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Original Article

COMMUNICATION BETWEEN A PHARMACIST AND A PATIENT WITH HEARING LOSS IN A COMMUNITY PHARMACY – PROSPECTIVE, NON-INVASIVE QUESTIONNAIRE STUDY

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ABSTRACT

Aim of the Study: The primary objective of this study was to assess, based on the results of a questionnaire-based survey, pharmacists' communication skills when interacting with patients experiencing hearing loss of varying severity. The secondary objective was to evaluate pharmacists' knowledge — derived from the collected responses — regarding the risk factors associated with hearing loss, including: comorbidities (e.g., diabetes, hypertension), pharmacotherapy involving ototoxic medications, and patient age (e.g., age over 65 years). Materials and Methods: The study received approval from a bioethics committee. It was a prospective, anonymous, questionnaire-based study conducted among 130 pharmacists. The survey was distributed both online and in person (in printed form) and was targeted at pharmacists employed in community pharmacies. The questionnaire was created using Google Forms. It contained 19 questions, 18 of which were closed-ended, while the final question was open-ended. Among the 18 closed questions, 14 were single-choice and 4 were multiple-choice. The first group of questions (Questions 1—7 and Question 19) pertained to pharmacists' communication skills. The second group (Questions 8—10 and Question 16) focused on adverse drug reactions related to ototoxicity and pharmacists' knowledge of patient groups at increased risk for hearing loss. The third group (Questions 11—15 and Question 17) addressed educational materials (including training) and technologies that facilitate communication with patients with hearing impairment. The open-ended Question 18 asked participants to propose solutions to support and improve communication between pharmacists and hard-of-hearing patients in community pharmacy settings. Results: Findings from the 130 participating pharmacists indicate that the majority (52.3%) think their current training has not adequately prepared them to communicate with hearing-impaired patients. One-third of respondents emphasized that information on adverse effects impacting hearing should be more clearly highlighted in materials provided by pharmacists, indicating the need for tailored communication regarding drugs with potential ototoxicity. A need for adaptation of educational materials to better suit hearing-impaired patients was also noted. A total of 49.2% of respondents rated their own communication skills with hearing-impaired patients as average, while approximately 28.5% rated them as poor. Conclusions: Based on the collected data, pharmacists assess their communication skills with hearing-impaired patients as insufficient. They correctly identify medicinal products that may cause hearing loss as an adverse effect and are able to point out patient groups whose underlying conditions increase the risk of hearing impairment. However, deficiencies in education (particularly in soft skills), training, and access to materials or equipment that facilitate communication with hearing-impaired patients are identified as the main barriers and challenges to effective communication in community pharmacy settings.

KEYWORDS: community pharmacy, hearing loss, communication, pharmaceutical care

1. Introduction

Effective communication between the pharmacist and the patient in a community pharmacy is extremely important. Hearing is one of the five basic senses that enables people to function properly and perceive the world around them. Effective communication is also an essential element in communication between healthcare professionals — including pharmacists — as well as patients. Proper hearing is a key sense in communication at every stage of life. Hearing loss that is left untreated can seriously affect the skills and abilities of communication, learning, and socialisation processes. According to a report prepared by the World Health Organization (WHO), by 2050 almost 2.5 billion people globally (one in four people) will have a hearing problem [1]. There are several reasons for this condition. The most important ones include: an ageing society (progressive age-related hearing loss), increasing exposure to ambient noise (traffic noise, use of headphones (especially in-the-ear headphones)), and use of ototoxic drugs (e.g., aminoglycoside antibiotics — intravenously, cisplatin) [2]. Regular exposure to sounds higher than or equal to 85 dB can permanently damage one's hearing. A pharmacist in their daily practice in a pharmacy may encounter cases of patients at risk of hearing loss due to comorbidities. An important role of pharmacists in the field of pharmaceutical care in Poland is the consultation "New Medicine" and the education of the patient about the medicinal products used by them for the first time, including information about the e.g. potential ototoxic effects of medicinal products [3]. Particular attention should be paid to patients suffering from diabetes (due to microangiopathic and neuronal damage), hypertension, oncological patients (use of ototoxic drugs), or patients from the geriatric population (age-related hearing loss) [1]. Thanks to this knowledge, the pharmacist can make the patient aware of the need to visit an audiologist or ENT specialist (ENT — ear-nose-throat). A pharmacist may also encounter a patient with hearing loss or deafness who is a user of specialized medical devices — hearing aids and/or cochlear implants, which enable such a patient to hear properly. According to the classification, hearing loss is divided into: 1. age-related hearing loss (presbyacusis; gradual deterioration of hearing in the elderly; difficulty hearing high tones), 2. conductive hearing loss — problems in the outer or middle ear (may be caused by sudden deterioration of hearing — possible earwax blockage; middle ear infections or damage to the eardrum — mechanical injuries or infections, 3. sudden sensorineural hearing loss (SSNHL) — a problem in the inner ear or auditory nerve (caused by exposure to noise (e.g., working in a noisy environment), use of ototoxic drugs, neurological and vascular diseases — e.g., stroke, auditory nerve tumors) [4]. The primary objective of the study was to assess (based on the results of a questionnaire, anonymous, prospective study) the skills of pharmacists in communicating with patients experiencing hearing loss of varying severity. The secondary objective was to verify the knowledge and skills of pharmacists in terms of risk factors for hearing loss, such as 1. chronic diseases (e.g., diabetes, hypertension), 2. pharmacotherapy with the use of ototoxic drugs, and 3. age of the patient (e.g., age over 65 years).

