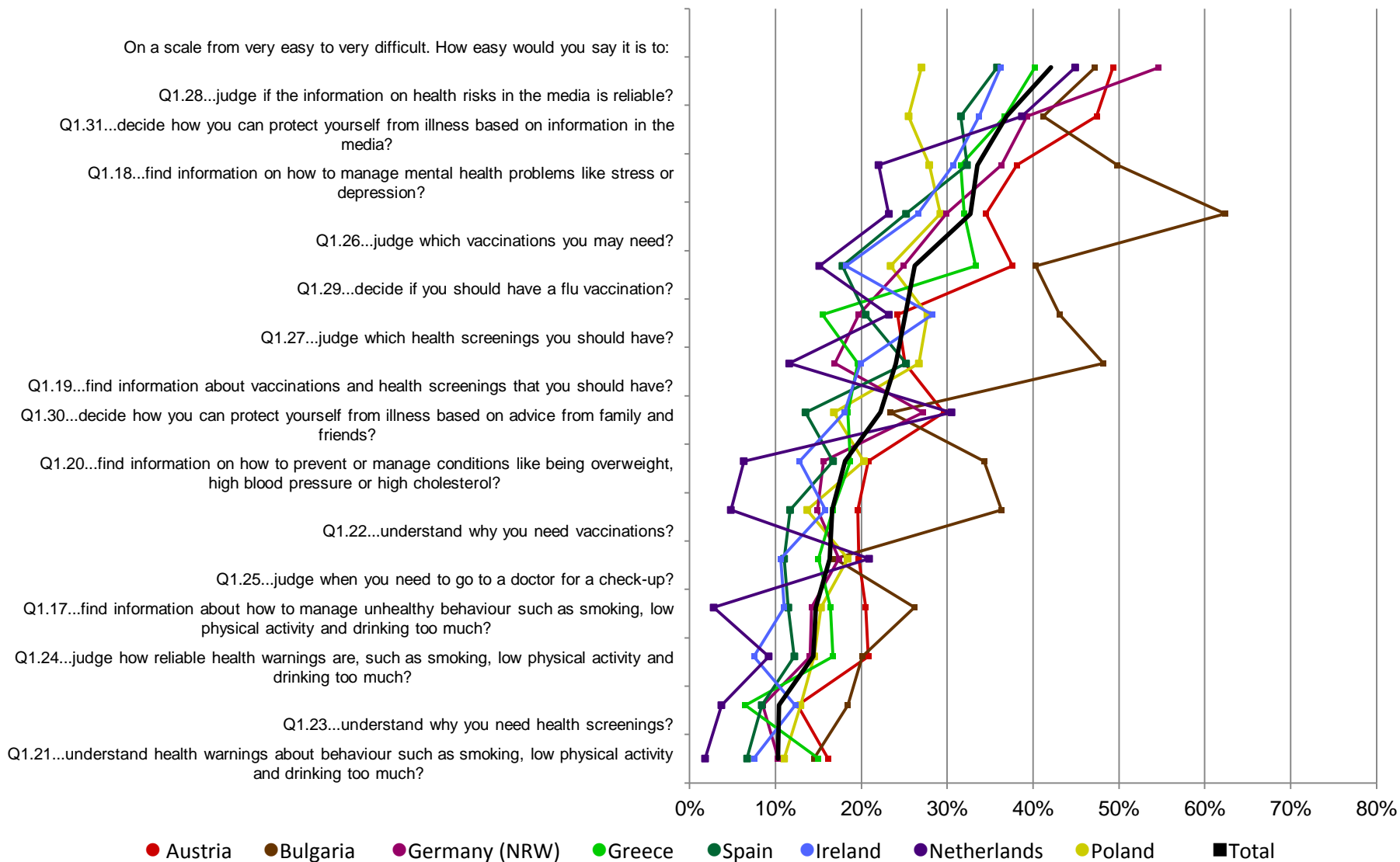
- Q1.12...judge if the information about illness in the media is reliable?
- Q1.10...judge the advantages and disadvantages of different treatment options?
- Q1.11...judge when you may need to get a second opinion from another doctor?
- Q1.6...understand the leaflets that come with your medicine?
- Q1.2...find information on treatments of illnesses that concern you?
- Q1.13...use information the doctor gives you to make decisions about your illness?
- Q1.1...find information about symptoms of illnesses that concern you?
- Q1.3...find out what to do in case of a medical emergency?
- Q1.7...understand what to do in a medical emergency?
- Q1.9...judge how information from your doctor applies to you?
- Q1.5...understand what your doctor says to you?
- Q1.4...find out where to get professional help when you are ill?
- Q1.15...call an ambulance in an emergency?
- Q1.14... follow the instructions on medication?
- Q1.8...understand your doctor's or pharmacist's instruction on how to take a prescribed medicine?
- Q1.16...follow instructions from your doctor or pharmacist?



