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Original research article

Evaluating plain language skills among healthcare professionals in the Czech Republic: a pilot survey

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Abstract

Background: Plain language is essential for safe, patient-centred communication and supports health literacy. However, its practical use among healthcare professionals remains inconsistent.

Aim: To assess competencies in plain language use – knowledge, recognition, application, and self-efficacy – among healthcare professionals (HCPs) in the Czech Republic.

Methods: A cross-sectional online survey (11/2025–01/2026) was conducted using a 20-item questionnaire focusing on plain-language knowledge. Descriptive statistics and non-parametric tests (Kruskal–Wallis, Dunn's *post-hoc*, Shapiro–Wilk test) were applied.

Results: A total of 347 respondents participated (age 40.40 ± 11.62 yrs; 90.78% female). Mean scores were 4.69 for knowledge (0–6), 5.61 for recognition (0–6), 2.95 for application (0–4), and 9.20 for self-efficacy (0–16). Recognition skills were consistently high, while application showed greater variability, with the lowest item performance at 49%. No significant differences in knowledge or application were found across education levels. Recognition differed significantly by education ($p = 0.03$), favouring higher degrees. Applications varied by experience ($p < 0.001$), with novices outperforming more experienced groups.

Conclusion: While HCPs demonstrate strong recognition of plain language principles, gaps remain in their practical application. Targeted training focused on applied communication skills is needed to strengthen patient-centred care.

Keywords: Communication skills; Health literacy; Healthcare professionals; Patient-centred care; Plain language; Questionnaire validation

Introduction

Plain language in healthcare is a key component of safe and effective care, increasingly recognised for its role in improving health literacy and supporting patient participation in decision-making. It represents a clear, concise, and patient-centred approach that enables understanding without specialised knowledge (Beebeejaun, 2023). In contrast, poor communication can lead to misunderstandings, reduced treatment adherence, and worse clinical outcomes (Ayre et al., 2024; Dominic Savio et al., 2025), while low health literacy – often described as a "silent epidemic" – negatively impacts both population health and healthcare systems (Warde et al., 2018). Evidence shows that plain language tools improve communication and patient comprehension, typically assessed through readability indices and expert evaluation (Ayre et al., 2024; Elliott et al., 2023 Langaufova et al., 2025). It also highlights the importance of communication training for healthcare professionals. The integration of health literacy principles into nursing education is essential for strengthening communication competencies and improving patient care (Kaas et al., 2016). Although such competencies are supported in the Czech Republic at policy and educational levels, including within the Health 2030 strategy, their practical application remains insufficient, with research indicating that healthcare professionals acknowledge the importance of plain language but often struggle to apply it effectively in practice (Sagi et al., 2021).

Low health literacy and poor quality of health information represent significant barriers to informed patient decision-making, highlighting the need for clear communication by healthcare professionals (Pleskot and Rusová, 2018). Despite this recognition, there is currently no standardised instrument available to assess plain language competencies among healthcare professionals in the Czech context. This lack of validated assessment tools limits the systematic evaluation and development of communication skills in practice.

Therefore, the aim of this study was to assess healthcare professionals' competencies in using plain language, including knowledge, recognition, application, and self-efficacy. In addition, the study examined differences in these competencies according to education level, work experience, professional role, and clinical setting.

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Materials and methods

A quantitative cross-sectional study was conducted between November 2025 and January 2026 using a questionnaire survey. Data collection was carried out electronically through an online questionnaire, which was distributed within the professional community via contact persons involved in the implemented project.

Participants and settings

The study included healthcare professionals working in healthcare facilities in the Czech Republic who were directly involved in patient care and/or worked as administrative staff who educated patients. The term "Nurses" includes all types of nurses practising in the Czech Republic, based on their education (general nurses and practical nurses); "other HCPs" refers to all other bedside healthcare workers except physicians (e.g., midwives). Participants were recruited using available contacts and cooperating workplaces within the framework of the project activities.

Ethical aspects

Respondents were informed about the purpose of the study, and participation was voluntary and completely anonymous. The study was conducted in accordance with the 2024 Declaration of Helsinki (World Medical Association (2024). Respondents provided consent to participate in the study and to the analysis of anonymised data as part of the questionnaire form.