2. Materials and Methods

The study received the approval of the bioethics committee number: IFPS: KB/Statement No. 2/2025. The study is a prospective, non-invasive, questionnaire-based, and anonymous study conducted among 130 pharmacists. The surveys were addressed to pharmacists (over 25 years of age) — employees of community pharmacies (regardless of the size of the place where the pharmacy is located). Questionnaire results were collected online and on paper. The questions included in the survey have been selected and based on the specified above purpose of the work. The survey meets the requirements for a limited number of questions, so that the time to complete the survey is not too long (maximum 5—7 minutes). The proposed answers were prepared in such a way that they allow for easily measurable results (in most closed questions).

The questionnaire contained 19 questions, of which 18 questions were closed-ended questions, while the last question was an open-ended question. Of the 18 closed-ended questions, 14 questions were single-choice closed-ended questions, while 4 questions were multiple-choice closed-ended questions. The first group of questions (questions 1 to 7 and question 19) concerned the issue of communication skills of pharmacists. The second group of questions (questions 8 to 10 and question 16) concerned adverse reactions of medicinal products associated with ototoxicity and patients at risk of hearing loss. The third group of questions (questions 11 to 15 and question 17) concerned materials (including training) and technologies facilitating communication with a person with hearing loss. Question 18 was an open-ended question and concerned proposing solutions to support and facilitate communication between the pharmacist and the patient with hearing loss in a public pharmacy.

3. Results

All answers collected were included in the study, none were rejected. The survey was distributed during the period from 03/2025 to 04/2025. To compile the results, the answers to each question were summed up and converted into percentages, and then the results were presented in the form of bar charts. The questions in the questionnaire are divided into three categories:

I. The first group of questions (questions 1 to 7 and question 19) referred to the issue of communication skills of pharmacists in a conversation with a patient experiencing hearing loss.

II. The second group of questions (questions 8 to 10 and question 16) referred to the extent of pharmacists' knowledge of adverse drug reactions related to ototoxicity and to patients belonging to a hearing loss group.

III. The third group of questions (questions 11 to 15 and question 17) referred to materials (including training) and technologies that are designed to facilitate communication between the pharmacist and the hearing-impaired.

3.1. The first group of questions

Questions 1 to 7 and question 19 referred to the issue of communication skills of pharmacists in a conversation with a patient experiencing hearing loss.

Question 1: How do you assess your communication skills with hearing-impaired patients?

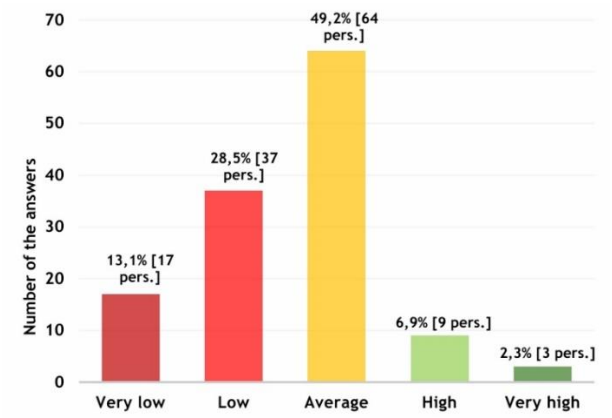

Fig. 1. Results obtained from 130 pharmacists in response to Question 1: How do you assess your communication skills with hearing impaired patients?

