M-POHL
Action Network on Measuring Population and Organizational Health Literacy of EHII - WHO-Europe

HLS19
Health Literacy Survey 2019
a project of M-POHL

Coordinated by: Gesundheit Österreich GmbH
WHO Collaborating Centre for Health Promotion in Hospitals and Health Care

The HLS19-COM-P Instrument to measure Communicative Health Literacy with Physicians in Health Care Services

Development of the Instrument

The HLS19-COM-P instrument is a newly developed questionnaire measuring communicative health literacy (HL) with physicians in health care services in general adult populations by a longer 11-item and shorter 6-item version. The HLS19-COM-P is part of the HLS19 family of instruments on measuring HL.

It was developed by a working group of HLS19 (Health Literacy Population Survey 2019-2021) Consortium. HLS19 is the first project of the WHO Action Network on Measuring Population and Organizational Health Literacy (M-POHL; https://m-pohl.net), coordinated by the HLS19 International Coordination Centre (ICC).

The HLS19-COM-P was applied in large samples using different data collection methods in nine countries participating in the HLS19 study: Austria, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, and Slovenia.

Underlying definition of communicative HL: Communicative HL refers to patients' communicative and social skills that enable them to actively engage in face-to-face encounters with health care professionals, to give and seek information, derive meaning from it and apply this information in decision-making and in co-producing their health care. In HLS19, attention was focused on physician-patient communications in this regard.

Underlying concept of operationalization: The instrument HLS19-COM-P is based on a theoretical framework that integrates the idea of communicative HL of Nutbeam (2000), the basic competencies of information processing according to the HL framework of the HLS-EU Consortium (Sørensen et al. 2012) and the main communicative tasks of the Calgary-Cambridge Guide framework (Silverman et al. 2013), (cf. The HLS19 Consortium of the WHO Action Network M-POHL 2021: Chapter 11). Indicators were rated by a four-point Likert scale concerning the experienced difficulty of each task. As such, the HLS19-Q12 is a 'subjective' perception-based instrument (Sørensen et al. 2013).

Developed and validated for measuring communicative HL in general national resident's adult populations aged 18+.

Available languages: Bulgarian, Czech, Danish, Dutch, English, French, German, Hungarian and Slovenian.

Description of the instrument

Introductory question[1] and items in the English (original) version

"On a scale from very easy to very difficult, how easy would you say it is for you…

1. … to describe to your doctor your reasons for coming to the consultation?
2. … to make your doctor listen to you without being interrupted?
3. … *to explain your health concerns to your doctor?*
4. … *to get enough time in the consultation with your doctor?*
5. … *to express your personal views and preferences to your doctor?*
6. … to get the information you need from your doctor?
7. … to understand the words used by your doctor?
8. … *to ask your doctor questions in the consultation?*
9. … *to be involved in decisions about your health in dialogue with your doctor?*
10. … *to recall the information you get from your doctor?*
11. … to use the information from your doctor to take care of your health?"

Items marked in italics are included in the short version.

Response categories: 4 "Very easy", 3 "Easy", 2 "Difficult", 1 "Very difficult", 999 "DK / Refusal (SPONTANEOUS)", where the latter is only used in interviews.

Calculation of the score: The communicative HL score is calculated as the percentage (ranging from 0 to 100) of items with valid responses that were answered with "very easy" or "easy" provided that at least 80 % of the items contain valid responses:

$$\frac{\text{Number of "easy" or "very easy" responses}}{\text{Number of valid responses}} \times 100$$

If less than 80 % of the items contain valid responses, the score is set to "missing". A higher score value signifies a higher level of communicative HL.

Interpretation of the score: Users should keep in mind that the HLS_{19}-COM-P-Q11 and HLS_{19}-COM-P-Q6 scores measure difficulties of tasks in the interaction of personal abilities and contextual factors related to the health system of the respective country.

Psychometric Properties

In the following, the main characteristics of the HLS_{19}-COM-P in nine country-specific samples (general adult populations, i.e., 18 years or older) are summarized. Further below, the Cronbach's alpha coefficients and the results of confirmatory factor analyses, Partial Credit Models and Rasch analyses are shown.