Research instrument

Data were collected using a self-designed questionnaire, focusing on the plain-language knowledge level. The questionnaire consisted of a total of 20 items divided into four sections (domains): Knowledge, Recognition, Application, and Self-efficacy (the full version of the questionnaire is available in Suppl. materials A). The instrument assesses not only theoretical knowledge but also the ability to apply it in practice and self-efficacy in using plain language, which is consistent with the recommendations of contemporary educational approaches in healthcare communication.

Content validity of the instrument followed international plain language guidelines, including Centers for Disease Control and Prevention recommendations emphasising everyday language, clear structure, and audience needs (CDC, 2025), and was supported by the Patient Education Materials Assessment Tool – PEMAT (Shoemaker et al., 2014) and the DISCERN instrument (Rees et al., 2002). The questionnaire included knowledge-, application-, and perception-based items, consistent with current approaches to assessing communication competencies, and construct validity was ensured through alignment with validated tools and established health literacy concepts.

Data coding and descriptive statistics

Participant responses were coded numerically in Microsoft Excel. For Sections A (Knowledge), B (Recognition), and C (Application), correct responses were coded as 1, and incorrect or "Unsure" responses as 0. For Section D (Self-efficacy), responses on the 5-point Likert scale (1 = Strongly disagree to 5 = Strongly agree) were retained as numeric values for item-level analyses and recorded to a 0–4 scale for total score calculation. Descriptive statistics were calculated separately for each section. For Sections A–C, item-level percentages of correct responses and total section scores (sum of item scores) were computed. For Section D, item-level mean scores and total section scores (sum of all four recorded Likert items, range 0–16) were calculated. The distribution of responses for each item and total scores was visualised using the bar charts.

Statistical analysis

The statistical analysis was performed using GraphPad Prism software (version 8.4.3, GraphPad Software Inc., San Diego, CA, USA). Data normality was assessed using the Shapiro–Wilk test. For variables that violated the assumption of normality, non-parametric tests were applied. Total scores for each section (Knowledge, Recognition, Application, and Self-efficacy) were compared across groups defined by education level, work experience, professional position, and workplace / clinical setting. Kruskal–Wallis tests were used for comparisons involving more than two groups, followed by Dunn's *post-hoc* tests with Bonferroni adjustment when the Kruskal–Wallis test indicated a significant difference. For groups with highly unequal sample sizes, only descriptive statistics, including median, interquartile range (IQR), and mean ranks, were reported. All tests were two-tailed, and a p-value < 0.05 was considered statistically significant.

Results

Characteristics of the study sample

A total of 347 respondents were included in the study. The mean age was 40.40 ± 11.62 years. The mean professional experience was 17.42 ± 12.13 years. Most of the participants were women (90.78%; n = 315). The most common education level was a bachelor's degree (32.85%; n = 114). The largest group by experience had 11–20 years of practice (26.80%; n = 93). Registered nurses were the dominant professional group (80.40%; n = 279). Most respondents worked in acute inpatient care settings (63.40%; n = 220). Detailed characteristics are shown in Table 1.

Section A – Knowledge

In the first (Knowledge) section, respondents were asked to indicate whether they agreed or disagreed with the statement (listed in Table 2 as items). Specifically, they were asked to indicate whether it was true or false. For the Knowledge Section (A), item-level correct response rates and overall section scores are summarised in Table 2 (Score: 1 = correct, 0 = incorrect). Participants' performance varied across the six items, with correct response rates ranging from 50% (Item 3) to 98% (Item 5). The mean total score for the section was 4.69 ± 1.02 out of a maximum 6 points. The frequency distribution of total Knowledge scores (Section A) is presented in Chart 1.

Section A – Knowledge scores by education levels

Normality of Knowledge section scores was assessed for each education level using the Shapiro–Wilk test, indicating non-normal distribution in all groups (p < 0.05). Therefore, non-parametric analysis was applied. Total Knowledge scores were compared across four education levels (Secondary school, College / Higher Vocational School, University – BSc., and University MSc. Level) using the Kruskal–Wallis test (Suppl. materials B, Table S1). Mean ranks decreased slightly from Secondary (190.3) to University / Graduate & Doctorate (157.8). No statistically significant difference was found among education levels (H(3) = 5.554, p = 0.14).

