



PATIENT/CONSUMER SATISFACTION WITH PHARMACEUTICAL CARE DURING DIARRHEA

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ABSTRACT

The role of pharmaceutical workers in ensuring the quality of drug therapy is steadily increasing, especially with regard to the rational use of over-the-counter medicines. Pharmacy workers are charged with promptly advising pharmacy visitors on the choice of over-the-counter medicines and other pharmaceutical products, taking into account their efficiency, safety, availability and cost. The rational use of OTC medicines is currently considered one of the most important issues in the healthcare system of Armenia, which requires a number of legislative, methodological and other technical problems solution. The pharmacy worker (pharmacy technician/pharmacist) should contribute to the safe use of medicines, playing an important role in the education and health of the population. Different countries have different pharmaceutical care algorithms that help the pharmacy worker to perform professional consultation. The study to clarify the current status of pharmaceutical care research and implementation, and how it can be part of the practice of pharmacy. The matters and importance of pharmaceutical care have been considered in this article. It was carried out among 340 consumers. The method of study is questionnaire. During the study it becomes clear that very few percentage of consumers, consulted by a pharmacy worker, apply to a physician. Most of them do not get the necessary information from the pharmacy worker about medicine use, side effects. The pharmacy worker does not care about the patient's complaints, does not explain why that very medicine is suggested. Thus, in modern conditions, the role of pharmaceutical care grows along with the development of self-medication, becoming one of the key fields of the pharmacy's professional activity.

KEYWORDS: pharmaceutical care, pharmacy worker, patient satisfaction, diarrhea

INTRODUCTION

Currently, the professional responsibility of pharmacy specialists is growing more than ever: attention to the patient's problems and the ability to implement competent recommendations during medicine discharge is becoming increasingly important [Osina N, 2015]. Pharmacy workers and doctors are primarily involved in providing pharmaceutical care to the patient. The doctor provides medical care to the patient, and the pharmacy worker provides medicinal, informational, advisory, and organizational methodological support for pharmaceutical care [Belousova O et al., 2016].

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Pharmaceutical care is necessary element of healthcare [Jisha M, Minaz N, 2011]. Some roles of pharmacy worker have been changed and new roles introduced. There has been a shift from a product focused professional practice of pharmacy to a more patient-focused [Ansari M, Alam K, 2016; Newby B, 2019]. A pharmacy worker, as the most accessible member of healthcare workers team, should be an expert in medicine prescription, promote their safe use, as well as the population education and health [Kirshina I, 2009]. The duties of a pharmacy worker during the medicine discharge, includes, first of all, the implementation of the doctor's recommendations, he must double-check the dosage, medicine intake regimen. In addition, the pharmacy worker should facilitate the selection of the best medicine form and trade name [Fadeva OV, 2011]. They are currently employing innovative patient care strategies such as pharmaceutical care. The term of phar-

pharmaceutical care has been accepted worldwide as a philosophy of practice with the patient and community as the primary beneficiary of the pharmacist's actions [Nneoma N, 2013]. The definition has taken a wide variety of meaning to both researchers and pharmacy practitioners in different parts of the world. Pharmaceutical care was officially endorsed by the American Society of Hospital Pharmacy (ASHP) as "the direct responsible provision of medicine-related care for the purpose of achieving definite outcome that improves patient's quality of life. ASHP believes that pharmaceutical care is an important new concept that represents growth in the profession beyond clinical pharmacy as often practiced and beyond other activities of pharmacists, including medicine preparation and dispensing. All of these professional activities are important, however, and ASHP continues to be a strong proponent of the necessity for pharmacists' involvement in them. In practice, these activities should be integrated with and culminate in pharmaceutical care provided by individual pharmacists to individual patients [Jisha M, Minaz N, 2011; Chemello C et al, 2014]. Pharmaceutical care is a process in which a pharmacist cooperates with a patient and other health professionals during the entire period of medicine therapy - from the moment of medicine discharge to the full end of its action. First of all, patients need pharmaceutical care during discharge of OTC medicines. Pharmacists have an integral role in delivering pharmaceutical care to support safe and appropriate OTC medicine use. These outcomes are: cure of a disease, reduction of a patient's symptoms, arresting or slowing a disease process or preventing a disease or symptoms [Erah P, Nwazuoke J, 2002; Tong V et al, 2019]. Pharmaceutical care requires an expert knowledge of therapeutics, a good understanding of disease processes, knowledge of medicine products, strong communication skills, medicine monitoring, medicine information, therapeutic planning skills and the ability to assess and interpret physical assessment findings [Chemello C et al., 2014]. Today, the quality of pharmaceutical care is considered from different perspectives: efficiency, adequacy, economy, moral and ethical standards [Belousova OV, 2016].