[1] This wording was used in personal interviews (CAPI/PAPI) and online surveys (CAWI). In telephone interviews (CATI), the question was: "On a scale from very easy, easy, difficult, and very difficult, how easy would you say it is …"

Table 1: Main characteristics of the national HLS19 surveys

Country	Languages	Type of data collection	Sampling procedure	Item set	Period of data collection	Valid responses
Austria	German	CATI	Multi-stage random sampling	Q11	16.03.2020–26.05.2020	2,967
Belgium	Dutch, French	CAWI	Quota sampling	Q6	30.01.2020–28.02.2020 and 01.10.2020–26.10.2020	1,000
Bulgaria	Bulgarian	CAPI, CAWI	Proportional stratified sampling and random quota sampling	Q6	15.08.2020–30.11.2020 and 01.04.2021–01.06.2021	865
Czech Republic	Czech	CATI, CAWI	Random digital procedure and random quota sampling	Q6	10.11.2020–24.11.2020	1,599
Denmark	Danish	CAWI	Multi-stage random sampling	Q6	11.12.2020–05.02.2021	3,602
France	French	CAWI	Quota sampling	Q6	27.05.2020–05.06.2020 and 08.01.2021–18.01.2021	2,003
Germany	German	PAPI	Multi-stage random and quota sampling	Q11	13.12.2019–27.01.2020	2,143
Hungary	Hungarian	CATI	Multi-stage random sampling	Q6	02.12.2020–20.12.2020	1,195
Slovenia	Slovenian	CAPI, paper-and-pencil*, CAWI	Multi-stage random sampling	Q11	09.03.2020–15.03.2020 and 09.06.2020–10.08.2020	3,360

Q11 … The HLS19-COM-P-Q11 with 11 items
Q6 … The HLS19-COM-P-Q6 with 6 items

CATI Computer-assisted telephone interview
CAWI Computer-assisted web-based interview
CAPI Computer-assisted personal interview
PAPI Paper-assisted personal interview

* Paper-and-pencil was used only in 12 interviews in Slovenia

Source: HLS19 Consortium

Cronbach's alpha: For the HLS19-COM-P-Q11 the Cronbach's alpha coefficients, calculated for the dichotomised items, ranged from 0.79 (Austria) to 0.87 (Slovenia) with a mean of 0.83, whereas the Cronbach's alpha coefficients for the HLS19-COM-P-Q6 ranged from 0.69 (Austria) to 0.81 (Bulgaria) (Table 2). For details, please see Chapter 11.2.2.3 in the HLS19 report (The HLS19 Consortium of the WHO Action Network M-POHL 2021).

Single-Factor Confirmatory Factor Models by country [CFA]: The Standardized Root Mean Square Residual [SRMSR], the Root Mean Square Error of Approximation [RMSEA], the Comparative Fit Index [CFI], the Tucker-Lewis Index [TLI], the Goodness of Fit Index [GFI], and the Adjusted Goodness of Fit Index [AGFI] indicate a good model-data fit for HLS19-COM-P in all the nine surveys for the dichotomised items (Table 2). For details, please see Chapter 11.2.2.1 in the HLS19 report (The HLS19 Consortium of the WHO Action Network M-POHL 2021).

Table 2: Cronbach's alpha and Single-Factor Confirmatory Factor Analysis

Country	Cronbach's alpha	Single-Factor Confirmatory Factor Analysis		
		SRMSR	RMSEA	CFI
HLS_{19}-COM-P-Q11				
Austria	0.79	0.06	0.02	0.99
Germany	0.84	0.07	0.05	0.99
Slovenia	0.87	0.06	0.04	0.99
HLS_{19}-COM-P-Q6				
Austria	0.69	0.03	0.00	1.00
Belgium	0.80	0.04	0.02	1.00
Bulgaria	0.81	0.05	0.04	1.00
Czech Republic	0.80	0.03	0.01	1.00
Denmark	0.80	0.02	0.01	1.00
France	0.80	0.03	0.02	1.00
Germany	0.74	0.03	0.03	1.00
Hungary	0.79	0.05	0.02	1.00
Slovenia	0.80	0.02	0.02	1.00

CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMSR=Standardized Root Mean Square Residual
NOTE: These values are based on the 11(6) dichotomized items (very easy + easy vs. difficult + very difficult).