Table 1. Demographic and professional characteristics of participants

Variable		*n*	Age (years) Mean ± SD	Work experience (years) Mean ± SD
Total participants		347	40.40 ± 11.62	17.42 ± 12.13
	Category		Frequency (*n*)	Percentage (%)
Gender	Female		315	90.78
	Male		27	7.78
	Not specified		5	1.44
Education level	Secondary		99	28.53
	College / Higher Vocational School		45	12.97
	University / Bachelor's Degree		114	32.85
	University / Graduate & Doctorate*		89	25.65
Years of experience	Novice: 0–5 yrs		89	25.65
	Early-career: 6–10 yrs		38	10.95
	Mid-career: 11–20 yrs		93	26.80
	Late-career: 21–30 yrs		65	18.73
	Senior/Expert: 31+ yrs		62	17.87
Position	Nurses		279	80.40
	Other HCPs		57	16.43
	Physicians		11	3.17
Workplace / Clinical setting	Inpatient-Acute		220	63.40
	Inpatient-Chronic		40	11.53
	Prehospital/Outpatient		79	22.77
	Healthcare Administrative staff		8	2.30

Note: * The Graduate category includes participants with Master's-level qualifications and equivalent professional degrees (e.g., MSc, MD), while the Doctorate category includes participants with a PhD.

Table 2. Item-level correct response percentages and section mean scores for knowledge section

Section	Item	% Correct	*n*	Mean total ± SD (min. 0 max. 6)
A: *Knowledge*	1. Plain language means removing all technical terms, even when a precise medical term is needed.	61%	347	4.6 ± 1.02
	2. Using short sentences (one idea per sentence) generally helps patients understand health information.	96%	347	
	3. Passive voice is usually preferable to active voice when writing patient instructions.	50%	347	
	4. There are specialised scales for assessing the readability of a text.	67%	347	
	5. Organising information with headings and a logical sequence is part of plain-language practice.	98%	347	
	6. Explaining the reason ("why") for an action helps patient comprehension as much as giving the action itself.	97%	347	

Section A – Knowledge scores by work experience levels

Normality of Knowledge section scores was assessed for each work experience level using the Shapiro–Wilk test, indicating non-normal distribution in all groups ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Knowledge scores were compared across five work experience levels or five periods of professional experience respectively (using categories: Novice: 0–5 yrs; Early-career: 6–10 yrs; Mid-career: 11–20 yrs; Late-career: 21–30 yrs; Senior/Expert: 31+ yrs) using the Kruskal–Wallis test (Suppl. materials B, Table S2). Mean ranks showed a slight increase from Novice (156.7) to Late-career (183.0), while Early-career, Mid-career, and Senior/Expert groups had similar mean ranks (178.7–180.1). The Kruskal–Wallis test indicated no statistically significant difference in Knowledge scores across work experience levels [$H(4) = 3.961$, $p = 0.41$].

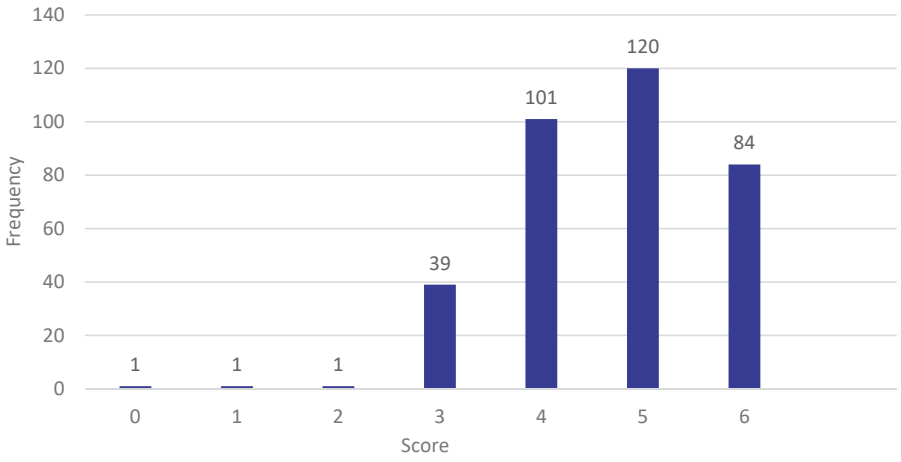

Chart 1. Frequency distribution of total scores for knowledge section (Section A)

Section A – Knowledge scores by position (Job title – profession)
In the Knowledge section scores by position (profession and job title), given the highly unequal group sizes across professional categories (Nurses, other HCPs, and Physicians), only descriptive statistics are reported. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S3. Across the three groups, the median score was 5.0. The mean ranks were 175.0 for Nurses, 173.6 for other HCPs, and 150.6 for Physicians, indicating that the overall distribution of scores was slightly higher for Nurses and other HCPs than for Physicians.