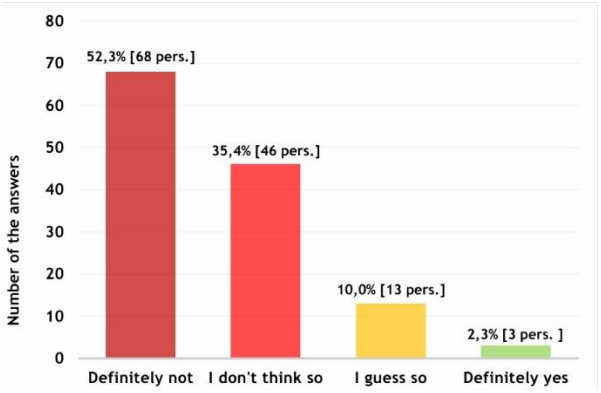

Fig. 2. Results obtained from 130 pharmacists in response to Question 2: Do you think that your previous professional training has adequately prepared you to deal with hearing impaired patients?

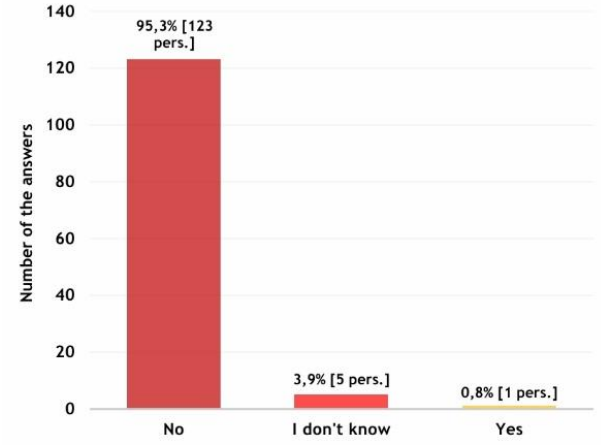

Fig. 3. Results obtained from 129 pharmacists in response to Question 3: Do the pharmacy where you work use tools that facilitate communication (e.g. hard copy of materials, induction loop station - sound amplifier) dedicated to hearing impaired people?

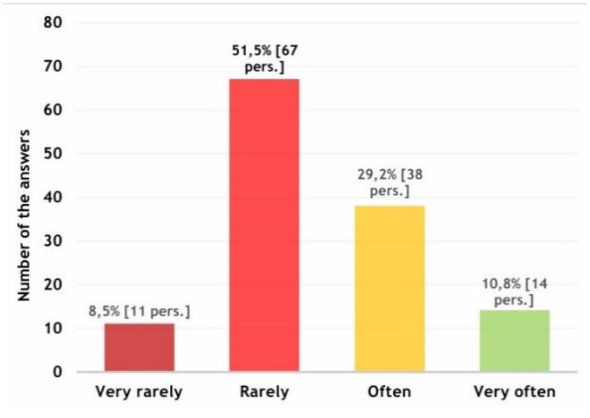

Fig. 4. Results obtained from 130 pharmacists in response to Question 4: How often do you encounter difficulties in communicating with hearing impaired patients?

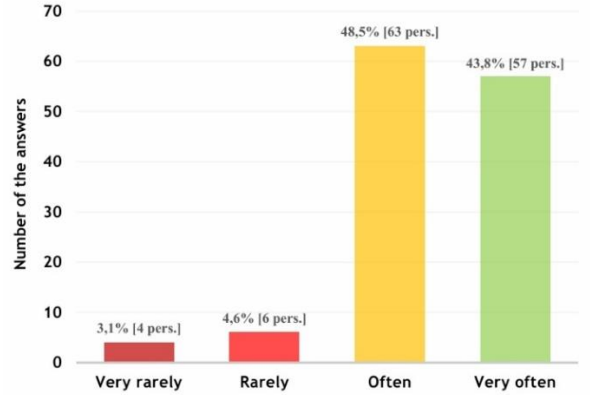

Fig. 5. Results obtained from 130 pharmacists in response to Question 5: Do you use communication techniques such as speaking more slowly, articulating clearly, making eye contact with the patient or written communications?

