


BMJ Open Establishment of a communication environment supporting low-health literacy in the Hungarian community pharmacies: the introduction of a methodological recommendation: a before–after study

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ABSTRACT

Objectives The research aimed to support the effectiveness and necessity of the communication training and methodology introduced in the postgraduate pharmacy training and community pharmacy practice in Hungary.

Design Two cross-sectional questionnaire surveys before and after the introduction of a methodological recommendation.

Setting 69 Hungarian community pharmacies.

Participants The study included 333 pharmacists and pharmacy technicians from community pharmacies, 890 and 847 patients (over 18 who bought their prescribed medication) at the beginning and the end of the project, respectively.

Interventions A 3-day postgraduate health literacy-focused communication training followed by the ‘Train the trainer’ teaching method at pharmacies, then the introduction of the learnt methodology using uniform information materials and a communication checklist.

Primary and secondary outcome measures Primary: total score of the staff and patient questionnaires and the change in score due to the intervention, total and for each question. Secondary: the differences between sexes, age groups, marital statuses, educational attainments and types of settlement.

Results The mean score of the preintervention patient group was 64.07% which increased to 72.72% by the end of the project ($p<0.001$). For staff, the mean score of the initial questionnaires was 74.47%, and that of the final questionnaires was 85.21% ($p<0.001$). According to both groups, professionals made the most progress in encouraging patients to ask questions.

Conclusions It can be stated that the presented methodology can be used to develop the communication skills of a large number of professionals in a short time, using a small number of instructors, so it is worthwhile to introduce this methodology as part of compulsory postgraduate training.

Strengths and limitations of this study

- The project had almost nationwide coverage, including many professionals and patients.
- The success of the intervention was confirmed by two different questionnaires (patients and staff).
- Lack of control groups (other professionals who did not receive education and did not apply the methodology, and their patients).
- Selection bias: no randomisation was used in the professional, pharmacy and patient enrolment method.
- The questionnaires used were self-developed, based on experience from previous projects.

INTRODUCTION

Pharmacy and pharmacy practices have evolved around the world in response to changes in the environment around the profession and the needs of patients. The emphasis on drug distribution and preparation is shifting towards patient-centred care and counselling, where pharmacists assess the necessity, efficiency and safety of patients’ medications and ensure that patients understand their therapies and monitor changes in their condition.^{1–6} This is facilitated by several factors. In the current healthcare setting, community pharmacies are the most accessible healthcare providers for patients.⁷ It has been stated that patients are more willing to talk to their pharmacist than to doctors about their illness,⁸ which make the pharmacists the ‘first port of call’ of the healthcare system.^{7 9 10} These types of pharmacy services can have many benefits: they can improve the health of patients through drug therapy and

patient adherence management,¹¹ contribute to reducing morbidity, mortality and health costs.¹²

Patient-centred and consultative community pharmacy services such as medication review, adherence improvement or health promotion require pharmacists to have strong communication skills,¹³ thus ensuring the optimal exchange of information and that patients are fully participating in their care.^{14–17}

Pharmacists' communication has to adapt to different patients' needs to achieve patient centricity,¹⁸ with particular regard to the different levels of their health literacy.

Health literacy 'refers to those personal, cognitive and social skills that determine the ability of individuals to obtain, understand and use basic health information and all services aimed at promoting and maintaining a healthy lifestyle'.^{6 19 20} According to a survey, 47% of the patients have poor health literacy²¹; this proportion is 52% in Hungary.²² On this basis, pharmacists must provide clear and easily understandable information on the correct use of medicines to prevent, protect and improve patient health so that patients can make the most of it.²³ In its 1997 report, the WHO made it clear that the future pharmacists should be effective communicators, focusing on open information exchange and patient involvement in treatment decision-making.^{14 16 23 24} Pharmacist counselling rates vary worldwide from 8% to 100%²⁵; moreover, according to a survey, 40%–80% of the information provided by health professionals is immediately forgotten by patients, while nearly half of the information are poorly remembered.²⁶ Inadequate and inaccurate communication, self-medication and poor health literacy can easily lead to misunderstanding of medical recommendations and deviations from the prescribed treatment regimen.²³ Also, it can have a negative effect on pharmacists, as poor communication can lead to a deterioration in their judgement and a loss of confidence in pharmacists' knowledge.^{6 27} In contrast, a pharmacist who is capable of effective patient-centred communication can work to improve patient adherence and health outcomes,²⁸ and can also increase patient satisfaction.^{4 6 29} However, to achieve all these goals, it is essential that both graduate and postgraduate training of pharmacists be adapted to changing needs. Various international pharmacist competence frameworks emphasise communication as the core competency of pharmacists.^{30–34} However, these requirements are not always met in practice.^{17 18 35 36} Education and training can improve the communication skills of pharmacists,^{16 37–39} which are needed by both pharmacy students and graduated pharmacists.⁴⁰

In Hungary, two types of professional workers exist in the community pharmacies: pharmacists and pharmacy technicians. Pharmacists receive a degree after 5 years at university, while the training of pharmacy assistants lasts for 2 years. Pharmacy technicians may perform everything only under the supervision of a pharmacist. They also play a significant role in communication with the patient and drug dispensing. Only a pharmacist can

dispense the medicine in some special cases (eg, interaction, side effect) regulated by law.