● Austria ● Bulgaria ● Germany (NRW) ● Greece ● Spain ● Ireland ● Netherlands ● Poland ■ Total



4.5 Combined Shares of 'fairly difficult' and 'very difficult' Answers of *Disease Prevention Related Items* for Countries and Total

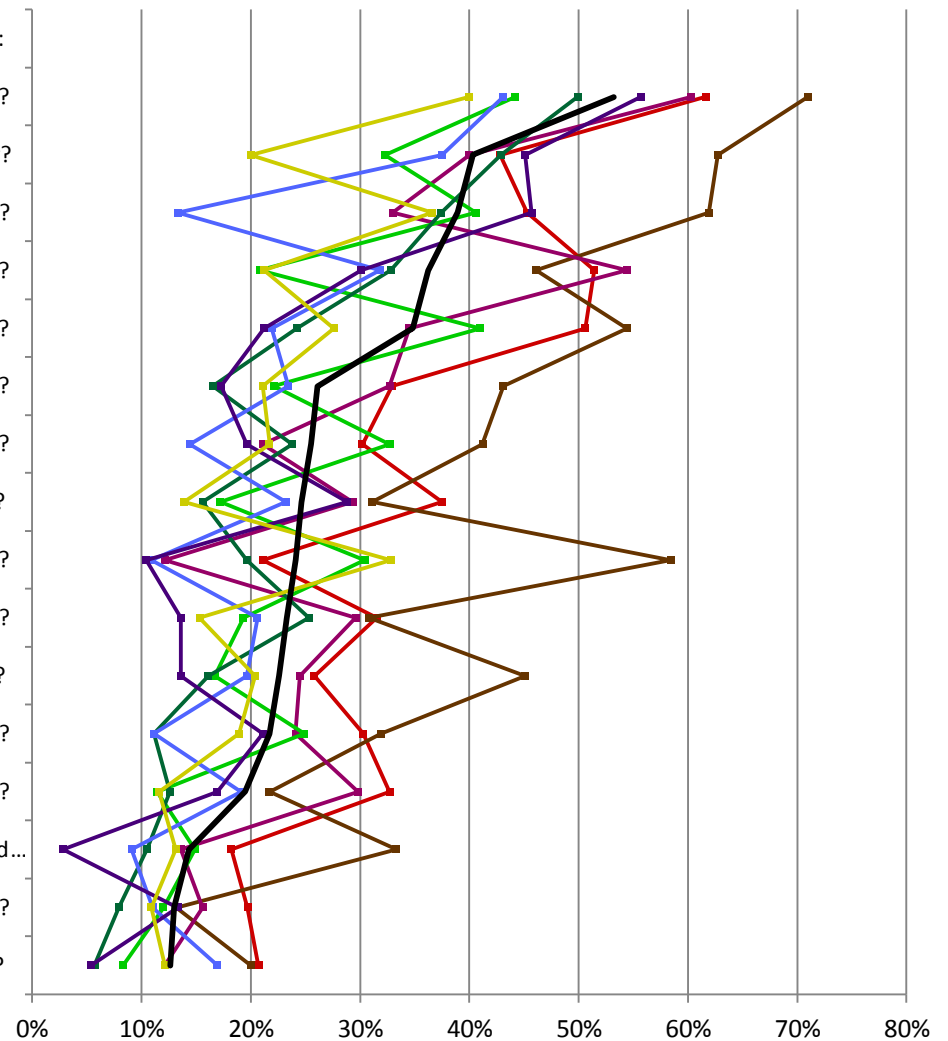




4.6 Combined Shares of 'Fairly Difficult' and 'Very Difficult' of Health Promotion Related Items for Countries and Total

On a scale from very easy to very difficult. How easy would you say it is to:

- Q1.35...find out about political changes that may affect health?
- Q1.34...find information on how your neighbourhood could be more health-friendly?
- Q1.47...take part in activities that improve health and well-being in your community?
- Q1.38...understand information on food packaging?
- Q1.36...find out about efforts to promote your health at work?
- Q1.40... understand information on how to keep your mind healthy?
- Q1.46...influence your living conditions that affect your health and well being?
- Q1.41...judge where you live affects your health and well-being?
- Q1.45...join a sports club or exercise class if you want to?
- Q1.39...understand information in the media on how to get healthier?
- Q1.33...find out about activities that are good for your mental well-being?
- Q1.44...make decisions to improve your health?
- Q1.42...judge how your housing conditions help you to stay healthy?
- Q1.32...find information on healthy activities such as exercise, healthy food and...
- Q1.37...understand advice on health from family members or friends?
- Q1.43...judge which everyday behaviour is related to your health?



● Austria ● Bulgaria ● Germany (NRW) ● Greece ● Spain ● Ireland ● Netherlands ● Poland ■ Total



4.7 Defining Levels of Health Literacy

- It is common practice in studies of literacy or health literacy to define thresholds for limited HL and by that different levels of (health) literacy
- For the four HLS-EU indices the following thresholds and levels were defined
 - **Inadequate HL** = scores of 25 or less points
 - **Problematic HL** = scores >25-33 points
 - Sufficient HL = scores >33-42 points
 - Excellent HL = scores >42-50 points
 - Inadequate + problematic = **limited** health literacy