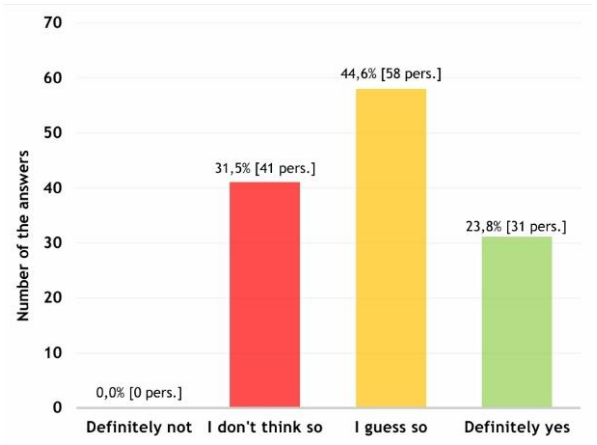

Fig. 6. Results obtained from 130 pharmacists in response to Question 6: Do you think that additional solutions should be introduced in the pharmacy where you work to support communication with hearing impaired patients?

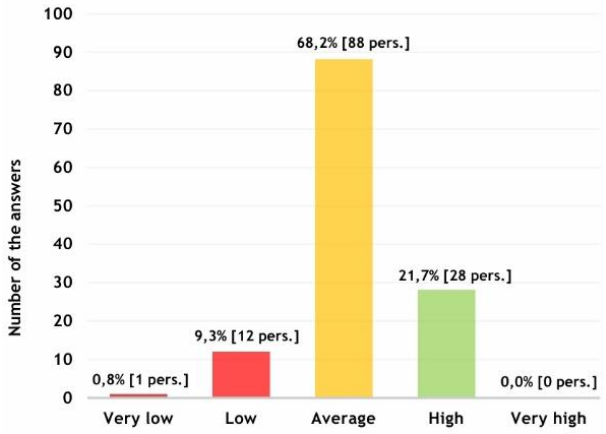

Fig. 7. Results obtained from 129 pharmacists in response to Question 7: How do you assess the level of understanding of the information you provide to hearing impaired patients?

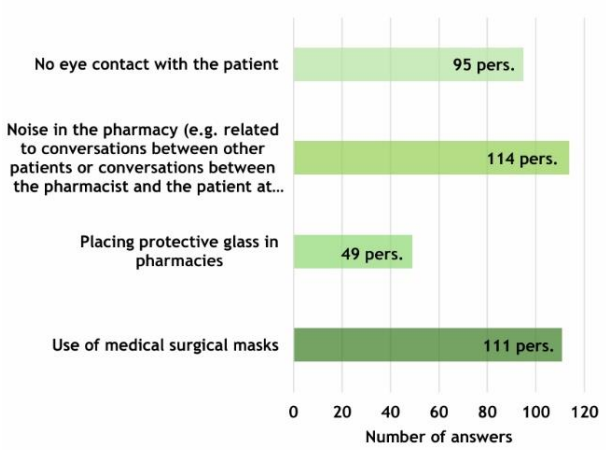

Fig. 8. Results obtained from 128 pharmacists in response to Question 19: What do you think - as a pharmacist - can negatively affect verbal communication with a hearing-impaired patient (multiple choice)?

3.2. The second group of questions

Questions 8 to 10 and question 16 concerned the extent of pharmacists' knowledge of adverse drug reactions related to ototoxicity and with respect to patients belonging to risk groups of hearing loss.

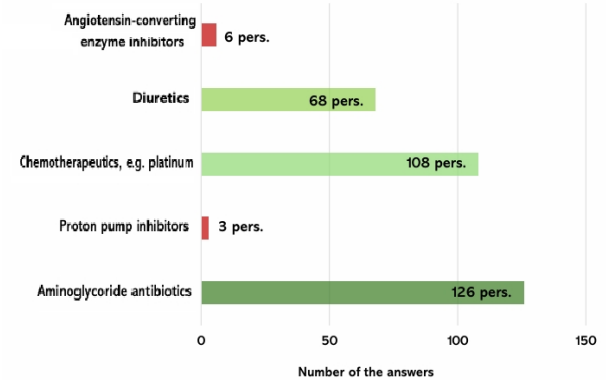

Fig. 9. Results obtained from 129 pharmacists in response to Question 8: Which of the listed drugs have potential ototoxic effects? (multiple selection)?