Diarrhea is the most common disease among humans, with most episodes being short-lived. According to WHO, about 1.7 billion cases of diar-

rhea worldwide are reported annually. In the course of a year, approximately 5% of the US population experiences chronic diarrhea. Symptoms can be as three or more loose or watery stools a day. Infection usually causes acute diarrhea. Noninfectious etiologies are more common, when the duration of diarrhea becomes chronic. Treatment is based on the duration and specific etiology. An important public health task is to ensure the quality and standardization of pharmaceutical counseling for patients with diarrheal syndrome based on the principles of evidence-based medicine, including the timeliness of recommendations during medical care necessity [Sweetser S, 2012; Nailevich ML, 2015; Nemeth V et al 2018].

Several studies carried out in other countries on patient satisfaction with pharmaceutical care in community pharmacies showed that the provision of pharmaceutical care contributes to patient satisfaction [Traverso M et al, 2007].

Patient satisfaction is an important component of the quality of pharmaceutical care [Aharony L, Strasser S, 1993]. Received data from a patient satisfaction survey can be used for various purposes, such as the identification of potential areas for improving health care services, the differentiation of the quality of various care programs and systems. These data can serve as an indicator of service quality provided. In developed countries, patient satisfaction is a key factor in quality assessment of the health care system, whereas in developing countries, the main quality concern has been the accessibility to health care services [Aharony L, Strasser S, 1993; Bogireddy S et al, 2017].

The aim of the study was to analyze and evaluate the rate of the patient satisfaction with pharmaceutical care received in community pharmacies during diarrhea.

MATERIAL AND METHODS

In 2017, 2018 and in the first trimester of 2019, for the purpose of determining the possible ways medicines self-choice, pricing policy, and impact satisfaction among consumers who practice self-medication in case of diarrhea in the territory of the RA, a survey was carried out by the Department of Pharmaceutical Management of the YSMU among 340 customers using pharmacy networks in the regions of Armenia and Yerevan.

TABLE

PharmTest-1D (Gastrointestinal Diseases)					
Health condition	Decide yourself which medicine to take	You turn to the pharmacy worker's advice	You turn to the primary care doctor	You call an emergency	You go to hospital
SYMPTOMS OF DIARRHEA					
1. Diarrhea and loose					
2. Watery stools					
3. Diarrhea and abdominal cramps					
4. Diarrhea lasting more than 7 days					
5. Diarrhea and fever					
6. Diarrhea and blood in the stool					
7. Diarrhea and mucus in the stool					
8. Diarrhea and bloating					
9. Diarrhea and nausea					

Number of questionnaires distribution in the Republic of Armenia was determined by The Survey System Version 11.0. taking into account the number of the population surveyed, the reliability coefficient $t=1.96$, the first type error is with 5% probability ($\alpha = 0, 05$), and the evaluation accuracy is 5% ($\Delta = 5\%$).

The questionnaires are developed based on WHO standard survey questionnaires, taking into account the specificity of the work [WHO, 2006].

Taking into account the multiple content of the survey and the necessity to make it achievable for the respondents, we have presented 4 questionnaires suggested by YSMU SRC and approved by YSMU Ethics Committee: PharmTest A, PharmTest B, PharmTest C, PharmTest D, each of which includes a specific group of questions [Avagyan et al., 2019].