The healthcare institutions that cover the country most evenly are the community pharmacies operating as part of the primary care. There are about 2900 community pharmacies in Hungary, where more than 60 million pharmacist–patient meetings take place every year. The majority of patients visit pharmacies for two reasons: (1) to get a drug prescribed by a general practitioner or a specialist; (2) to seek advice on relieving their mild symptoms. During a consultation, pharmacists or pharmacy technicians dispense the prescribed drug or recommend an over-the-counter medication for the patient's symptoms. In both cases, they have to properly describe the use of medicines, for which the use of appropriate communication techniques is essential. However, during their normal programme of education, pharmacy technicians currently receive no, while pharmacists receive minimal communication training (a 3 hours lesson in the last year), so the effective and wide-ranging postgraduate training for professionals who have already graduated is crucial.

The research aimed to support the effectiveness and necessity of the communication training and methodology introduced in the postgraduate pharmacy training and community pharmacy practice in Hungary.

METHODS

The research in general

The research was conducted between January 2017 and June 2017. The implementation was carried out under the guidance of the pharmacists participating in Semmelweis University postgraduate specialist training (3-year specialisation training for graduated pharmacists), with the participation of pharmacists and pharmacy technicians they included (no financial compensation was granted) from their workplace (Hungarian community pharmacies accredited at Semmelweis University (the largest of the four universities training pharmacists in Hungary, located in Budapest, offering both graduate and postgraduate training)). No randomisation was used in the selection of pharmacists, pharmacy technicians and community pharmacies included: 73 pharmacists took place in the postgraduate training, all the other participating professionals were the colleagues, while the pharmacies where the research took place were the workplaces of these pharmacists.

The description of the project

The flow chart of the project is shown in figure 1. At the beginning of the project, graduated pharmacists participating in the postgraduate specialist training took part in a 3 days training course at Semmelweis University. They received training on health literacy, appropriate pharmacist–patient communication techniques, domestic conditions, factors behind poor health literacy and its consequences, they also learnt about the potential of

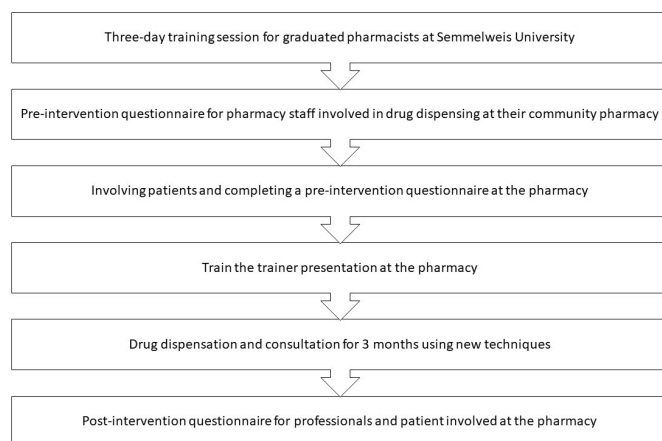


Figure 1 The flow chart of the project.

pharmacies to improve health literacy. Project requirements, methodology and questionnaires were described (see ‘Communication tools in the pharmacies’).

Table 1 Characteristics of patients surveyed in the project (data numbers (n) other than ‘the number of patients surveyed’ are due to occasional deficiencies in data collection; ‘other’ marital status: divorced, short-term relationship or the patient cannot define it)

| | Preintervention | Postintervention |
|---|-----------------|------------------|
| The number of patients surveyed: | 890 | 847 |
| Sex | n=871 | n=830 |
| Male | 42.3% | 43.6% |
| Female | 57.7% | 56.4% |
| Age | n=887 | n=839 |
| 18–25 years | 12.0% | 12.5% |
| 26–40 years | 25.8% | 25.4% |
| 41–65 years | 37.4% | 38.0% |
| 65 years– | 24.8% | 24.1% |
| Marital status | n=876 | n=835 |
| Other | 2.4% | 1.8% |
| Single | 23.7% | 22.8% |
| Widowed | 19.5% | 18.8% |
| Married/long-term relationship | 54.4% | 56.6% |
| Educational attainment | n=876 | n=817 |
| Primary school | 7.0% | 8.6% |
| Vocational school | 24.0% | 23.1% |
| Baccalaureate | 34.3% | 35.7% |
| University | 34.7% | 32.6% |
| Type of settlement | n=889 | n=846 |
| Villages | 3.4% | 3.6% |
| Other cities | 40.8% | 40.5% |
| County towns | 9.7% | 10.4% |
| Capital city | 46.1% | 45.5% |

In the next step, pharmacists used a questionnaire to assess the opinions of technicians and pharmacists at their workplace about how well they think they communicate with patients in a manner appropriate to the level of patients’ health literacy (see ‘Staff questionnaire’).

