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Management of Diarrhea in Community Pharmacies: Knowledge and Counselling Practices

L.G. Nazaryan, A.B. Barseghyan, M.H. Simonyan

*Yerevan State Medical University after M. Heratsi,
Department of Pharmaceutical Management,
0025, Yerevan, 2 Koryun Street*

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Self-medication has become an increasingly common practice worldwide, particularly in the management of minor and self-limiting conditions. Community pharmacies often serve as the first point of contact within the healthcare system, where patients seek advice and access to over-the-counter (OTC) medicines. In this context, pharmacy employees play a pivotal role in promoting the safe and rational use of medicines by providing appropriate pharmaceutical counselling, identifying potential warning signs and referring patients to doctor [4].

Diarrhea is among the most frequent conditions for which individuals seek self-treatment. It may result from a wide range of causes, including infectious and non-infectious diseases, exposure to toxic substances, neoplasms, stress, and dietary factors. In an attempt to alleviate symptoms, patients frequently resort to self-medication, which can lead to numerous cases of irrational medicine use, inappropriate drug selection, and delayed medical consultation [14].

Community pharmacies therefore represent a key setting in which decisions regarding the management of diarrhea are made, underscoring their importance from a public health perspective. Effective management of diarrhea in community pharmacies requires pharmacy employees to possess adequate professional knowledge and communication skills. This includes understanding the therapeutic effects, potential side effects, contraindications, and appropriate methods of use of antidiarrheal medicines, as well as recognizing clinical situations that necessitate medical referral to doctor [13, 19]. Through proper counselling pharmacy staff can help patients make informed decisions, minimize risks associated with self-medication, and ensure timely access to healthcare services when required.

International guidelines emphasize that pharmacists and pharmacy technicians should extend their role beyond medicine dispensing and actively engage in patient education. This involves providing clear information on correct medicine use, potential adverse effects, drug interactions, and warning signs that indicate the need for medical evaluation. Nevertheless, evidence from studies conducted in both developed and developing countries suggests considerable

variability in the quality and scope of pharmaceutical counselling provided in community pharmacies [5, 7].

In many settings, pharmacy practice remains largely product-oriented, with insufficient emphasis on clinical assessment and patient-centered care. The inappropriate use of antidiarrheal medicines, particularly such agents as loperamide and adsorbents, have been associated with significant health risks, including serious adverse effects when used without proper assessment or guidance. Moreover, limited awareness of danger signs – such as blood in stool, high fever, signs of dehydration, or prolonged symptoms – may contribute to irrational medicine use and delays in seeking appropriate medical treatment. Despite the expanding role of community pharmacies in supporting self-care and public health, evidence regarding pharmacy employees' knowledge, practices, and counselling behaviors in the management of diarrhea and other gastrointestinal complaints remains limited in many countries [1, 3, 17, 18].

A review of studies conducted in different countries highlights the need for planning, standardizing, delivering and monitoring of diarrhea symptom management services in developing countries. The use of a standardized approach to pharmaceutical care will help provide patients with consistent, high-quality, appropriate pharmaceutical advice. It can reduce variability in the quality of advice provided by pharmacy staff, improve service efficiency and allow for more efficient use of available health resources at the primary health care level.

Regardless of professional and occupational standards, pharmacy staff should lead the effective and safe management of diarrhea symptoms [2, 8].

A better understanding of these aspects is essential for identifying gaps in pharmaceutical counselling and for developing targeted educational and regulatory interventions aimed at improving patients' safety and quality of care.

The aim of the present study was to assess the role of pharmacy employees in the management of self-treated conditions, with a specific focus on diarrhea, by evaluating the frequency of consultations, dispensing practices, awareness of warning signs, and the quality of information provided to consumers in community pharmacies.

Material and Methods

The object of the study was the results of a sociological survey conducted among pharmacy employees. Data were collected using a structured questionnaire method. The questionnaires were developed based on standard World Health Organization (WHO) questionnaires, the WHO manual on the management of diarrhea, and international gastroenterology guidelines, with adaptation to the specifics of pharmacy practice and the pharmaceutical market of the Republic of Armenia [8, 11, 16, 20].

The study employed a cross-sectional design aimed at assessing pharmaceutical care provided during diarrhea symptoms. Cross-sectional studies are widely used in public health and social pharmacy research, as they allow the

assessment of real-world practices and behaviors of respondents within a defined period. This design enables the inclusion of a broad range of participants and ensures an adequate level of data reliability for evaluating current practices and healthcare service delivery.