Section A – Knowledge scores by workplace / Clinical setting
In the Knowledge section scores by workplace (categorised as: Inpatient-Acute, Inpatient-Chronic, prehospital/outpatient, and Administrative), only descriptive statistics are reported due to highly unequal group sizes. The median score was 5.0 for all groups. The mean ranks, listed from highest to lowest, were 188.6 for Inpatient-Chronic, 173.3 for Outpatient, 171.9 for Inpatient-Acute, and 166.1 for Admin. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S4.

Section B – Recognition
For the Recognition section (B), item-level correct response rates and overall section scores are summarised in Table 3. Respondents were asked to identify whether the statements are in plain language or not, see in Table 3. Each item shows a short sample sentence or short paragraph; respondents should select from the following options: Plain language / Not plain language / Unsure. (The scoring was: Plain = 1 if truly plain; Not plain = 1 if truly not plain; Unsure = 0.) Participants' performance was generally high across the six above-described items, with correct response rates ranging from 88% (Item 3) to 98% (Item 4). The mean total score for the section was 5.61 ± 0.77 out of a maximum of 6 points. The frequency distribution of total Recognition scores (Section B) is presented in Chart 2.

Section B – Recognition scores by education levels
Normality of Section B Recognition scores was assessed for each education level using the Shapiro–Wilk test, indicating non-normal distribution in all groups ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Recognition scores were compared across four education levels using the Kruskal–Wallis test (Suppl. materials B, Table S5). Median scores were

Table 3. Item-level correct response percentages and section mean scores for recognition section

Section	Item	% Correct	*n*	Mean total ± SD (min. 0 max. 6)
B: *Recognition*	1. "The patient should administer 1 tablet orally twice daily to achieve therapeutic plasma levels."	92%	347	5.61 ± 0.77
	2. "Call our office if you notice bleeding, dizziness, or any signs that are unusual following the procedure."	96%	347	
	3. "A CT scan can detect many abnormalities; your clinician will review the images."	88%	347	
	4. "Take your prescribed pain medicine only as directed; do not drive if you feel sleepy."	98%	347	
	5. "Hypertension is typically asymptomatic; lifestyle modification may reduce cardiovascular risk."	90%	347	
	6. "If fever >38 °C for more than 48 hours, call the clinic."	97%	347	

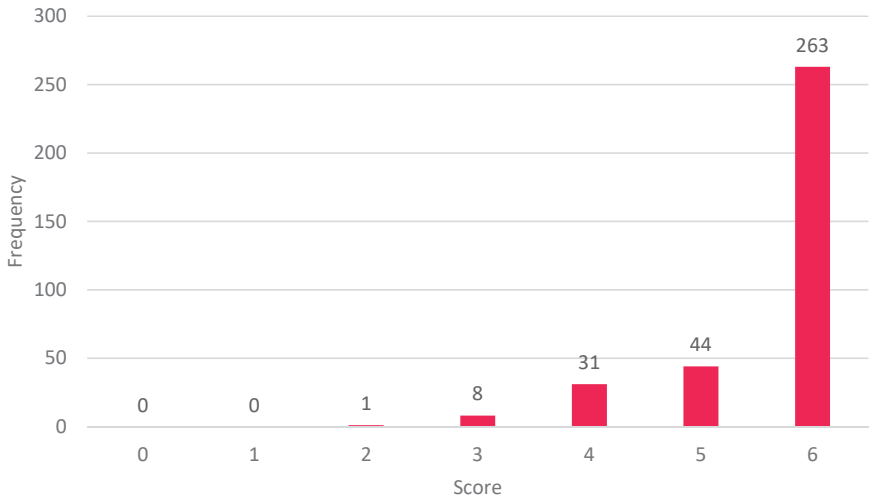

Chart 2. Frequency distribution of total scores for the recognition section (Section B)

6 across all groups, while mean ranks ranged from 159.0 for Secondary to 190.8 for University / Graduate & Doctorate. A statistically significant difference was found among education levels [$H(3) = 9.052$, $p = 0.03$]. *Post-hoc* pairwise comparisons using Dunn's test with Bonferroni adjustment revealed a statistically significant difference only between the Secondary and University / Graduate & Doctorate groups (adjusted $p = 0.02$). No other pairwise comparisons were statistically significant.