5. RESULTS OF THE HLS-EU SURVEY

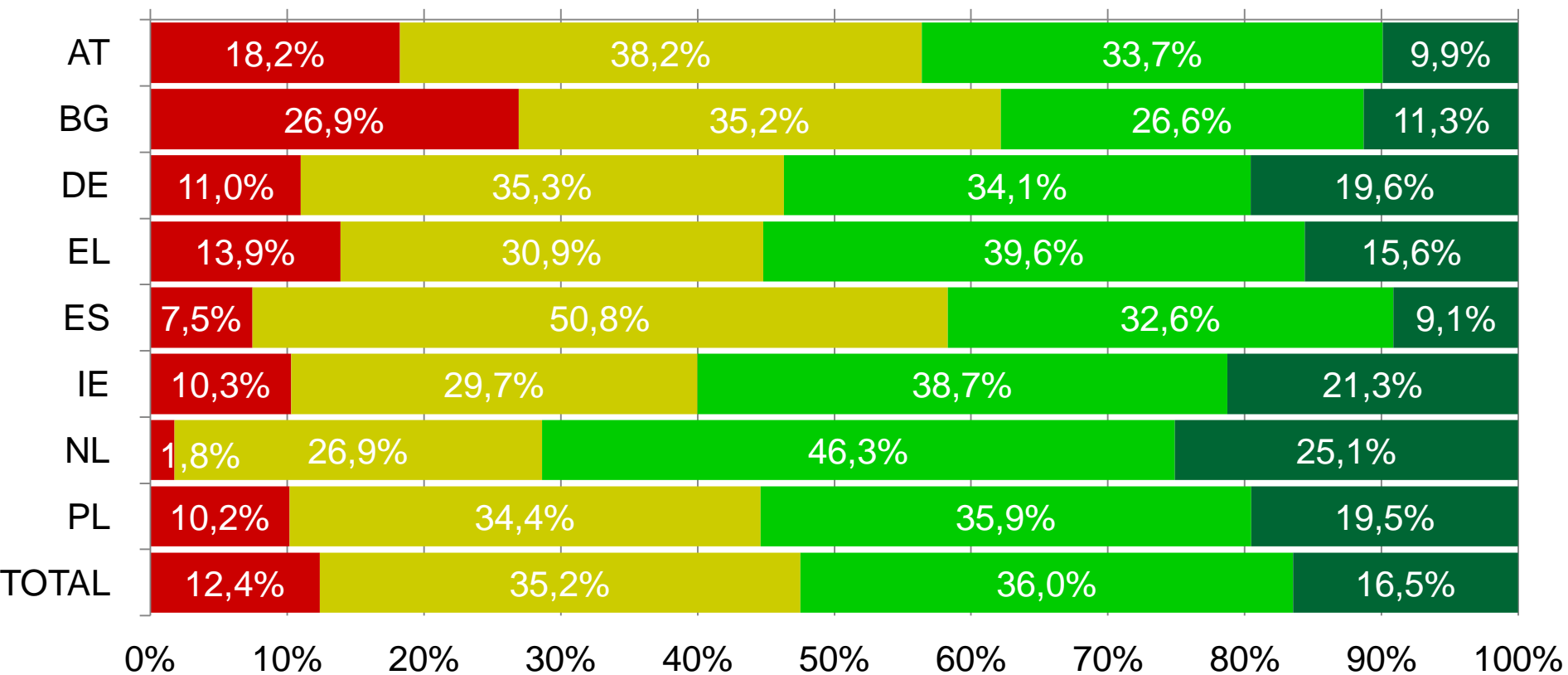


5.1 GENERAL HEALTH LITERACY



5.1.1 Percentage Distributions of General-HL Levels, for Countries and Unweighted Total Sample

■ inadequate general-HL ■ problematic general-HL ■ sufficient general-HL ■ excellent general-HL



AT [N=979] BG [N=925] DE (NRW) [N=1045] EL[N=998] ES[N=974] IE[N=959] NL[N=993] PL[N=921] TOTAL [N=7795]



5.1.2 Percentages of Individuals with *Limited General-Health Literacy* in Vulnerable Groups, for Countries and Unweighted Total Sample

INDICATOR	CATEGORY	Austria	Bulgaria	Germany	Greece	Spain	Ireland	Nether-lands	Poland	Total
		%	%	%	%	%	%	%	%	%
Social Status	Very Low	78.5	79.7	58.7	79.6	84.3	64	49.9	59.9	73.9
Self-Perceived Health	Bad; Very Bad	86	82.8	56.5	83.3	77.8	55.6	41.2	71.7	72.8
Education (ISCED)	Level 0, Level 1	63.2	76.5	58.1	77.2	74.4	50.8	41.3	100	68
Able to Pay for Medication	Very Difficult	77.6	81.2	40	66	55.2	59.8	57.5	61.9	67.1
Able to Afford Doctor	Fairly Difficult, Very Difficult	76.1	80.1	56.3	61.1	68	55.7	42.1	74.5	66.5
Limited Activities by Health Problems	Severely Limited	81.9	80.8	54.6	80	76.7	56.3	34.7	65.9	65.6
Monthly Household Income	Less than €800	37.7	83.6	56.4	70.2	70.3	58.4	38.4	61.6	65.6
Able to Pay for Medication	Fairly Difficult	66.6	71.7	65.8	59.6	71.7	51	35.5	67.5	63.6
Difficulties Paying Bills	Most of the Time	67.1	75.1	46.7	60.7	61.7	61.2	33.5	42.2	63.4
Long Term Illness	Yes, More than One	78.5	83.3	58.4	73.9	69.5	45.3	32.6	54.3	61
Age	76 or Older	72.6	75.4	53.9	72.3	71.1	46	28.8	65.4	60.8
Social Status	Low	59.4	62.1	63.9	57.4	59.2	53.3	48.4	63.8	60



5.1.3 Effects of Five Social Determinants as Multiple Predictors on *General-Health Literacy* (Beta Weights and Adjusted R-Squares for 8 Countries & Un-weighted Total Sample)