At the same time, patients over 18 who bought their prescribed medication were enrolled. After the consultation, patients were asked by a professional other than the dispensing technician or pharmacist, and the patients could voluntarily decide whether or not to participate in the survey. Randomisation was not used, the staff of the pharmacy had to involve about 15 patients in overall at the beginning and the end of the project. All patients surveyed were fully informed and then completed a questionnaire on the quality of the pharmacy staff’s communication (see ‘Patient questionnaire’). The language of the questionnaires was Hungarian, which is the only official language in Hungary. The Hungarian language of the questionnaire was written with the help of communication experts (MSD Pharma Hungary, Institute of Behavioural Sciences (Semmelweis University)) to fit the comprehension skills of the Hungarian society. In the next step, the pharmacists participating in the post-graduate training course educated their colleagues (train the trainer presentation⁴¹) on health literacy and appropriate communication techniques through a 30 min presentation prepared by professionals (Institute of Behavioural Sciences, Semmelweis University). All pharmacy colleagues who voluntarily participated in the research were required to attend the lecture. Pharmacy staff used the appropriate communication techniques (see ‘Communication tools in the pharmacies’) for 3 months with each patient entering the pharmacy, then the opinion of staff and patients (other than patients enrolled at the beginning of the project) was resurveyed using the same questionnaires, investigating the development of the pharmacies’ communication.

Communication tools in the pharmacies

The participating pharmacies received a self-developed communication package, which included a ‘communication checklist’ (online supplemental annex 1), with eight basic communication tips for good consultation practice, and an ‘Ask your pharmacist!’ poster (online supplemental annex 2), which was displayed in the participating pharmacies. Also, the participating pharmacies received written patient information leaflets, which were given to patients in the framework of the project (Ask your pharmacist—patient information leaflet-online supplemental annex 3).

Patient questionnaire

The English transcription of the patient questionnaire is included in online supplemental annex 4. The questionnaires were completed on paper, either in interviews or individually, and were conducted each time by a professional other than the person conducting the consultation. The questionnaire and scoring system were self-developed

Table 2 Results of patient questionnaires (data numbers (n) other than 'the number of patients surveyed' (see table 1) are due to occasional deficiencies in data collection; p values were determined using variance analysis and t-tests)

| Questions | Values of points available for the question | Mean preintervention score (point) n=889 | Mean postintervention score (point) n=846 | Mean change (point) | Mean change (%) | P value |
|--|---|--|---|---------------------|-----------------|------------------|
| 1. Did the pharmacist or pharmacy technician use complicated terms or expressions during the consultation? | 0/1/4 point(s) | 2.94 | 3.31 | +0.37 | +9.09 | <0.001 |
| 2. Did the pharmacist or pharmacy technician encourage you to ask questions during the consultation? | | 2.35 | 3.05 | +0.70 | +17.58 | <0.001 |
| 3. Did your pharmacist or pharmacy technician emphasise the important information orally, with written help or graphics? | | 3.13 | 3.52 | +0.39 | +9.77 | <0.001 |
| 4. How easy or difficult was it for you to understand the instructions given by your pharmacist or pharmacy technician on how to take/use the prescribed medication? | 0–4 point(s) | 3.06 | 3.29 | +0.23 | +5.75 | <0.001 |
| 5. How much do you feel you know all the important information about your medicines? | | 2.04 | 2.26 | +0.22 | +5.58 | 0.002 |
| 6. How do you see your state of health? | | 1.86 | 2.02 | +0.16 | +4.16 | 0.027 |
| Total | 24 points | 15.38 | 17.45 | +2.07 | +8.65 | <0.001 |

by communication experts from MSD Pharma Hungary, Institute of Behavioural Sciences (Simmelweis University), and pharmacists, based on previous experience (Crystal Clear Pharmacy Program, Ireland).⁴²

The questionnaires were completed anonymously and voluntarily. In addition to sex, age, marital status and educational attainment, patients receive six questions, including three simple choice questions (question 1–3; yes/no/don't know), and three scaling questions (question 4–6; 5-point scale). To find out what patients think about pharmacists' communications overall, the responses were converted into scores (see online supplemental annex 4). The scoring system was self-developed developed to measure the development of the participants' communication skills in each targeted question and overall. The value of the points and the decisive nature of the examination questions determining the total score were decided based on professional considerations. In the case of simple choice questions (questions 1–3), positive answers for health literacy were 4 points, negative answers 1 and neutral ('don't know') answers 0 points. In the case of questions 4–6, patients were

able to choose from 5 options, of which the neutral and don't know answers were 0 points, the other answers were 1–4 points, where 4 were the most positive answers. A total of 24 points were thus obtained.