Section B – Recognition scores by work experience levels
Normality of Section B Recognition scores was assessed for each work experience level using the Shapiro–Wilk test, indicating non-normal distribution in all groups ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Recognition scores were compared across five work experience levels using the Kruskal–Wallis test (Suppl. materials B, Table S6). Median scores were 6 across all groups, while mean ranks ranged from 168.3 for Late-career to 180.5 for Novice. Early-career, Mid-career, and Senior/Expert groups had similar mean ranks (172.6–175.5). The Kruskal–Wallis test indicated no statistically significant difference in Recognition scores across work experience levels [$H(4) = 1.316$, $p = 0.86$].

Section B – Recognition scores by position (Job title – profession)
In the Recognition section scores by position, given the highly unequal group sizes across professional categories (Nurses, other HCPs, and Physicians), only descriptive statistics are reported. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S7. Across the three groups, the median score was 6.0. The mean ranks were 202.0 for Physicians, 177.2 for other HCPs, and 173.5 for Nurses.

Section B – Recognition scores by workplace / Clinical setting
In the Recognition Section scores by workplace / clinical setting, only descriptive statistics are reported due to highly unequal group sizes. The median score was 6.0 for all groups. The mean ranks, listed from highest to lowest, were 182.0 for Inpatient-Chronic, 173.8 for Prehospital/Outpatient, 172.7 for Inpatient-Acute, and 170.5 for Healthcare Administrative staff. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S8.

Section C – Application
For the Application section (C), item-level correct response rates and overall section scores are summarised in Table 4. Respondents have been asked to evaluate the plain language statements (Table 4) For scoring, each correctly evaluated statement = 1 point.

Participants' performance varied across the four items, with correct response rates ranging from 49% (Item 1) to 92% (Item 2). The mean total score for the section was 2.95 ± 0.91 out of a maximum of 4 points. The frequency distribution of total Application scores (Section C) is presented in Chart 3.

Section C – Application scores by education levels
Normality of Section C Application scores was assessed for each education level using the Shapiro–Wilk test, indicating non-normal distribution in all groups ($p < 0.05$). There-

Table 4. Item-level correct response percentages and section mean scores for application section

Section	Item	% Correct	*n*	Mean total ± SD (min. 0 max. 4)
C: *Application*	1. Which change is the best plain-language revision of "administer one tablet orally twice daily"?	49%	347	2.95 ± 0.91
	2. Which is a plain-language way to help a patient remember a step?	92%	347	
	3. Best approach when a technical term cannot be avoided.	85%	347	
	4. Which element is not usually part of a plain-language checklist?	69%	347	

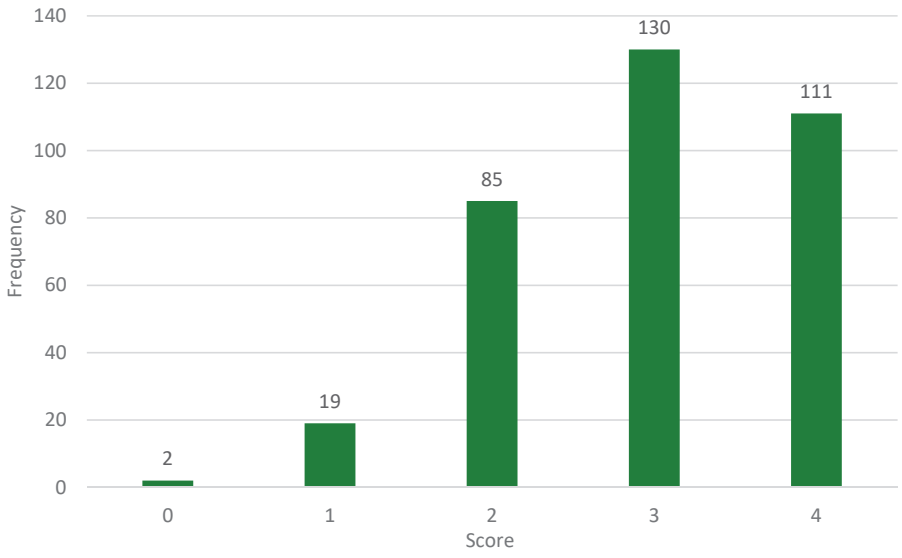

Chart 3. Frequency distribution of total scores for application section (Section C)

fore, non-parametric analysis was applied. Total Application scores were compared across four education levels using the Kruskal–Wallis test (Suppl. materials B, Table S9). Median scores were 3 across all groups, while mean ranks ranged from 153.4 for Secondary to 184.9 for University / Bachelor's Degree. The Kruskal–Wallis test indicated no statistically significant difference in Application scores across education levels [$H(3) = 6.662$, $p = 0.08$].