The survey was conducted among 284 randomly selected pharmacy employees working in community pharmacies in the capital city during 2021.

Statistical processing of the collected data was carried out using modern computer-based methods.

The required number of respondents was calculated using The Survey System (Version 11,0), taking into consideration the volume of the surveyed, the first type error is with 5% probability ($\alpha = 0,05$), the evaluation accuracy is 3% ($\Delta = 3\%$).

It considered the worst-case scenario - $P = 0.5$, since the results of similar studies conducted in Armenia were not found.

$$n = \frac{N \cdot z^2 \cdot pq}{N \cdot d^2 + z^2 \cdot pq}$$

n – sample size;

N – pharmacies of the Republic of Armenia

z – probability of the error of the first type (α)

p – estimated proportion

d – tolerated margin of error

$$n = \frac{1096 \times 1,96^2 \times 0,5(1-0,5)}{0,05^2 \times 1096 + 1,96^2 \times 0,5(1-0,5)}$$

n = 284

Taking into account the content and objectives of the survey, the questionnaires were reviewed and approved by the Ethics Committee of Yerevan State Medical University. Analysis of additional data related to pharmacy activity assessment will be presented in subsequent sections.

The results of this study were made by statistical methods that were universally recognized. The collected data were registered in statistical SPSS software package (version 23.0).

Results and Discussion

The survey was conducted among 284 pharmacy employees of different ages, qualifications and experiences.

During the study, the most frequently self-treated conditions for which patients sought advice from pharmacy employees were identified. Gastrointestinal disorders (diarrhea, constipation, heartburn, flatulence) took second place (30%), followed by acute upper respiratory tract disorders (35%) (Fig. 1). The next most common symptoms that were self-treated were also pain syndromes (28%) and various problems of the nervous system (9%).

The aforementioned data indicate that gastrointestinal disorders, including diarrhea, are conditions for which pharmacy advice is frequently sought and relevant from a public health perspective. This finding highlights the need for pharmaceutical intervention and appropriate counselling.

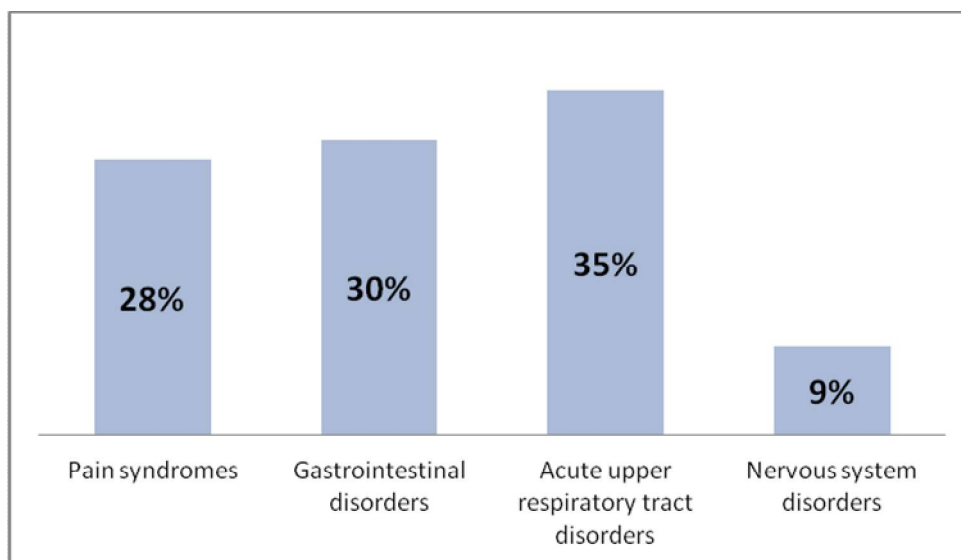


Fig. 1. Most frequently self-treated conditions (N = 284)

Although the survey results show that employees dispense a large number of diarrhea medications daily, our research findings show that most consumers do not receive adequate pharmaceutical care when experiencing diarrhea symptoms.

When asked “which symptoms or danger signs of diarrhea should prompt you to refer to a doctor?”, pharmacy employees most frequently indicate blood in stool (29,2%) (Table). A small proportion of employees selected high fever (22,9%), nausea (7%), signs of dehydration (13,4%), diarrhea lasting more than 48 hours (17,6%), and general distress related to diarrhea (20,4%). This was a multiple-choice question, and participants were allowed to select more than one option. Overall, the distribution of responses indicates gaps in the comprehensive

recognition of all clinically important warning signs of diarrhea among pharmacy employees. Increasing awareness of diarrhea symptoms among pharmacy staff may contribute to better differentiation of diarrhea types and more rational treatment.