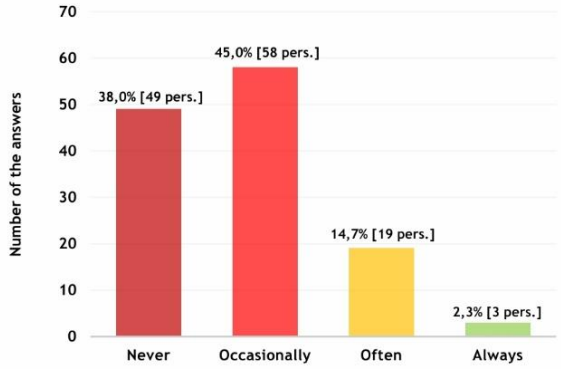

Fig. 10. Results obtained from 129 pharmacists in response to Question 9: Do you inform patients about the potential negative effects of medications on their hearing?

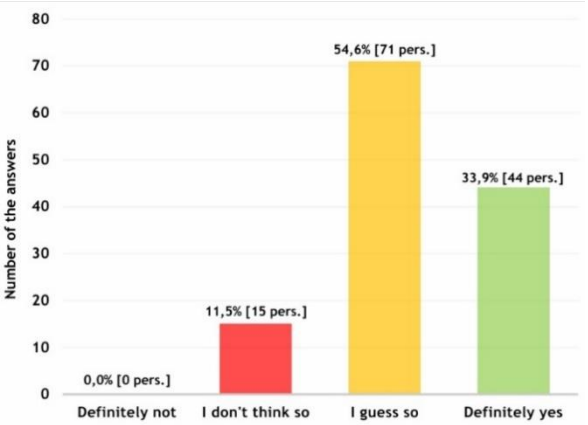

Fig. 11. Results obtained from 130 pharmacists in response to Question 10: Do you think that information about side effects affecting hearing should be more emphasized in materials available in the pharmacy?

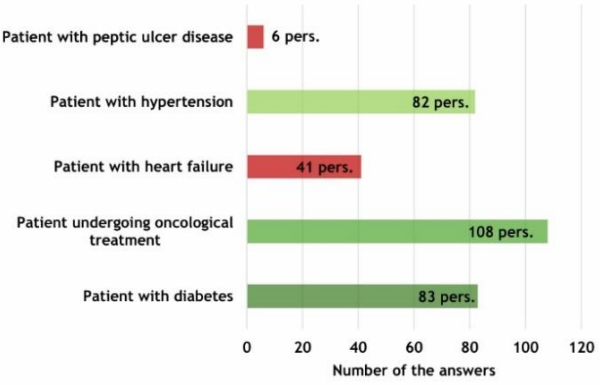

Fig. 12. Results obtained from 128 pharmacists in response to Question 16: Which patients in these groups are at risk of hearing impairment? (multiple selection)?

3.3. The third group of questions

Questions 11 to 15 and question 17 concerned materials (including training) and technologies designed to facilitate communication between the pharmacist and the hearing-impaired person.

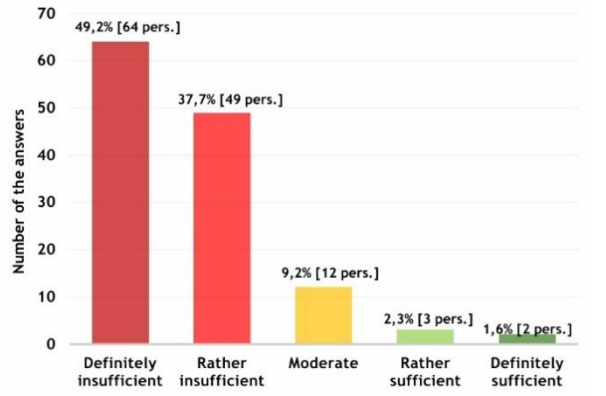

Fig. 13. Results obtained from 130 pharmacists in response to Question 11: How do you assess the availability and quality of training to communicate with patients with special hearing needs in the pharmacy where you work?