Staff questionnaire

The staff questionnaire is included in online supplemental annex 5. The questionnaires were completed on paper and were filled independently, anonymously. The professionals only had to indicate the type of settlement where the pharmacy was located, and then they had to answer five questions, each of them was rated 1–5 according to how typical the given statement was (1—not at all, 5—very characteristic). A total of 25 points were thus obtained. The scoring system used for evaluation (see online supplemental annex 5) was self-developed; thanks to the collaborations described above (Crystal Clear Pharmacy Programme).⁴²

Ethics approval

The survey complied with Hungarian legal requirements (the pharmacy service was completely free and

non-invasive).^{43–46} Verbal informed consent was obtained from all participants in the pharmacies (General Data Protection Regulation (GDPR) decree not yet enacted); no written consent was required according to the Act No. CLIV of 1997 on (non-invasive pharmacy service and questionnaire survey).^{43 47} Informed consent was taken from the community pharmacies. The study was conducted as a free service of licensed pharmacies, with the voluntary and fully informed participation of patients. The services were provided by graduated pharmacists with licensed pharmacy technicians. The processing of the data was carried out in accordance with the Hungarian legal requirements at that time.⁴³ The collected data were forwarded to the authors without any personal data for processing the results. The personal and health records of the patients included in the study were kept anonymous.

Statistical analysis

After descriptive statistical analysis, data composition, staff and patient questionnaires were examined for each question, total scores and degree of change in normal distribution by variance analysis and t-tests. The normality was checked by the Kolmogorov-Smirnov test. Subgroups of the two different populations were compared using the χ^2 test. The χ^2 test and the Kruskal-Wallis test were used to compare participants' total scores for each gender, age group, educational attainment, marital status and settlement type. Bonferroni and Scheffe tests were used to determine which group mean was significantly different from others. The significance level was set at 5%. Statistical calculations were performed using SPSS V.20.0 (SPSS, Chicago, Illinois, USA).

Patient and public involvement

Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

RESULTS

Characteristics of surveyed pharmacies and patients

Postgraduate education was attended by 73 pharmacists from 69 pharmacies. A total of 333 professionals participated in the whole project. The survey was close to national coverage; 14 out of 20 counties in the country (including the capital city, Budapest) had a participating pharmacy. Of the staff working in pharmacies, most took part in the project in 'other cities' (44.7%) and in the capital (43.5%), while a smaller proportion worked in pharmacies located in county towns (8.4%) or village (3.3%). Table 1 shows the patients enrolled: 890 and 847 patients participated at the beginning and end of the project, respectively.

Results of the patient questionnaire

The preintervention and postintervention groups consisted of two different patient populations. Subgroups of these two different populations were compared using

the χ^2 test and they were statistically significantly equal ($p>0.05$; sex: $p=0.569$; age: $p=0.962$; marital status: $p=0.676$; educational attainment: $p=0.555$; type of settlement: $p=0.958$). The mean score of the preintervention patient group was 15.38 (SD=4.89) points, which corresponds to 64.07%. At the end of the project, patients other than this patient population completed the questionnaire, their mean score was 17.45 (SD=4.07) points, which is 72.72% of the total score, showing a significant ($p<0.001$) improvement of 8.65% (+2.07 points) between the two questionnaires. The improvement in the score of each question during the project has been examined, and these results are included in table 2 (maximum of 4 points per question). There was a significant improvement in all questions: the greatest was found in Question 2 (+17.58%). Questions 1 and 3 showed an improvement of 9.09% and 9.77%, respectively, while the mean score of questions 4–6 improved by 4%–5% (table 2).

The improvement of the total score of each subpopulation has been analysed to identify the groups of patients more or less affected by the project (table 3). The results showed that there was no significant difference between women and men ($p>0.05$). The total score of patients older than 40 years developed significantly more than those under 40 years ($p<0.001$). Also, the development of widows ($p<0.02$) and residents of county seats ($p<0.02$) were significantly higher. In contrast, patients with university degrees improved less ($p=0.02$).

Results of the staff questionnaire

The mean total score of the preintervention questionnaires was 18.61 points (SD=2.97; 74.47%) out of 25, with an average of 3.72 points per question. The results of the repeated questionnaires at the end of the project were 21.30 points (SD=2.32; 85.21%), which is 2.69 points (0.54 points per question), 10.74%, significant increase ($p<0.001$). Examining the individual questions, it can be stated that the mean score of all questions increased significantly by the end of the project ($p<0.001$), the greatest improvement was in the case of question 4 and the least in the case of question 1 (table 4).