The survey is performed during customer service in the pharmacy chain of the RA, and a priority analysis is made to evaluate the role of pharmacy workers during medicine offering through the following issues:

- Sources of counseling,
- Frequency of medicine purchasing according to a pharmacy worker advise,
- Interest of a pharmacy worker in the nature of the complaint,
- Pharmacy worker consultation about medicines purchase,
- The advice consumer gets from the pharmacy worker about possible side effects of the needed medicine,

- The pharmacist's instructions about how to take medicine,
- Data on applying for a physician by the advice of a pharmacy worker,
- Consumers' interest in the medicine offered by pharmacy worker

Analyzes of other data related to pharmacy activity assessment will be commented later.

Data obtained as a result of surveys were registered in statistical SPSS software package (version 12.0). Pearson's correlation coefficient was used to estimate the relationship between qualitative characteristics; the Ets adjusted coefficient was used in 2*2 tables. The first type error is with 5% probability ($\alpha = 0, 05$). Frequencies, relationships, percentages of the descriptive statistics were used to describe groups.

RESULTS

The results of the questionnaire survey carried out among 339 patients with different ages and education.

The survey revealed that most consumers use medicines in case of diarrhea independently, without any consultation, 19% use medicines according to the pharmacy worker consultation, 11% apply to hospital physician, and 10% apply to district physician, 4% use internet resources and only 1% use advertising information (Fig.1).

In fact, it turns out that when it is required to take a medicine in case of diarrhea, most consumers resort not to the pharmacy worker but decide

what medicines must be taken by themselves, so they use self-medication. And this fact indicates that the self-medication process is not controlled, as only direct consultation with pharmacists provides efficient professional guidance for safe and appropriate OTC use.

It turns out that more than half (55%) of respondents use medicines without specialist consultation.

In question how often do you buy medicines following the advice of a pharmacy worker in case of diarrhea, 81% of consumers have found it difficult to remember, 14% answered 3-4 times per year, 3% - once a month, 2% - twice a month (Fig.2). The survey found that only a small percentage of consumers received consultations from the pharmacy worker on the choice of the medicine.

A large number of statistical data show that self-medication can be controlled and make rational by help of pharmacy worker consultation.

In question when buying medicines for diarrhea following the advice of a pharmacy worker, is he/she interested in the nature of your complaints, the answers were distributed as follows: 30% - yes, 23% - found it difficult to remember, 18% - sometimes, 17% - depends on a pharmacy worker, 12% have stated that pharmacy workers are not interested in the nature of the complaint (Fig.3).

The study results revealed that most pharmacy workers are not interested in the nature of the diseases and in complains. Based on literature data, we can say that the base of consumers' self-medication is often the wrong self-diagnosis as different diseases may have the same symptoms. That's the reason the pharmacist should help the consumer to reveal the problem through questions.

In question when buying medicines for diarrhea following the advice of a pharmacy worker, does he/she explain why he/she offers that very medication, 28% of consumers answered yes, 24% - sometimes, 19% - found it difficult to remember, 18% think that it depends on the pharmacy worker, 11% answered no (Fig.4). In the event of such a result, most consumers cannot be satisfied while leaving the pharmacy, so the confidence in the pharmacy worker cannot increase. The consumer should receive a fully-fledged information from the pharmacy worker, whether he/she should use the very medication for specific benefits and results. 20% of the respondents did not remember whether the

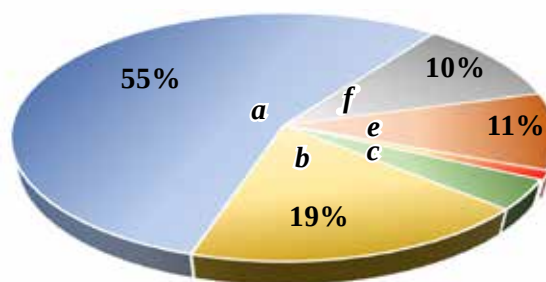


FIGURE 1. Sources of counseling
Groups: (a) - decide yourself which medication to take, (b) - pharmacy worker, (c) - use information from the internet, (d) - use advertisement information, (e) - hospital doctor, (f) - primary care doctor