Section C – Application scores by work experience levels
Normality of Section C Application scores was assessed for each work experience level using the Shapiro–Wilk test, indicating non-normal distribution in all groups ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Application scores were compared across five work experience levels using the Kruskal–Wallis test (Suppl. materials B, Table S10). Median scores were 3 across all groups, while mean ranks ranged from 150.6 for Mid-career to 208.0 for Novice. Early-career, Late-career, and Senior/Expert groups had mean ranks of 189.2, 174.1, and 150.8, respectively. The Kruskal–Wallis test indicated a statistically significant difference in Application scores across work experience levels [$H(4) = 21.64$, $p < 0.001$]. *Post-hoc* pairwise comparisons using Dunn's test with Bonferroni adjustment revealed statistically significant differences between Novice and Mid-career (adjusted $p < 0.001$), and between Novice and Senior/Expert groups (adjusted $p = 0.003$). No other pairwise comparisons were statistically significant.

Section C – Application scores by position (Job title – profession)
In the Application section scores by position, given the highly unequal group sizes across professional categories (Nurses, other HCPs, and Physicians), only descriptive statistics are reported. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S11. Across the three groups, the median score was 3.0. The mean ranks were 183.9 for other HCPs, 172.1 for Nurses, and 171.5 for Physicians.

Section C – Application scores by workplace / Clinical setting
In the Application section scores by workplace / clinical setting, only descriptive statistics are reported due to highly unequal group sizes. The median score was 3.0 for all groups. The mean ranks, listed from highest to lowest, were 179.5 for Inpatient-Acute, 176.5 for Inpatient-Chronic, 176.4 for Healthcare Administrative staff, and 157.1 for Prehospital/Outpatient. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S12.

Section D – Self-efficacy
For the Self-efficacy section (D), item-level mean scores and overall section scores are summarised in Table 5. The participants evaluated four statements/items (Table 5) using the Likert scale (1 = strongly disagree, 5 = strongly agree). The mean total score was 9.20 ± 2.62 on the recoded 0–16 scale. The frequency distribution of individual Self-efficacy items (Section D) is presented in Chart 4.

Table 5. Item-level mean scores, standard deviations, and section mean scores for self-efficacy section

Section	Item	% Correct	*n*	Mean total ± SD (min. 0 max. 16)
D: *Self-efficacy*	1. I know how to replace medical jargon with everyday words.	3.84 ± 0.78	347	9.20 ± 2.62
	2. I can organise discharge instructions so patients understand the first time.	3.81 ± 0.82	347	
	3. I feel confident teaching colleagues how to write in plain language.	3.44 ± 0.99	347	
	4. I am aware of tools (e.g., readability formula, PEMAT, DISCERN, plain-language checklists) to evaluate patient materials.	2.10 ± 1.19	347	