General-HL by...	AT	BG	DE	EL	ES	IE	NL	PL	TOTAL
Financial Deprivation	-.234	-.310	-.230	-.228	-.071	-.278	-.142	-.349	-.239 (-.300)*
Social Status	.040 ^a	.108	.002^a	.111	.069	.228	.115	.068	.142 (.291)*
Education (ISCED)	.058 ^a	.107	.102	.224	.138	.046^a	.113	.083	.131 (.239)*
Age	-.145	-.140	-.016^a	-.173	-.153	-.019 ^a	.033 ^a	-.099	-.094 (-.121)*
Gender	.079	.050 ^a	.094	.029 ^a	.021^a	.074	.119	.090	.063 (.46)*
Adj. R square	.096	.247	.082	.289	.089	.190	.081	.208	.174
Means	32	30.5	34.5	33.6	32.9	35.2	37.1	34.5	33.8
SD	7.6	9.2	7.9	8.5	6.1	7.8	6.4	8	8
	[N=838]	[N=840]	[N=939]	[N=961]	[N=916]	[N=847]	[N=930]	[N=814]	[N=7085]

a...not significant on the 0,05 level, *Spearman's Rho Correlation Coefficients

General-HL from 0=minimal HL to 50=maximal HL; **Financial Deprivation** from low deprivation to high deprivation; **Social Status** from 1=lowest place in society to 10=highest place in society; **Education (ISCED)** from 0= lowest education level to 6=highest education level; **Age** in years; **Gender** 0=male, 1=female;

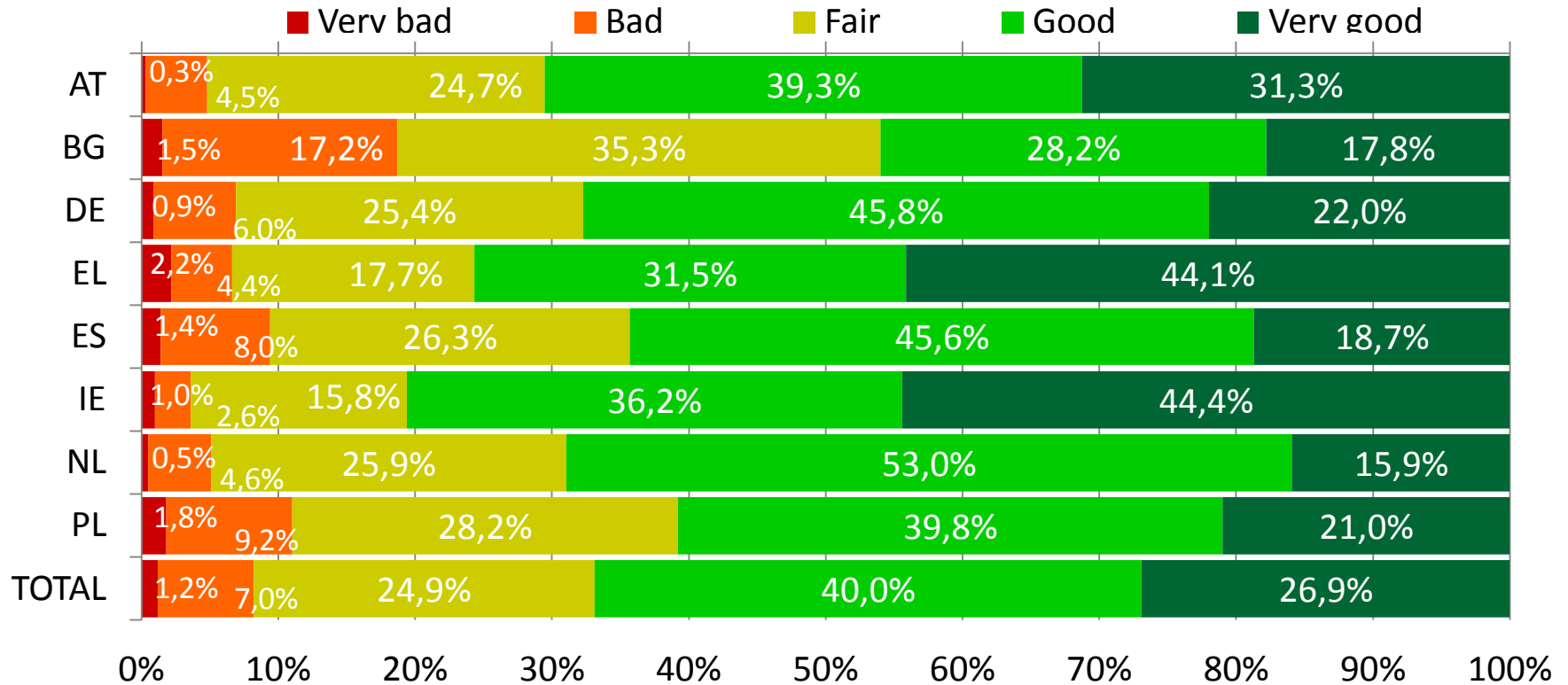


5.2. SELF-ASSESSED HEALTH



5.2.1 Variation of Self-Assessed Health (SF 36 item)

(Percentage Distributions, Means & S.D. for 8 Countries & Un-weighted Total Sample)



AT [N=1010] | BG [N=998] | DE (NRW) [N=1055] | EL[N=999] | ES[N=1000] | IE[N=1006] | NL[N=1022] | PL[N=993] | TOTAL[N=8093]