Table

*Assessment of pharmacy employees' knowledge of warning signs of diarrhea
(N = 284)*

Warning signs	Frequency (%)	Participants (n)
Presence of blood in stool	29.2%	83
High fever	22.9%	65
Nausea	7.0%	20
Signs of dehydration	13.4%	38
Diarrhea lasting more than 48 hours	17.6%	50
General severe condition associated with diarrhea	20.4%	58

Note: Multiple responses were allowed; therefore, percentage may exceed 100%.

Forty-two percent of pharmacy employees assured that regardless of whether they dispense drugs for the treatment of diarrhea or the consumer independently request the medicine, they inform consumers about the procedure for using the given drug. However, 39% of employees admitted that they do not provide such information to the consumer at all, and 19% sometimes provide it (Fig. 2).

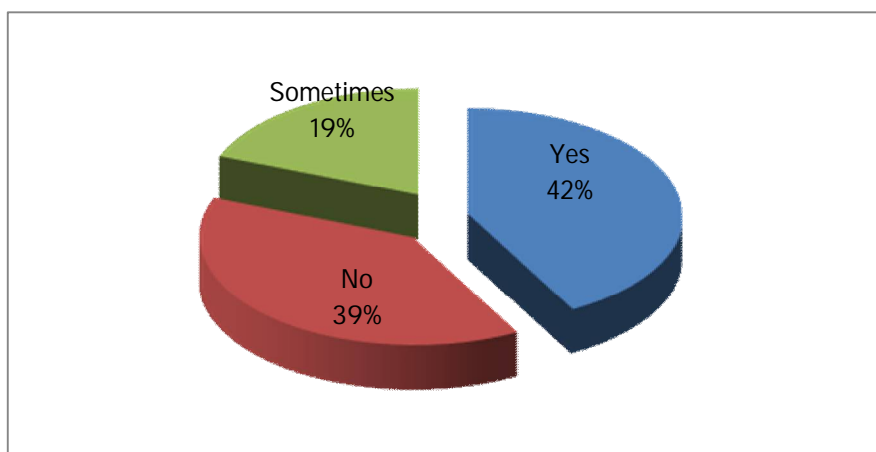


Fig. 2. Informing the consumer about the procedure for using medicines by a pharmacy employee (N=284)

It is a cause for concern that only a limited proportion of pharmacy staff warn patients about the possible side effects of medications prior to dispensing them. Specifically, 22% of respondents reported routinely providing such warnings, while 31% indicated that they inform patients only sometimes, and 52% reported that they do not provide any warning at all (Fig. 3). According to the World Health Organization, insufficient counselling on medication use and safety is considered a risk factor associated with inappropriate medicine use.

One of the most frequently dispensed medications by pharmacy staff for diarrhea was loperamide. This active ingredient is associated with several potential side effects, including abdominal pain, flatulence, urinary tract disturbances, constipation, drowsiness, dizziness, vomiting, and dry mouth. Moreover, most sources emphasize that loperamide should be used with caution in patients with cardiovascular conditions, as overdose may lead to serious cardiac complications [12].

Similarly, branded generic medicines containing diosmectite, commonly used in the management of diarrhea, have been reported to cause adverse effects such as constipation, vomiting, skin itching, urticaria, angioedema, and hypersensitivity reactions during treatment. Adverse effects have also been documented for other medications used in the treatment of diarrhea. These findings suggest that a substantial proportion of patients may use antidiarrheal medications without adequate awareness of their potential risks, which may contribute to inappropriate use and subsequent health complications.

Comparable results have been reported in several developing countries, where the role of the pharmacist is often limited to the traditional function of medicine dispensing, with less emphasis on the provision of pharmaceutical counselling and public health services [10]. Studies conducted in Germany and Qatar have similarly identified insufficient counselling regarding medication side effects, for example, research from Germany indicated that while basic information on dosage is commonly provided, counselling on potential adverse effects is frequently lacking. In contrast, in countries such as Australia, pharmacists are regarded as highly accessible healthcare professionals who actively provide pharmaceutical advice and primary healthcare services, particularly in the management of minor illnesses [6, 9, 15].