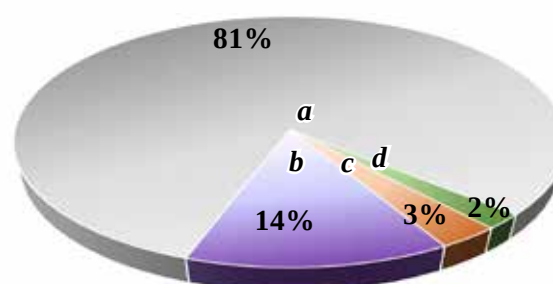


FIGURE 2. Frequency of medicine purchasing according to a pharmacy worker advise.
Groups: (a) - It is difficult for me to remember, (b) - 3-4 times a year, (c) - once a month, (d) - twice a month

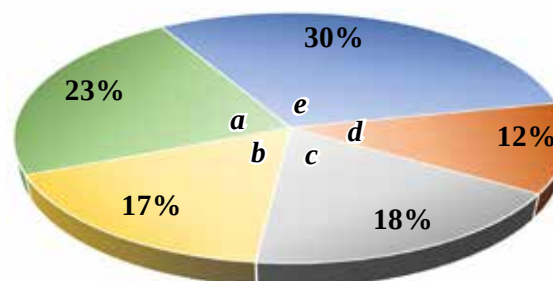


FIGURE 3. Interest of a pharmacy worker in the nature of the complaint. Groups: (a) - it is difficult for me to remember, (b) - it depends on the pharmacy worker, (c) - sometimes interested, (d) - not interested, (e) - interested

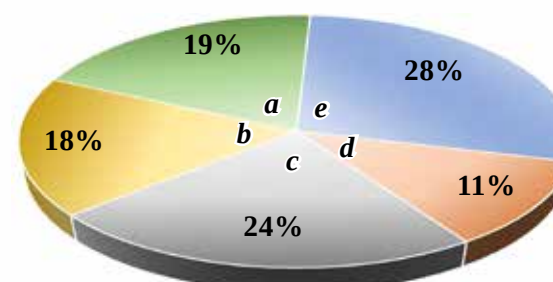


FIGURE 4. Pharmacy worker consultation about medicines purchase.
Groups: (a) - it is difficult for me to remember, (b) - it depends on the pharmacy worker, (c) - sometimes explained, (d) - not explained, (e) - explained

pharmacy worker warned about possible side effects of the medicine he was offered, 22% said that he was not warned, and only 23% were informed about the side effects of the medicine. 19% were sometimes informed about the side effects of the offered medicine, and 16% note that it depends on the pharmacy worker (Fig.5). The overwhelming majority of consumers are unaware of the side effects of medication, which, according to WHO, is considered a risk factor in self-medication. It turns out that the consumer can use medicines without realizing the actual damage to their health, which can be the cause of further health problems.

In question when buying medicines for diarrhea following the advice of a pharmacy worker, does he/she warn you about the usage procedures of the medicine that he/she offers, 43% of consumers answered yes, 18% found it difficult to remember, 15% think that it depends on the pharmacy worker, 16% of pharmacy workers inform sometimes, and 8% do not inform at all (Fig.6). According to this data it is impossible to avoid not rational use of medicine.

It should be noted that the Ethics Code of the Pharmacy Workers states that “the pharmacy worker should always provide the necessary information about the medicines. The pharmacist’s responsibility is to report all the information about the medicine, the patient’s right is to receive that information”.

The study revealed that 50% of consumers never had applied to a doctor after a pharmacy worker’s advise in case of diarrhea, 27% found it difficult to remember, 14% applied, and 9% answered sometimes (Fig.7).

Globally, an estimated 2 billion cases of diarrheal disease occur each year, and 1.9 million children under the age of 5 years, mostly in developing countries, die from diarrhea. Diarrhea is the second leading cause of death among children under five years of age. Therefore, it should not be forgotten that the pharmacy worker is a mediator between the physician and the patient. At the time of the medication choice, a pharmacy employee should not replace the physician because he does not know the personality of the patient’s organism and the course of the disease. In case of necessity, the pharmacy staff should guide the patient to the doctor.