AT	BG	DE	EL	ES	IE	NL	PL	Total
Ø2.0	Ø2.6	Ø2.2	Ø1.9	Ø2.3	Ø1.8	Ø2.2	Ø2.3	Ø2.2
SD 0.9	SD 1.0	SD 0.9	SD 1.0	SD 0.9	SD 0.9	SD 0.8	SD 1.0	SD 1.0



5.2.2 Effects of five Social Determinants as Multiple Predictors on *Self-Assessed Health* (Beta Weights and Adjusted R-Squares for 8 Countries & Un-weighted Total Sample)

Self-Assessed Health by...	AT	BG	DE	EL	ES	IE	NL	PL	TOTAL
Age	.479	.514	.325	.531	.407	.251	.152	.463	.392
Social Status	-.023 ^a	-.066 ^a	-.063 ^a	-.085	-.038 ^a	-.096	-.186	-.157	-.140
Financial Deprivation	.189	.143	.254	.119	.116	.089	.096	.229	.113
Education (ISCED)	-.025 ^a	-.022 ^a	-.048 ^a	-.108	-.044 ^a	-.158	-.026 ^a	.007 ^a	-.065
Gender	.037 ^a	.043 ^a	-.022 ^a	.034 ^a	.075	.009 ^a	.031 ^a	-.032 ^a	.028
Adj. R Square	.284	.369	.192	.447	.222	.140	.079	.418	.249
Means	2.0	2.6	2.2	1.9	2.3	1.8	2.2	2.3	2.2
SD	0.9	1.0	0.9	1.0	0.9	0.9	0.8	1.0	1.0

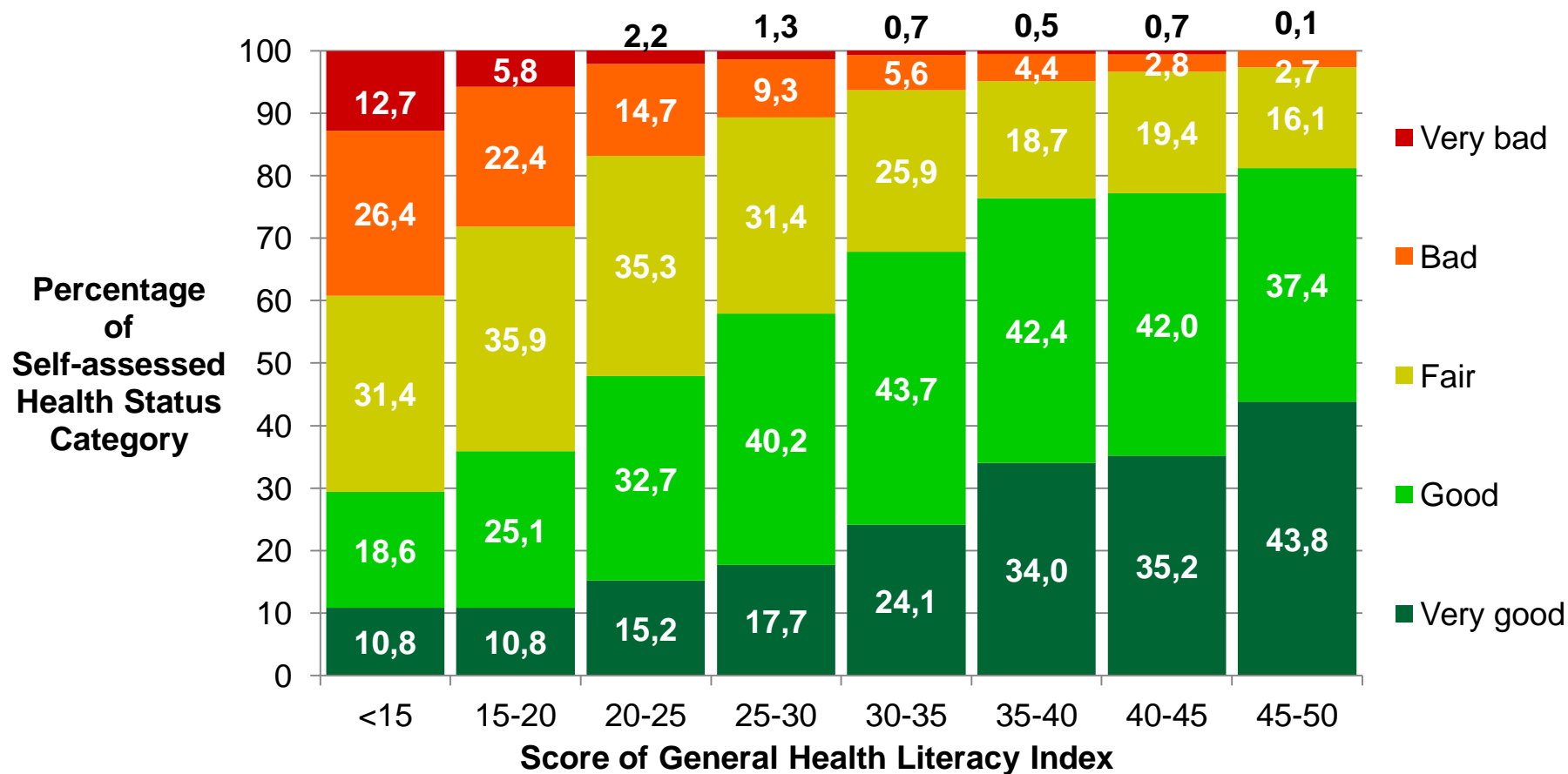
a...not significant on the 0,05 level; **Self-Assessed Health** from 1=very good to 5=very bad; **Age** in years; **Social Status** from 1=lowest place in society to 10=highest place in society; **Financial Deprivation** from low deprivation to high deprivation; **Education (ISCED)** from 0= lowest education level to 6=highest education level; **Gender** from 0=male to 1=female;