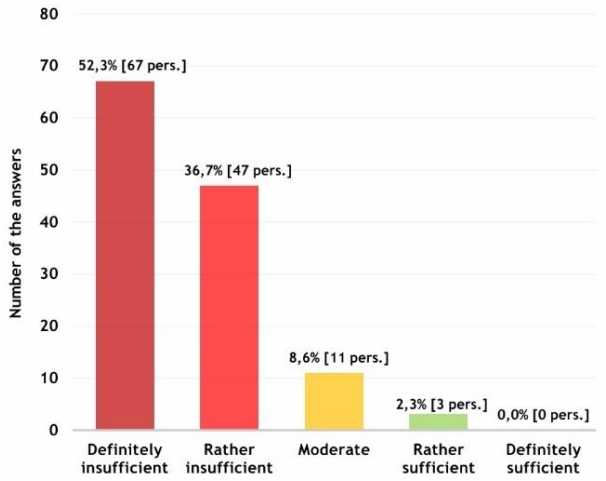

Fig. 14. Results obtained from 128 pharmacists in response to Question 12: How do you assess the availability and quality of information materials in the pharmacy about hearing loss and communication with the hearing-impaired patient?

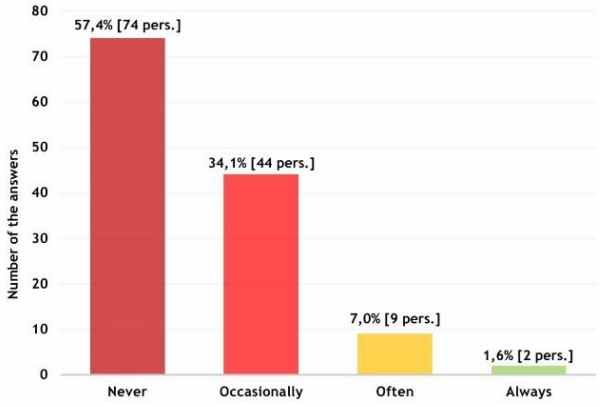

Fig. 15. Results obtained from 129 pharmacists in response to question 13: How often do you use additional information materials or communication technologies to serve hearing impaired patients? (printed materials, induction loop station - sound amplifier, phone applications) supporting communication?

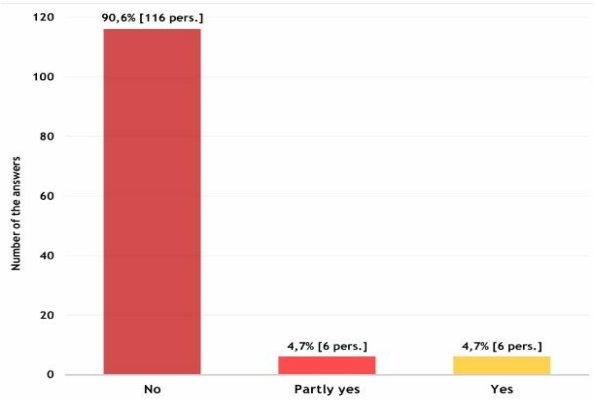

Fig. 16. Results obtained from 128 pharmacists in response to Question 14: Do you have experience working with a sign interpreter or other professionals who support communication with hearing impaired patients?

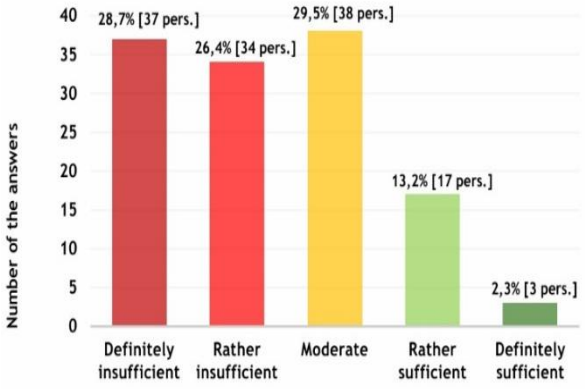

Fig. 17. Results obtained from 129 pharmacists in response to Question 15: How do you assess the availability and support of technology, e.g. through phone applications to support communication with hearing impaired patients in the context of communication with such patients?