The survey revealed that 36% of consumers are not interested in what pharmacological group medicine pharmacy worker offers, 33% are always in-

terested, and 31% - sometimes (Fig.8). To avoid wrong self-medication, the pharmacy worker should present to the consumer what pharmaco-

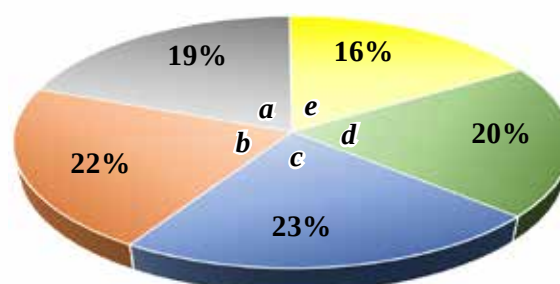


FIGURE 5. The advice consumer gets from the pharmacy worker about possible side effects. Groups: (a) - sometimes warned, (b) - not warned, (c) - warned, (d) - it is difficult for me to remember, (e) - it depends on the pharmacy worker

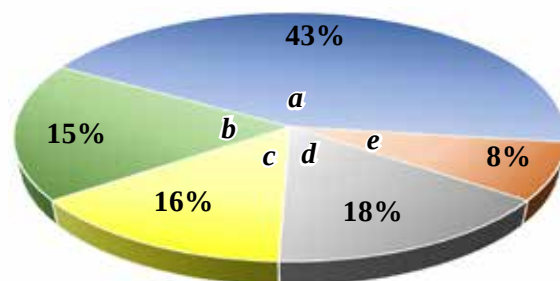


FIGURE 6. The pharmacist's instructions about how to take medicine. Groups: (a) - warned, (b) - it depends on the pharmacy worker, (c) - sometimes warned, (d) - it is difficult for me to remember, (e) - not warned

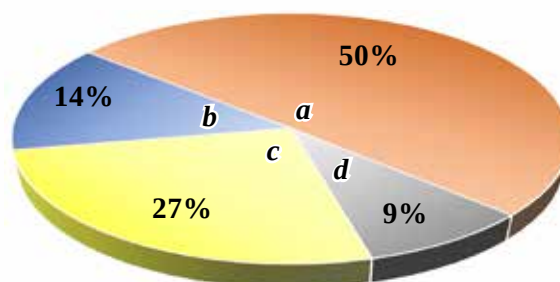


FIGURE 7. Data on applying for a physician by the advice of a pharmacy worker. Groups: (a) - not applied, (b) - applied, (c) - it is difficult for me to remember, (d) - sometimes applied

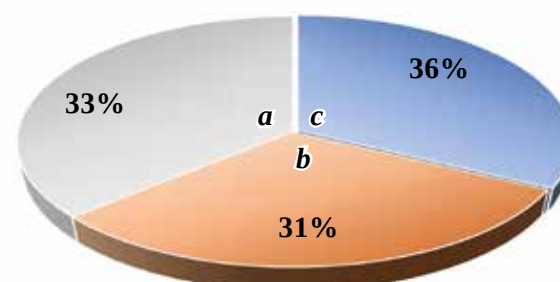


FIGURE 8. Consumers' interest in the medicine offered by pharmacy worker. Groups: (a) - always interested, (b) - sometimes interested, (c) - not interested

logical group of medicines he/she offers. Since there are cases when the consumer does not know pharmacological groups, he can take 2 medicines of the same group simultaneously.