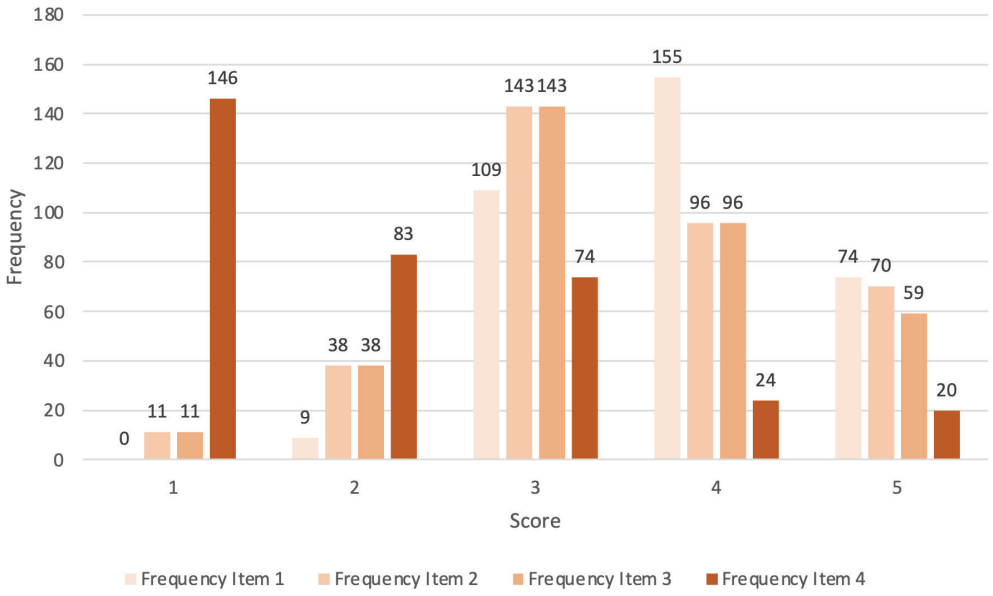

Chart 4. Frequency distribution of individual self-efficacy items (Section D) – see items description in Table 5

Section D – Self-efficacy scores by education levels
Normality of Section D Self-efficacy scores was assessed for each education level using the Shapiro–Wilk test. The assumption of normality was not met for all groups, as some groups showed significant deviation from normal distribution ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Self-efficacy scores were compared across four education levels using the Kruskal–Wallis test (Suppl. materials B, Table S13). Median scores were 9 across all groups, while mean ranks ranged from 167.1 for University / Bachelor's Degree to 178.2 for Secondary. The Kruskal–Wallis test indicated no statistically significant difference in Self-efficacy scores across education levels [$H(3) = 0.8262$, $p = 0.84$].

Section D – Self-efficacy scores by work experience levels
Normality of Section D Self-efficacy scores was assessed for each work experience level using the Shapiro–Wilk test. The assumption of normality was not met for all groups, as some groups showed significant deviation from normal distribution ($p < 0.05$). Therefore, non-parametric analysis was applied. Total Self-efficacy scores were compared across five work experience levels using the Kruskal–Wallis test (Suppl. materials B, Table S14). Median scores ranged from 8 for Novice to 10 for Early-career and Mid-career groups, while mean ranks ranged from 135.0 for Novice to 196.9 for Mid-career. Early-career, Late-career, and Senior/Expert groups had mean ranks of 196.7, 182.4, and 172.9, respectively. The Kruskal–Wallis test indicated a statistically significant difference in Self-efficacy scores across work experience levels [$H(4) = 21.04$, $p < 0.001$]. *Post-hoc* pairwise comparisons using Dunn's test with Bonferroni adjustment revealed statistically significant differences between Novice and Early-career (adjusted $p = 0.01$), Novice and Mid-career (adjusted $p < 0.001$), and Novice and Late-career groups (adjusted $p = 0.04$). No other pairwise comparisons were statistically significant.

Section D – Self-efficacy scores by position (Job title – profession)
In the Self-efficacy section scores by position, given the highly unequal group sizes across professional categories (Nurses, other HCPs, and Physicians), only descriptive statistics are reported. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S15. Across the three groups, the median score was 9.0 for Nurses, 8.0 for other HCPs, and 10.0 for Physicians. The mean ranks were 185.4 for Physicians, 177.0 for Nurses, and 157.1 for other HCPs.

Section D – Self-efficacy scores by workplace / Clinical setting
In the Self-efficacy section scores by workplace / clinical setting, only descriptive statistics are reported due to highly unequal group sizes. The median scores were 9.0 for Inpatient-Acute, 9.5 for Inpatient-Chronic, 9.0 for Prehospital/Outpatient, and 9.0 for Healthcare Administrative staff. The mean ranks, listed from highest to lowest, were 199.1 for Inpatient-Chronic, 186.6 for Prehospital/Outpatient, 165.3 for Inpatient-Acute, and 164.1 for Healthcare Administrative staff. Detailed descriptive statistics for each group are presented in Suppl. materials B, Table S16.

Discussion

The study assessed healthcare professionals' competencies in plain language (knowledge, recognition, application, and self-efficacy) and examined differences by education, experience, role, and setting. The mean age was 40.40 years and the mean clinical practice 17.42 years, indicating a predominantly experienced sample, with nearly one fifth reporting over 31 years of practice. This may reflect the ageing healthcare workforce, a growing concern across OECD countries (OECD, 2025), alongside increasing demands for health and social care.