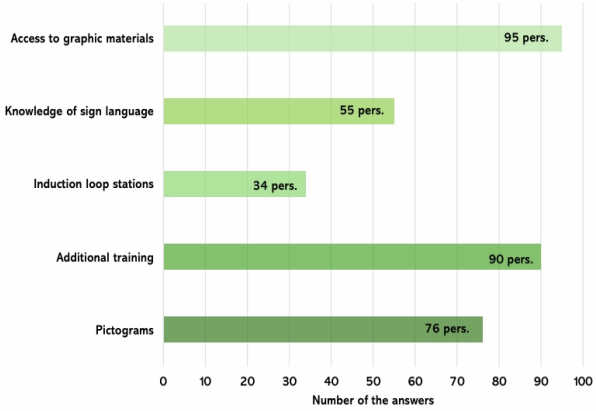

Fig. 18. Results obtained from 128 pharmacists in response to Question 17: What actions or changes in the pharmacy communication system could further improve contact with hearing impaired patients, including informing about the side effects of drugs affecting hearing? (multiple selection).

3.4. Open-ended question

Question 18, answered by 41 pharmacists, was an open-ended question in which respondents could suggest solutions they considered useful for improving the quality of communication with patients with hearing loss.

The most frequently mentioned needs were written or graphic forms (leaflets, miniposters, boards) and sound amplification devices. Many respondents suggested the use of tablets with styluses as a tool to facilitate the exchange of information. The importance of training pharmacists in communication with hearing-impaired people and in sign language was also emphasized. The proposals also included setting aside quiet rooms in pharmacies for conversations, introducing QR codes linking to videos explaining the content of leaflets in Polish Sign Language, and using transparent masks that allow lip reading.

4. Discussion

Effective communication with the patient in a community pharmacy is very important. Many people — both patients and pharmacists — point out the lack of brochures and posters that could facilitate communication, which is confirmed by the results of a study included in the publication by Eun H. et al. (2023). The study also draws attention to the need to simplify the content of the materials, because hearing-impaired patients pointed out that their form was too difficult [5]. In the study, the results of which are presented in this publication, one-third of the pharmacists surveyed pointed out that information about adverse reactions affecting hearing should be more prominent in the materials made available by pharmacists in the pharmacy, which indicates the need to include this information in the materials with regard to medicinal products with a potential risk of ototoxicity. The information provided should be adapted to the needs of patients experiencing hearing loss. The results of the study presented in the publication by Leelakanok N. et al. and Ferguson MC et al. confirm that hearing-impaired patients should have access to specially prepared educational materials that will support proper communication and provide additional assistance in communication with healthcare professionals, including pharmacists [6,7]. The results obtained among 130 surveyed pharmacists show that pharmacists in the vast majority (52.3%) claim that their previous training has not prepared them adequately to work with hearing-impaired patients. Similar conclusions are presented in an article by Al Alool N. (2023), where attention is drawn to the lack of appropriate communication skills in the professional group of pharmacists [8]. According to the results obtained from the questionnaire study, 49.2% of the surveyed pharmacists rated their ability to communicate information to hearing-impaired patients as medium and 28.5% as low. The effects of insufficient communication skills between the pharmacist and the patient are described in an article by Eun H. et al. (2023). It indicated that about 70% of people with hearing loss had difficulties communicating with a pharmacist. In addition, pharmacists encounter difficulties in effectively communicating accurate information to hearing-impaired patients, which can lead to dangerous situations, as such information concerns issues related to the efficacy and safety of medicinal products, and may concern issues such as the correct dosage of drugs or information on adverse drug reactions [5]. Very few pharmacists use sign language to communicate with a patient with severe hearing loss [5]. According to the results obtained in this study, 90.6% of the pharmacists surveyed admitted that they have no experience working with a sign interpreter or other specialists who support communication with hearing-impaired patients. Similar results were obtained in a publication by Al Aloola N. et al [8]. In line with the above results, many pharmacists have pointed out that the use of surgical masks can negatively affect communication with hearing-impaired patients. This is because patients with hearing loss very often read lip movement, which has also been confirmed by other studies [4]. During the COVID-19 pandemic, the use of surgical masks was particularly acute for hearing-impaired patients, as personal protective equipment worn by healthcare professionals made it difficult for patients to communicate effectively with pharmacists [5].