In results of the statistical analysis show that the results of professionals working in the county towns or the capital improved significantly more ($p<0.02$; table 5).

DISCUSSION

Nowadays, in Hungary, neither pharmacy students nor pharmacy technician students receive adequate communication training. As a result, the communication skills of drug dispensing staff working in community pharmacies do not meet the current international requirements of the field.

This phenomenon is also supported by the results of the preintervention questionnaires. The relatively high 74.47% mean preintervention score from staff questionnaires indicate that pharmacy staff does not consider their communication skills to be poor, which does not fully

Table 3 Change in the score for each patient subpopulation (bold: subpopulation with significantly higher improvement; n(preintervention): preintervention questionnaire data number; n(postintervention): postintervention questionnaire data number; data numbers (n) other than 'number of patients surveyed' (see table 1) are due to occasional deficiencies in data collection; p values were determined using χ^2 test and the Kruskal-Wallis test)

| Sex | Mean change (point) | Mean change (%) | | | |
|---|---------------------|-----------------|---|---------------------|-----------------|
| Male n(preintervention)=368 n(postintervention)=362 | +2.02 | +8.42 | | | |
| Female n(preintervention)=502 n(postintervention)=467 | +2.10 | +8.75 | | | |
| P>0.05 | | | | | |
| Age | Mean change (point) | Mean change (%) | Marital status | Mean change (point) | Mean change (%) |
| 18–25 years n(preintervention)=106 n(postintervention)=105 | +1.39 | +5.79 | Other n(preintervention)=21 n(postintervention)=15 | +1.93 | +8.04 |
| 26–40 years n(preintervention)=228 n(postintervention)=213 | +1.26 | +5.25 | Single n(preintervention)=208 n(postintervention)=190 | +1.71 | +7.13 |
| 41–65 years n(preintervention)=332 n(postintervention)=318 | +2.43 | +10.13 | Married/long-term relationship n(preintervention)=475 n(postintervention)=473 | +1.86 | +7.75 |
| 65+ years n(preintervention)=220 n(postintervention)=202 | +2.59 | +10.79 | Widowed n(preintervention)=171 n(postintervention)=156 | +2.84 | +11.83 |
| P<0.001 | | | p<0.02 | | |
| Educational attainment | Mean change (point) | Mean change (%) | Type of settlement | Mean change (point) | Mean change (%) |
| Primary school n(preintervention)=61 n(postintervention)=69 | +2.43 | +10.13 | Villages n(preintervention)=30 n(postintervention)=30 | +0.97 | +4.04 |
| Vocational school n(preintervention)=210 n(postintervention)=189 | +2.49 | +10.38 | Other cities n(preintervention)=363 n(postintervention)=343 | +2.50 | +10.42 |
| Baccalaureate n(preintervention)=301 n(postintervention)=292 | +2.39 | +9.96 | County towns n(preintervention)=86 n(postintervention)=88 | +3.33 | +13.88 |
| University n(preintervention)=303 n(postintervention)=266 | +1.67 | +6.96 | Capital city n(preintervention)=410 n(postintervention)=385 | +1.67 | +6.96 |
| p=0.02 | | | p<0.02 | | |

coincide with the results of the patient questionnaires. These results show that the communication of the staff was not that good at the beginning of the project (64.07%). There were gaps in all questions, especially in question 2 ('Did the pharmacist or pharmacy technician encourage you to ask questions during the consultation?').

This problem has already been recognised by the leadership of the Faculty of Pharmacy at Semmelweis University, which will lead to the introduction of extensive teaching

in communication in the undergraduate training of pharmacists from the 2020/2021 academic year. However, the communication training of professionals currently working in community pharmacies is unresolved.

There are several methods for teaching oral communication techniques between professionals and patients in the literature,^{16 48–54} but due to the limited time and the lack of available teaching staff, a new methodology had to be introduced to effectively train a large number

Table 4 Staff questionnaire results per question and total (n(preintervention): preintervention questionnaire data number; n(postintervention): postintervention questionnaire data number; data numbers (n) other than 'the number of professionals surveyed' in the project are due to occasional deficiencies in data collection; p values were determined using variance analysis and t-tests)

| Questions | Mean preintervention score (point) n=889 | Mean postintervention score (point) n=846 | Mean change (point) | Mean change (%) | P value |
|---|--|---|---------------------|-----------------|------------------|
| 1. How typical are you to recognise patients with low levels of health literacy? | 3.96 | 4.35 | +0.39 | +7.80 | <0.001 |
| 2. How typical are you to know what communication techniques you can use to help the patient's health literacy? | 3.69 | 4.26 | +0.57 | +11.40 | <0.001 |
| 3. How typical are you of communicating with your patients in plain, everyday terms eg, not using technical terms)? | 4.02 | 4.50 | +0.48 | +9.60 | <0.001 |
| 4. How typical are you of encouraging your patients to ask questions? | 3.29 | 4.04 | +0.75 | +15.00 | <0.001 |
| 5. How typical are you to visually help your patient understand the information? | 3.65 | 4.16 | +0.51 | +10.20 | <0.001 |
| Total | 18.61 | 21.30 | +2.69 | +10.74 | <0.001 |

of professionals in a short time. With the postgraduate training methodology discussed in the article, the communication skills of 333 pharmacists and pharmacy technicians were developed in 6 months, with only 76 pharmacists participating in direct training, thanks to the presented 'Train the trainer' methodology, which is