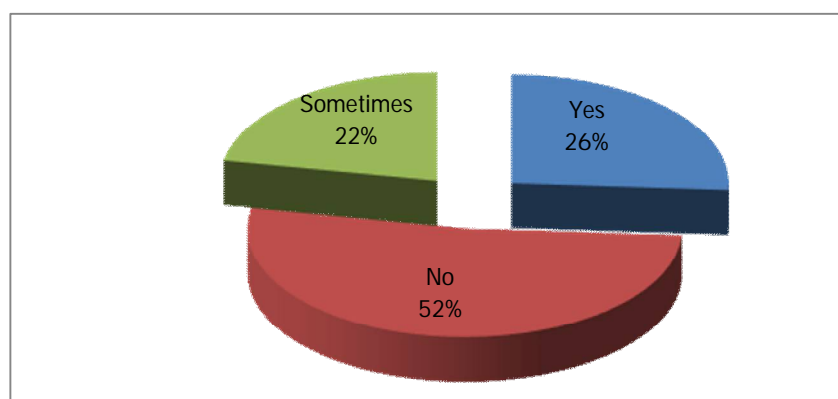
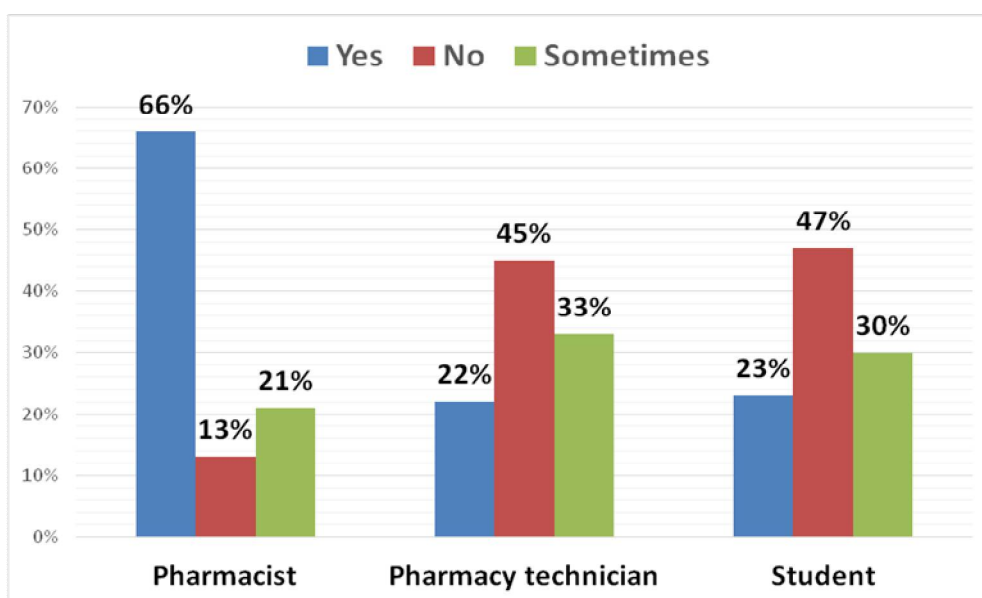


Fig. 3. Informing consumers about drug side effects by a pharmacy employee (N=284)

The relationship between educational qualification and provision of information on drug side effects was also studied (Fig. 4). Comparatively, pharmacists were more likely to inform patients about drug use rules and side effects. In particular, 66% of pharmacists informed consumers about drug side effects, while among pharmacy technicians this indicator was 22%, and among students it was 23%.

The results obtained are statistically significant ($P < 0.05$) and emphasize that higher education of pharmacists plays an important role in improving the quality of pharmaceutical consultation, which contributes to safer and more effective drug treatment of patients.



$P < 0.05$

Fig. 4. Reporting of drug side effects depends on the qualifications of pharmacy employees

Appropriate measures should be implemented to improve the quality and the extend of information provided to consumers during self-medication, thereby enabling them to more accurately assess the potential benefits and risks associated with medication use. The pharmacist's role extends beyond the provision of the appropriate medicine and includes delivering clear and accurate information on the method of administration, possible drug interactions, indications, contraindications, and potential side effects. According to the experience of European countries, the provision of pharmaceutical counselling is regarded as a key factor in building trust between consumers and pharmacy employees. The research findings suggests the need to develop pharmaceutical care algorithms to support pharmacy employees during patient consultations.