A high proportion of respondents had university education, reflecting the professionalisation of healthcare and its emphasis on tertiary training, which may enhance care quality and competencies. Most participants were registered nurses working in acute inpatient settings, the largest professional group in healthcare systems (WHO, 2025), which may have influenced results due to higher workload and psychological demands. A limitation is the unequal representation of professions, particularly the low proportion of physicians (3.17%).

The findings indicate that competencies are uneven: recognition of plain language is high, whereas its application and self-efficacy show greater variability.

Knowledge and its limitations

In the knowledge domain, respondents achieved a relatively good result (mean = 4.69 ± 1.02 out of 6). This suggests that the basic principles of plain language are to some extent known among healthcare professionals. However, considerable variability across items (50–98% correct responses) indicates an uneven understanding of specific aspects. This is particularly evident in stylistic principles, such as the use of active versus passive voice. An important finding is the absence of statistically significant differences according to education level and work experience. This suggests that knowledge of plain language is not systematically developed through formal education or clinical practice. This finding is consistent with previous studies, which highlight the insufficient integration of plain language principles into healthcare curricula (Mrduljaš Đujić et al., 2013; Sagi et al., 2021).

Recognition vs. application

Respondents achieved very high results in the recognition of plain language (mean = 5.61 ± 0.77). This confirms that healthcare professionals are able to identify appropriately formulated messages. This finding is consistent with theoretical models of health literacy. In contrast, performance in the application domain was substantially lower (mean = 2.95 ± 0.91 out of 4). Some items reached only 49% of correct responses. This gap between "knowing" and "doing" is a key finding and indicates a competence gap. Similar differences between declarative knowledge and practical skills have been reported in previous studies focusing on communication training in healthcare (Ayre et al., 2024). This discrepancy may reflect insufficient practical training. While recognition of correct communication can be acquired passively (e.g., through reading materials), active application requires targeted practice, feedback, and repetition (Abel and Bäuml, 2020).

Effects of education and work experience

Education did not play a significant role in most of the assessed domains. However, a statistically significant difference was found in the recognition domain between participants with secondary education and those with the highest academic degrees ($p = 0.03$). This finding suggests that higher education may improve the ability to critically evaluate text, but not necessarily its practical production. In contrast, work experience had a significant effect on both application and self-efficacy. Younger professionals (0–5 years of experience) achieved higher application scores than more experienced groups ($p < 0.001$). This may reflect more recent education or greater openness to new communication approaches among younger respondents. For self-efficacy, higher scores were observed among more experienced professionals ($p < 0.001$). This may indicate a discrepancy between objective performance and subjective perception of competence. This phenomenon is often described in the literature as overconfidence bias in clinical practice (Al-Maghrabi et al., 2024).

Self-efficacy and awareness of assessment tools

Self-efficacy among respondents was moderate (mean = 9.20 ± 2.62 on a 0–16 scale). Lower scores were observed for knowledge of evaluation tools, indicating limited awareness of instruments used to assess communication quality and a potential barrier to implementing plain language in clinical practice. Similar findings have been reported internationally, highlighting the need for skill development and systematic integration of readability assessment tools (Ayre et al., 2024, 2025). These results underscore the need for targeted educational interventions, including the systematic inclusion of plain language principles in healthcare training, increased awareness of tools such as readability indices and checklists, and support for reflection and feedback in communication practice. Overall, the findings align with patient-centred care and health literacy trends that emphasise clear communication as a key professional competency.

Conclusion

This pilot study provides insight into the level of competencies in plain language among healthcare professionals in the Czech Republic. The findings confirm that, although healthcare professionals possess basic knowledge and are able to recognise clear communication, their ability to actively apply these principles is limited. The results mainly reflect the experiences of registered nurses working in inpatient care. Therefore, generalisation to the wider range of healthcare professions should be made with caution. Overall, the findings provide a basis for the development of targeted educational programmes at the national level. Such programmes could improve communication quality in healthcare and, consequently, patient outcomes.

Author contributions statement

AP: conceptualisation, methodology, data curation, formal analysis, investigation, supervision, validation, writing – original draft, writing – review and editing. *PB:* conceptualisation, methodology, validation, writing – original draft, writing – review and editing. *DD:* writing – original draft, review and editing. *NB:* writing – review and editing. *AB:* formal analysis, writing – original draft, writing – review and editing.

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Conflict of interest

The authors have no conflict of interest to declare.

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