Source: HLS_{19} Consortium

Rasch Partial Credit Model (PCM): Testing data up against the unidimensional polytomous partial credit Rasch model (PCM), the overall data-model fit for the HLS_{19}-COM-P-Q6 was sufficient for data collected in Austria (CATI) and Germany (PAPI). Reducing the sample size both the HLS_{19}-COM-P-Q11 and the HLS_{19}-COM-P-Q6 display acceptable data-model fit in the remaining countries. Both the long and the short forms could be considered sufficiently unidimensional and measure one latent trait. For details, please see Chapter 11.2.2.2 in the HLS_{19} report (The HLS_{19} Consortium of the WHO Action Network M-POHL 2021).

In the nine surveys, most items could be considered relatively easy to endorse. Two items of the HLS_{19}-COM-P-Q6 tend to under-discriminate in some countries (item 4 in Bulgaria and Denmark, and item 10 in Denmark and Hungary). Some of the HLS_{19}-COM-P items display differential item functioning (DIF) for country/language. Some of the items also display DIF for various person factors, such as age and education, but there is no consistent pattern between countries.

Distribution of HLS_{19}-COM score: Most respondents perceived the majority of presented items as relatively easy, which results in a skewed distribution of score values for the nine HLS_{19} surveys.

Validity:

Content and face validity are ensured by using the theory-based model and definition of communicative HL with physicians in health care for selecting and operationalizing the included indicators.

Concurrent discriminant validity: The mean Pearson correlations indicate that the HLS_{19}-COM-P-Q11 and the HLS_{19}-COM-P-Q6 were highly correlated. The communicative HL score was moderately correlated with the general HL score in most countries. It was also moderately correlated with the navigational HL score (for details see Chapter 11.2.2.4 in the HLS_{19} report (The HLS_{19} Consortium of the WHO Action Network M-POHL 2021).

Concurrent predictive validity: In most countries participants with lower socio-economic status (perceived social status and financial deprivation) an poorer health were found to have lower communicative

HL mean scores than those with higher socio-economic status and better health- for details see chapters 11.2.4 to 11.2.6 in the HLS19 report (The HLS19 Consortium of the WHO Action Network M-POHL 2021).

Summarizing: The HLS19-COM-P-Q11 and HLS19-COM-P-Q6 were validated for four modes of data collection (PAPI, CAPI, CATI, CAWI), for several languages, in large samples collected in most cases by multistage random sampling or quota sampling procedures, with good psychometric properties and validity.

Use of the Instrument

Procedure for obtaining the instrument: The ownership of the HLS19-COM-P-Q11 and the HLS19-COM-P-Q6 rests with the HLS19 Consortium, which developed the instrument. The HLS19-COM-P-Q11 or the HLS19-COM-P-Q6 can be used by third parties for research purposes free of charge but requires a contractual agreement between the user and the ICC of the HLS19 Consortium. An application form with details on the conditions for getting permission to use the instrument is available at https://m-pohl.net/tools.

Address any questions to: The International Coordination Centre (ICC) of the HLS19 Project, located at:

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The HLS19-COM-P-Q11 and the short version HLS19-COM-P-Q6 are part of a family of instruments also measuring specific types of HL (please see https://m-pohl.net/tools):

» HLS19-Q47, HLS19-Q16 and HLS19-Q12 to measure General Health Literacy
» HLS19-NAV to measure Navigational Health Literacy
» HLS19-DIGI to measure Digital Health Literacy
» HLS19-VAC to measure Vaccination Literacy.

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The HLS_{19} Consortium of the WHO Action Network M-POHL (2021): International Report on the Methodology, Results, and Recommendations of the European Health Literacy Population Survey 2019-2021 (HLS_{19}) of M-POHL. Austrian National Public Health Institute, Vienna (https://m-pohl.net/Int_Report_methdology_results_recommendations)

A list of further publications relating to the instruments can be found at:

» https://m-pohl.net/Results
» https://m-pohl.net/HLS_Project_Publications_Presentations