5.3 HL EXPLAINING VARIATIONS IN SELF- ASSESSED HEALTH



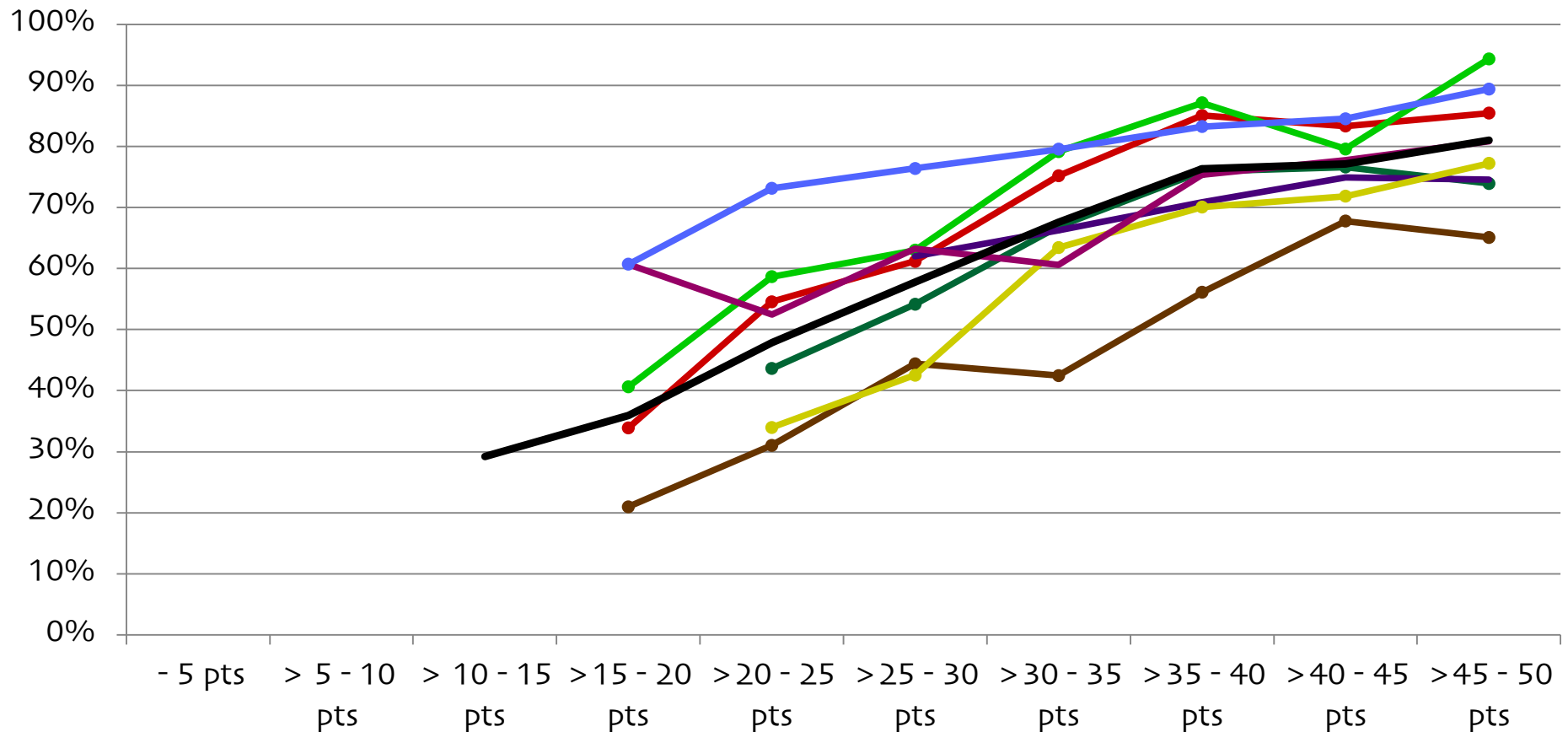
5.3.1 Association of Self-Assessed Health with General-Health Literacy (Percentage Distributions for Total Sample)



<15[N=102] | 15-20[N=259] | 20-25[N=600] | 25-30[N=1348] | 30-35[N=2185] | 35-40[N=1531] | 40-45[N=1048] | 45-50[N=704] | TOTAL[N=7777]



5.3.2 Association of Self-Assessed Health with General-Health Literacy (Percentage “very good” + “good” for 8 Countries & Un-weighted Total Sample)



● Austria ● Bulgaria ● Germany (NRW) ● Greece ● Spain ● Ireland ● Netherlands ● Poland ■ Total

AT [N=979], BG [N=926], DE(NRW) [N=1045], ES [N=975], EL [N=999] IE [N=962], NL [N=994], PL [N=923], TOTAL [N=7794]
only levels with N > 10 are illustrated



5.3.3 Associations between General-Health Literacy and Health Status Variables, (Spearman's Rho Correlations for 8 Countries & Un-weighted Total Sample)