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Ведение диареи в общественных аптеках: знания и консультативная практика

Л.Г. Назарян, А.Б. Барсегян, М.Х. Симонян

В последние годы самолечение получило широкое распространение во всём мире. В этом контексте общественные аптеки часто выступают в качестве первого доступного звена системы здравоохранения, куда потребители обращаются к аптечным работникам за консультацией и для приобретения безрецептурных лекарственных средств. Роль аптечных работников имеет ключевое значение в обеспечении рационального и безопасного использования лекарственных средств посредством надлежащего фармацевтического консультирования, выявления опасных симптомов и, при необходимости, направления пациента к врачу.

Целью настоящего исследования была оценка роли аптечных работников в управлении состояниями, подлежащими самолечению, с особым акцентом на симптом диареи. В опросе приняли участие 284 случайно отобранных сотрудника общественных аптек города Еревана в течение 2021 года. Сбор данных осуществлялся с использованием структурированных анкет.

Результаты исследования показали, что среди самостоятельно лечимых проблем здоровья ведущие позиции занимают желудочно-кишечные расстройства, включая диарею, и аптечные работники ежедневно отпускают значительное количество лекарственных средств для лечения диареи. В частности, не все сотрудники в полной мере информируют потребителей о правилах применения лекарств, возможных побочных эффектах и показаниях для обращения к врачу. Значительная часть аптечных работников не распознаёт все клинически важные тревожные признаки диареи, такие как обезвоживание, длительное течение диареи или высокая температура.

Полученные результаты свидетельствуют о необходимости непрерывного профессионального обучения аптечных работников, внедрения стандартизированной

ванных подходов к фармацевтической помощи и использования консультационных алгоритмов.

Փորլուծության կառավարումը համայնքային դեղատներում. գիտելիքներ և խորհրդատվական պրակտիկա

Լ.Գ. Նազարյան, Ա.Բ. Բարսեղյան, Մ.Հ. Միմոնյան

Վերջին տարիներին ինքնաբուժումը լայն տարածում է ստացել ամբողջ աշխարհում: Այս համատեքստում համայնքային դեղատները հաճախ առողջապահական համակարգի առաջին դիմելի օղակն են, որտեղ սպառողները դիմում են դեղատան աշխատակիցներին՝ խորհրդատվության և առանց դեղատոմսի դեղերի ձեռքբերման նպատակով: Դեղատան աշխատակիցների դերը կարևոր է դեղերի ռացիոնալ և անվտանգ օգտագործման ապահովման գործում՝ պատշաճ դեղագործական խորհրդատվության, վտանգավոր ախտանշանների բացահայտման և անհրաժեշտության դեպքում բժշկի մոտ ուղղորդման միջոցով:

Մույն հետազոտության նպատակն էր գնահատել դեղատան աշխատակիցների դերը ինքնաբուժվող վիճակների կառավարման մեջ՝ կենտրոնանալով հատկապես փորլուծության ախտանիշի վրա:

Հարցմանը մասնակցել են Երևան քաղաքի համայնքային դեղատներում աշխատող 284 պատահականորեն ընտրված դեղատան աշխատակիցներ՝ 2021 թվականի ընթացքում: Տվյալները հավաքագրվել են կառուցվածքային հարցաթերթիկների միջոցով:

Հետազոտության արդյունքները ցույց տվեցին, որ ինքնուրույն բուժվող առողջական խնդիրների շարքում աղեստամոքսային խանգարումները, այդ թվում՝ փորլուծությունը, զբաղեցնում են առաջատար դիրքեր, և դեղատան աշխատակիցներն ամենօրյա ռեժիմով մեծ քանակությամբ դեղեր են տրամադրում փորլուծության դեպքում: Մասնավորապես ոչ բոլոր աշխատակիցներն են լիարժեք տեղեկացնում սպառողներին դեղերի կիրառման կարգի, հնարավոր կողմնակի ազդեցությունների և բժշկին դիմելու ցուցումների վերաբերյալ: Դեղատան աշխատակիցների զգալի մասը չի ճանաչում փորլուծության բոլոր կլինիկապես կարևոր վտանգավոր ախտանշանները, ինչպիսիք են ջրազրկման նշանները, երկարատև փորլուծությունը կամ բարձր ջերմությունը:

Մտացված արդյունքները փաստում են դեղատան աշխատակիցների շարունակական կրթության, դեղագործական հոգածության ստանդարտացված մոտեցումների և խորհրդատվական ալգորիթմների ներդրման անհրաժեշտությունը:

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