Table 5 Results of staff questionnaires by settlement type (bold: subpopulation with significantly higher improvement; n(preintervention): preintervention questionnaire data number; n(postintervention): postintervention questionnaire data number; data numbers (n) other than 'the number of professionals surveyed' in the project are due to occasional deficiencies in data collection; p values were determined using χ^2 test and the Kruskal-Wallis test)

| Type of settlement | Mean change (point) | Mean change (%) |
|--|---------------------|-----------------|
| Villages n(preintervention)=13 n(postintervention)=14 | +2.29 | +9.16 |
| Other cities n(preintervention)=145 n(postintervention)=148 | +2.71 | +10.84 |
| County towns n(preintervention)=30 n(postintervention)=30 | +3.23 | +12.92 |
| Capital n(preintervention)=143 n(postintervention)=135 | +3.43 | +13.72 |
| P<0.02 | | |

an ideal solution for the communication training of a large number of professional with few available trained instructors.

The success of this method is supported by the opinion of more than 1700 patients surveyed. Examining the patient questionnaire, the results of the questions directly related to communication skills (questions 1–4) show that the methodology introduced can make real progress in the professional application of communication techniques in a short time. By the end of the project, the staff has made the most progress in encouraging the patients to ask questions, in avoiding technical terms, and in adequately emphasising information. The patients in the preintervention and postintervention groups differed, so the development is clearly due to the methodology implemented. For questions 5 and 6, the indirect effect of the communication techniques (on drug knowledge and sense of health) has been examined. Here, in addition to improving communication, the score is also affected by changes in the patients' condition. As the patients completing the preintervention and postintervention questionnaires differed, we could not detect the change of the latter factor with this methodology, which is why these changes were smaller. To make greater improvement on these issues, longer term and broader adoption is needed. The results show that pharmacy workers have to pay particular attention to the quality of communication with patients over 40 (this includes most of the widows) and/or with lower qualification.

These results are consistent with the results of the staff questionnaire. As mentioned earlier, pharmacists and

pharmacy technicians did not consider their communication skills to be poor. However, after the project, the professionals saw their abilities even better. Looking at the preintervention and postintervention responses to each question it can be stated that initially, the pharmacy staff rarely encouraged the patients to ask questions (question 4), but by the end of the project, the staff had been able to improve in this, the knowledge and application of communication techniques. This is one of the most essential steps for the patient to actively participate in his/her therapy, which is the basis for collaboration and proper patient adherence. In contrast, training has barely improved the recognition of patients with poor health literacy. The higher development of colleagues working in the capital or county towns may be due to that professionals were trying to spend more time with patients than they did before the project, as pharmacies at these types of settlements generally meet many patients daily, which can make it challenging to provide all the important information due to the lack of time.

The results of the methodology introduced and examined by this study are unique in Hungary. The design and implementation of the project was not an easy task, as it had to adapt to the overload of pharmacists and pharmacy technicians. The aim was to make the methodology compatible with everyday work, due to which there are methodological limitations and shortcomings of the presented study (no randomisation was used, self-developed questionnaires, lack of differentiation between pharmacists and pharmacy technicians), which will be eliminated in the future based on experience. The results and conclusions drawn in the present study provide a comprehensive picture of the necessary introduction of the development of pharmacist communication training in Hungary and the importance and usefulness of the wide-ranging introduction of the pharmacy communication methodology.

CONCLUSIONS

It can be stated that the presented methodology can be used to develop the communication skills of a large number of professionals in a short time, using a small number of instructors, so it is worthwhile to introduce this methodology as part of compulsory postgraduate training. However, it is even more important to introduce the teaching of communication skills in undergraduate pharmacy training to meet the challenges posed by international trends.

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administration. RZ: writing—review and editing, supervision. BH: conceptualisation, supervision.

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*Annex 1: Communication checklist – text summary (English transcription)***HEALTH LITERACY COMMUNICATION - CHECKLIST****Use simple language.**

- Avoid technical terms, use their common synonyms.
- If you still need to use a term, explain the meaning.

Highlight the most important information.