According to the results obtained from this analysis and referring to the answers given to Question 4, which concerned difficulties in communicating with a hearing-impaired patient, half of the respondents (51.5%) stated that they very rarely or rarely encounter this type of difficulty. This is somewhat surprising and partly contradictory to the results obtained in other questions. The answer to this question can also be interpreted in such a way that the 130 people who answered rarely or very rarely have a problem with such communication, because perhaps in the group of patients visiting the pharmacy or pharmacies where they work, there are few patients with hearing loss, which is why they rarely encounter this type of problem. Most pharmacists are aware of which types of active substances have the potential to induce reversible or irreversible ototoxicity (pointing primarily to drugs from the group of aminoglycoside antibiotics (126 responses), chemotherapeutic drugs (e.g., cisplatin) (108 responses) or loop diuretics (68 responses). The vast majority of pharmacists also know which diseases are associated with patients with an increased risk of hearing loss, indicating primarily patients with diabetes (83 respondents), patients with oncological diseases (treated with chemotherapeutic drugs with ototoxicity potential) (108 respondents), or patients with hypertension (82 respondents). In order to improve the quality of communication between a pharmacist in a public pharmacy and a hearing-impaired patient, it would be worth considering increasing the availability of training for pharmacists in the field studied. It would also be advisable to facilitate access to auxiliary materials supporting communication, i.e., pictograms or written information specially prepared for the examined group of patients. It is worth noting that the content of information brochures is often written in a complicated language, incomprehensible to the patient, so it would be helpful to improve the content of brochures and use simpler language in them, which could have a positive impact on the quality of understanding the information provided. Referring to the above ideas as possible systemic solutions, it would certainly be necessary to strengthen public pharmacies with solutions facilitating communication with the hearing-impaired. Pharmacists most often indicated the need for additional training in the field of the examined problem. The answer was repeatedly given regarding the use of sound amplification devices in pharmacies and the use of tablets with a stylus to enable efficient written communication between interlocutors. It has also been suggested to introduce special rooms (e.g., a pharmaceutical care room) where silence would reign

to allow better communication between the pharmacist and the patient. Others proposed increasing the number of pictograms in pharmacies. In addition, there was a suggestion to place QR codes on medication leaflets that would lead to video materials in sign language. The results indicate that there is a real problem related to difficulties in communication between a hearing-impaired patient and a pharmacist in a public pharmacy. Pharmacists admit that their preparation for working with the group of patients selected in the study is not sufficient.

4.1. Limitations and strengths of the study

One of the limitations of the study is the number of results obtained and, in relation to the results obtained online. The limited amount of research in this area in the national literature on the communication aspects of hearing loss patients with healthcare professionals, including pharmacists, is an important aspect of the study. The results obtained in this group of respondents show that the topic requires further research and analysis, especially due to the increasing number of patients from the geriatric population (Poland is one of the ageing countries) who are particularly at risk of hearing loss, and who very often come into contact with a pharmacist in a pharmacy due to the frequent need to use pharmaceutical services. The results of this study show how important the problem of hearing loss is among patients in public pharmacies, and how significantly it can affect problems with communication.

5. Conclusions

Based on the collected material, it can be assessed that pharmacists assess their communication skills with patients with hearing loss at an insufficient level. They correctly identify medicinal products that may cause hearing loss as an adverse reaction, as well as identify those groups of patients in whom the underlying disease may increase the risk of hearing loss (identification of risk groups of patients at risk of hearing loss in the future). Deficiencies in education (communication), training, or the availability of materials and equipment facilitating communication with a patient with hearing loss are indicated as the biggest barriers and challenges in effective communication with a patient with hearing loss in a community pharmacy. The results indicate that there is a real problem related to difficulties in communication between a hearing-impaired patient and a pharmacist in a community pharmacy. Pharmacists admit that their preparation for working with the group of patients selected in the study is not sufficient.

Author Contributions: Conceptualization, WC and MS.; methodology, WC and MS; validation MS.; investigation, WC; resources, MS; data curation, MS; writing—original draft preparation, WC; writing—review and editing, MS; visualization, WC and MS; supervision, MS; project administration, MS; funding acquisition, MS. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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