General-HL and...		AT	BG	DE	EL	ES	IE	NL	PL	TOTAL
Self-Assessed Health	r_s	-.309**	-.278**	-.232**	-.314**	-.282**	-.237**	-.154**	-.332**	-.274**
Limitations by Health Problems	r_s	.278**	.197**	0.08	.324**	.212**	.123*	.093	.151**	.170**
Long-Term Illness	r_s	.227**	.257**	.136**	.256**	.127**	.091**	.047	.209**	.156**
		[N=360-1002]	[N=351-1002]	[N=452-1159]	[N=289-1043]	[N=323-1009]	[N=291-972]	[N=413-990]	[N=453-1041]	[N=2932-8218]

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Self-Assessed Health from 1=very good to 5=very bad; **Limitations by Health Problems** from 1=severely limited to 3=not limited; **Long-Term Illness** from 1=yes, more than one to 3=no illness;



5.3.4 Effects of Seven Social Determinants as Multiple Predictors on *Self - Assessed Health* (Beta Weights and Adjusted R-Square for 8 Countries & Un-weighted Total Sample)

Self- Assessed Health by...	AT	BG	DE	EL	ES	IE	NL	PL	TOTAL
Age	.445	.486	.319	.496	.383	.235	.144	.456	.365
General-HL	-.205	-.103	-.168	-.094	-.185	-.136	-.144	-.130	-.168
Social Status	-.020 ^a	-.061 ^a	-.062 ^a	-.068	-.023 ^a	-.049 ^a	-.158	-.142	-.112
Fin. Dep.	.151	.105	.212	.099	.100	.053 ^a	.077	.184	.071
Gender	.050 ^a	.056	-.006 ^a	.037 ^a	.077	.018 ^a	.046 ^a	-.027 ^a	.039
Education (ISCED)	-.010 ^a	-.010 ^a	-.023 ^a	-.072	-.025 ^a	-.131	-.007 ^a	.027 ^a	-.036
NVS	.000 ^a	-.014 ^a	-.019 ^a	-.054 ^a	.031 ^a	-.081*	-.023 ^a	.011 ^a	-.026 ^a
Adj. R-Square	.317	.366	.213	.452	.240	.154	.088	.413	.268

[N=864] [N=859] [N=965] [N=964] [N=936] [N=848] [N=946] [N=843] [N=7224]

a...not significant on the 0,05 level, **Self-Assessed Health** from 1=very good to 5=very bad; **General-HL** from 0=minimal HL to 50=maximal HL; **NVS** from 0=minimal to 6=maximum; **Gender** 0=male, 1=female; **Age** in years; **Education (ISCED)** from 0= lowest education level to 6=highest education level; **Financial Deprivation** from low deprivation to high deprivation; **Social Status** from 1=lowest place in society to 10=highest place in society;



5.3.5 Effects of Multiple Predictors (Beta Weights and Adjusted R-Square) on Self -Assessed Health, for Countries and Unweighted Total Sample (in a Model with 11 Predictors Alcohol Use, NVS and Education Were not Significant!)