- *Verbally: use emotional accentuation (e.g. "It's very important to know that ...").*
- *Writing: use underlining or colored text in the medication box or the patient leaflet.*

When describing the dosage of medications, give the total daily amount divided into periods of the day.

- For example: "Take two pills daily: one in the morning and one in the evening."
Avoid the wording: "This medicine should be taken in 2x1 doses."

Give only the most necessary information verbally.

- The capacity of short-term memory is limited, so you should not have more than four verbal messages in one conversation.

Recommend a written leaflet or website.

- Provide a leaflet with more information about the disease and the therapy.
- Ask if the patient has internet access and if so, give them a list of professionally credible websites that can be recommended to them.

Offer your help in the preparation of the medicine.

- If the medicine (e.g. a suspension) is to be prepared by the patient him/herself, offer your help, and prepare it prepared in the pharmacy.

Show the patient how to use the purchased equipment.

- If the patient buys a device (e.g. blood pressure monitor, blood glucose meter, inhaler, etc.), offer to show their use.

Encourage the patient to ask questions.

- For example: "If you have any questions about this medicine, I would be happy to answer them."
Avoid the "Do you have a question?" wording, because the answer is usually denial.

Annex 2: „Ask your pharmacist!” poster – text summary (English transcription)

ASK YOUR PHARMACIST!

To use your medication successfully, it is important that you know the answers to the following questions:

- What is the name of the medicine and what does it do?
- How often and how much should I take?
- When, how, and under what circumstances should I take it? Do I have to take it with or without food?
- Are there any foods or beverages (alcoholic beverages) to avoid while taking?
- How do I feel if the drug works and how if not?
- How long should I take? Can I quit earlier if I am better?
- What are the most common side effects? What should I do if I experience side effects?
- What should I do if I forget to take it once or more?
- Can I take other medicines at the same time?
- Is there an over-the-counter medicine that I cannot take with this medicine?
- Can I drive a car? Can I sunbathe while taking medication?
- Does the effect of my medicine change if I use it constantly?
- What happens if I do not use the medicine?
- How should I store my medicine?

Always tell your doctor or pharmacist:

- About prescription and over-the-counter medicines, you take.
- Allergies, side effects associated with your medication.
- If you are pregnant or breast-feeding.

If you have any problems with your current medication (cannot take your medication properly).

Annex 3: „Ask your pharmacist!”- patient information leaflet – text summary (English transcription)

Ask your pharmacist!

In some cases, even the simplest medication can be more complicated than you think, since you need a lot of knowledge to use your medicines safely and effectively. For example, there are some drugs that you should take with food while others before or after a meal. Some of them may make us sleepy, while others may make us very lively. Drinking coffee, alcohol and certain foods or even smoking can affect the way medicines work. Some medications have certain side effects, which may be troublesome but not a problem, while in other cases it is important to inform health care professionals.

We need medications in many cases. Based on a medical recommendation, we buy a prescription or non-prescription product at a pharmacy. In order for drugs to achieve their desired effect, we need to be informed about them. The following detailed information applies to all prescription and over-the-counter drugs. However, they do not replace the essential individual guides for each medicine. To know these, **ask your pharmacist** (who has the appropriate knowledge and electronic database) with confidence.

What you need to know about medicines...

Before you start to take your medicine, always tell your doctor or pharmacist about:

- Your prescription and over-the-counter medicines.
- Allergies and side effects associated with medications.
- If you are pregnant or breast-feeding.
- If you have any problems with your current medication (cannot take your medications properly)

If you are not able to answer the following questions about your medications, ask your pharmacist for help, as this knowledge is needed in order for your therapy to work best.

- What is the name of the medicine and what does it do?
- How often and how much should I take?
- When, how, and under what circumstances should I take it? Do I have to take it with or without food?
- Are there any foods or beverages (alcoholic beverages) to avoid while taking?
- How do I feel if the drug works and how if not?
- How long should I take? Can I quit earlier if I am better?
- What are the most common side effects? What should I do if I experience side effects?
- What should I do if I forget to take it once or more?
- Can I take other medicines at the same time?
- Is there an over-the-counter medicine that I cannot take with this medicine?
- Can I drive a car? Can I sunbathe while taking medication?
- Does the effect of my medicine change if I use it constantly?
- What happens if I do not use the medicine?
- How should I store my medicine?

Always keep an up-to-date list of your prescription and over-the-counter medications, strengths, and doses. Indicate your drug allergies, if you have any. Always show this card to your doctor or pharmacist to help prevent potential interactions and medication with the same active ingredient.

Always keep the following in mind when storing your medication:

- Keep your medication in one place.
- Keep your drugs out of the reach and sight of children.
- Keep your medicine in its original packaging. Except for the daily dose boxes, do not put more than one medicine in one container.
- Store your medication in a dry room at room temperature (15-25 ° C) unless otherwise stated. The kitchen or bathroom is not a good place because of the high humidity.
- Keep your medication away from heat and direct sunlight.
- Never leave your medication in the car.
- If you need to keep your medicine in the refrigerator, always keep it away from food and keep liquids from freezing.
- Keep an eye on the expiry date of your medicines. Deliver the expired product to the pharmacy.

What should you know about side effects?

Some medicines can have unwanted effects, called side effects. In case of side effects, consult a health care professional. Therefore, it is important for you to know what side effects your medications may have and what to do if you notice them. If you notice any unexpected side effects, tell your doctor or pharmacist.

Further important information about medication...

- To take your medicine safely, never take it in places where your eyesight is poor. Always read the name of the medicine and check the expiry date.
- If you are having trouble unpacking your drug, please inform your pharmacist.
- Tell your pharmacist if you have a problem taking your medicine or using the medication delivery device.
- Never give your prescribed medicine to anyone else, because they are assigned to your health problem that is not necessarily the same as the other person's therapy.
- Never take any medicine that you cannot identify or may not have the correct quality (cloudy solution, discolored tablets, etc.). Ask your pharmacist for help.
- Never wait until the last piece of medication has been used. Ask your doctor for an appointment on time.

Remember, to get the best results from your medicines, you need to use them correctly.

Feel free to ask your pharmacist.

Annex 4: Patient questionnaire (the number next to each answer represents the point value of the given answer; this was not indicated in the patient questionnaire) (English transcription)

| | | | | | |
|--|--|--------------------------------|--------------------------------|--|---------------------------------|
| PHARMACY QUESTIONNAIRE FOR PATIENTS | | | | Date: (day) (month) 2017. | |
| The purpose of completing this questionnaire is to survey all pharmacy services that help patients achieve more effective and safer drug therapy. | | | | | |
| <i>Please circle your answer!</i> | | | | | |
| Sex | Male | Female | | | |
| Age | 18-25 | 26-40 | 41-65 | 65 - | |
| Marital status | Single | Married/long-term relationship | Widowed | Other | |
| Education attainment | Primary school | Vocational school | Baccalaureate | University | |
| Type of settlement | Village | Other city | County town | Capital | |
| 1 | Did the pharmacist or pharmacy technician use complicated terms or expressions during the consultation? | Yes (1) | No (4) | I don't know (0) | |
| 2 | Did the pharmacist or pharmacy technician encourage you to ask questions during the consultation? | Yes (4) | No (1) | I don't know (0) | |
| 3 | Did your pharmacist or pharmacy technician emphasize the important information orally, with written help or graphics? | Yes (4) | No (1) | I don't know (0) | |
| 4 | How easy or difficult was it for you to understand the instructions given by your pharmacist or pharmacy technician on how to take/use the prescribed medication? | Very difficult (1) | Rather difficult (2) | Rather easy (3) | Very easy (4) |
| 5 | How much do you feel you know all the important information about your medicines? | Not at all (1) | I have a lack of knowledge (2) | I have medium knowledge (0) | I have sufficient knowledge (3) |
| 6 | How do you see your state of health? | Very good (4) | Good (3) | Acceptable (0) | Bad (2) |
| | | | | | Very bad (1) |

Annex 5: Staff questionnaire (the number above the answers denotes the score for that answer) (English transcription)

| | | | | | | |
|--|--|------------|-------------|------------|----------|--|
| PHARMACY QUESTIONNAIRE FOR EMPLOYEES | | | | | | Date: (day) (month) 2017. |
| Type of settlement | Village | Other city | County town | Capital | | |
| The purpose of completing this questionnaire is to survey all pharmacy services that help patients achieve more effective and safer drug therapy. | | | | | | |
| | Please mark the most relevant answer with an X in the appropriate box, rate it from 1 to 5. | 1 | 2 | 3 | 4 | 5 |
| | | Not at all | Not typical | Moderately | Typical | Very typical |
| 1 | How typical are you to recognize patients with low levels of health literacy? | | | | | For example, you know which patient group has a lower level of health literacy. |
| 2 | How typical are you to know what communication techniques you can use to help the patient's health literacy? | | | | | For example, what questions to ask, what words, examples to use. |
| 3 | How typical are you of communicating with your patients in plain, everyday terms (e.g. not using technical terms)? | | | | | For example, instead of an oral anticoagulant: "blood thinner"; instead of photosensitizing: "as long as you take the medicine, do not go to the sun" etc. |
| 4 | How typical are you of encouraging your patients to ask questions? | | | | | For example: "a lot of things have been discussed right now, is there anything we need to take over again?" |
| 5 | How typical are you to visually help your patient understand the information? | | | | | For example: circling or underlining the relevant information on the package (e.g. name of the active substance, the type of formulation, etc.), writing down the dosage on the box, or showing the use of a device. |