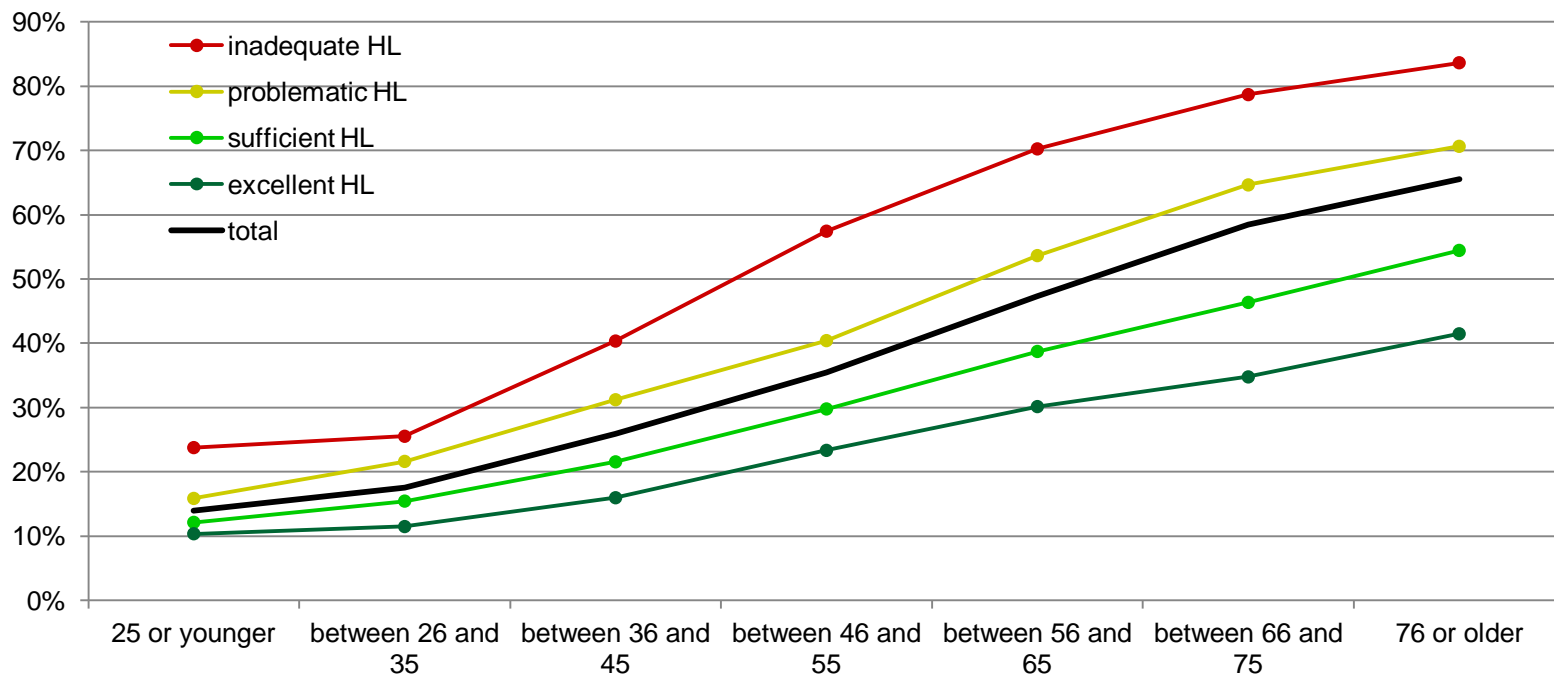
Self- Assessed Health by...	AT	BG	DE	EL	ES	IE	NL	PL	TOTAL
Long-Term Illness	.420	.391	.426	.508	.337	.528	.431	.390	.438
Age	.226	.277	.137	.302	.211	.118	-.010 ^a	.256	.182
General-HL	-.135 (r=-.309)	-.082 (r=-.278)	-.086 (r=-.232)	-.078 (r=-.314)	-.173 (r=-.282)	-.122 (-.237)	-.117 (-.154)	-.105 (r=-.332)	-.130 (r= -.274)
Social Status	-.015 ^a	-.040 ^a	-.038 ^a	-.077	-.009 ^a	-.051 ^a	-.135	-.093	-.108
Exercising Time	.086	.085	.126	.039 ^a	.089	.100	.024 ^a	.132	.083
Body-Mass Index	.114	.010 ^a	.087	-.028 ^a	.124	.078	.161	.046 ^a	.069
Gender	.067	.024 ^a	.025 ^a	.012 ^a	.075	.030 ^a	.028 ^a	-.046 ^a	.030
Financial Deprivation	.086	.049 ^a	.127	.052	.049 ^a	.037 ^a	.048 ^a	.132	.028
Adj. R-Square	.481	.462	.379	.626	.357	.426	.300	.543	.436
	[N=791]	[N=831]	[N=902]	[N=960]	[N=883]	[N=825]	[N=935]	[N=814]	[N=6941]



5.4 HL EXPLAINING VARIATIONS IN SELF-ASSESSED HEALTH IN DIFFERENT AGE-COHORTS



5.4.1 Probability of having fair, bad or very bad self-assessed health by HL levels and age groups (for Total Sample, N= 6923)



Logistic Regression controlled for: long-term illness (*), social status (*), exercising (*), BMI (*), Gen-HL-Raw (ns), Age(*), Gender (female ↑) (*), financial Deprivation(*), demographic standard weights (ns,) – means by HL-Levels and age groups
Nagelkerke/pseudo R²=0,46



6. SUMMARY OF RESULTS



6. Summary of Results

1. **Limited health literacy** is a problem of relevant proportions of citizens in Europe, but to a differing degree in different member states, from around 1/3 to 2/3 of the population.
2. There is a considerable **social gradient** not just for health, but also for **health literacy**, again differing by member state
3. In all included member states, **self-assessed health** and **health literacy** are directly **linked** to a certain degree. Even, when important social determinants are controlled for, general health literacy has a direct, significant and second strongest effect, while functional health literacy (NVS) has no significant effect at all!
4. This relationship of health literacy with self-assessed health is steadily increasing for older **age-cohorts!**



7. CONCLUSIONS



7.1 Principal Conclusions for Research

1. Further research is needed, but not just more, but **different research**, especially
 1. for studying **comprehensive HL** in **general populations**
 2. & for studying user-friendliness (readability/ complexity/ demands) of **situations, systems, services, products.**
2. Research has to be done in a **systematic comparative** way using **standardized instruments** to take into account regional socio-cultural differences
3. There is need for an **institutionalized sustainable framework** like OECDs PISA or WHO's HBSC projects for regularly studying HL (starting with some countries and open to others; with a common core instrument & the possibility of national addenda!)



7.2 Principal Conclusions for Practice & Policy

1. HL has to be **monitored** regularly for purposes of **diagnosis** of problems / deficits and **evaluation** of interventions
2. **Limited health literacy** has to be tackled by policy and practice in a systematic and sustainable way, adapted to regional differences
3. **Interventions** have to be directed at improving **personnel competences** of individuals and groups by measures of education and training (for **users** and **providers**)
4. Equally, if not more important are **interventions** directed at **improving** user friendliness. (transparency, readability, navigability) of **systems, services and products**
5. To effectively tackle **inequalities**, specifically designed programs oriented at improving equity are needed.
6. For supporting **vulnerable groups** specific compensatory, empowering measures (especially in health care/by health professionals) are mandatory.



7.3. The Health Literate Organization



„A health literate organization makes it easier for people to navigate, understand, and use information and services to take care of their health.”
(Brach et al. 2012)



8. REFERENCES



8. References

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Thank you for your attention!

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