DISCUSSION

The study revealed that most customers (55%) decide by themselves which medicine to take, 19% turn to pharmacy workers for advice, 11% turn to hospital doctor, 10% turn to district physician for advice. Only a small percentage of consumers choose medicine using internet information (4%) and advertising (1%). 81% of the respondents found it difficult to remember how often they buy medicine according to pharmacy worker advice, 14% answered 3-4 times per year, 3% - once a month, 2% - twice a month. It was interesting to know whether pharmacy worker is interested in complains nature. The following result was revealed: yes - 30%, found it difficult to remember - 23%, it depends on the pharmacy worker - 17%, sometimes - 18%, no - 12%. In the inquiry whether the pharmacy worker explains why the very medicine is offered, consumers gave the following answers: 23% - yes, 20% - found it difficult to remember, sometimes - 19%, it depends on the pharmacy worker - 16%, no - 22%. In the inquiry whether the pharmacy worker warns about the side effects of the offered medicine, the following answers were given: found it difficult to remember - 20%, yes - 23%, no - 22%, sometimes - 19%, it depends on the pharmacy worker - 16%. In the inquiry whether the pharmacy worker warn about the usage procedures of the offered medicine, consumers answer with the following percentages: yes - 43%, found it difficult to remember - 18%, it de-

pends on the pharmacy worker - 15%, sometimes - 16%, no - 8%. Only 14% of the respondents applied to a physician by the pharmacist's advice in the case of diarrhea, the 50% never applied, 9% applied sometimes, and 27% found it difficult to remember. The study also revealed that only 33% of consumers are always interested in the pharmacological group of the medicine offered by pharmacy worker in case of diarrhea, 31% do it sometimes, and 36% never cares about it.

CONCLUSION

During the study it turned out that the majority of consumers who took part in the survey decide by themselves what medicine can be used in case of diarrhea, and 19% apply to the pharmacist's advice. The majority of consumers (81%) have found it difficult to remember how often they buy medicines by the pharmacist's advice.

The survey revealed that only 30% of pharmacy workers are interested in complaints, and only 28% explain why the very medicine is offered. Very few pharmacy workers warn the consumer about the side effects of the offered medicine. The majority of consumers have never applied to a physician in case of diarrhea by pharmacist's advice. The results of the survey showed that only 33% of consumers are interested in the pharmacological group of the offered medicine. Studies have shown that the patient will be more satisfied if the aim of pharmaceutical care is focused on a patient. It becomes clear that there is a necessity to develop pharmaceutical care algorithms that will help the pharmacy worker in consumer consultation and, in case of necessity, in correct advice to apply to a physician.

REFERENCES

1. Aharony L, Strasser S. Patient Satisfaction: What we know about and what we still need to explore. *Med Care Rev.* 1993; 50(1): 49-79.
2. Ansari M, Alam K. Pharmacy practice in Nepal. *Pharmacy practice in developing countries: Elsevier.* 2016; 147-168.
3. Avagyan SA, Simonyan MH, Zilfyan AV, Barsseghyan AB, Nazaryan LG, Raisyan MG. Self-medication study and evaluation in case of common cold and cough in Republic of Armenia. *The New Armenian Medical Journal.* 2019; 13(3):11-20
4. Belousova OV, Belousova EA, Burgeva AS. [Monitoring of the provision of the pharmaceutical care to the population of the city of Belgorod] [Published in Russian]. *Scientific results of biomedical research.* 2016; 1: 48-53.
5. Bogireddy S, Rathinavelu M, Kalimuthu R, Padmanabha Y. Patient Satisfaction and Experiences towards Paramedical Services in a Sec-

- ondary Care Referral Healthcare Setting of India. Indian journal of pharmacy practice. 2016; 1: 37-42.
6. Chemello C, Souza F, Patricio E, Farias M. Pharmaceutical care as a strategy to improve the safety and effectiveness of patients' pharmacotherapy at a pharmacy school: a practical proposal. Brazilian Journal of Pharmaceutical Sciences. 2014; 50(1): 185-193.
 7. Erah P, Nwazuoke J. Identification of standards for pharmaceutical care in Benin city. Tropical Journal of Pharmaceutical Research. 2002; 1(2): 55-66.
 8. Fadeva OV. [Pharmaceutical care] [Published in Russian]. Journal AAGIUV. 2011; 4.
 9. Fazilova WCh, Egorova SN, Achmetova TA, Murtazina GCh, Cravchenko IE, Minapov LN. [Pharmaceutical care during diarrhea] [Published in Russian]. Manual. 2014; pp. 42-43
 10. Jisha M, Minaz N, Understanding the pharmaceutical care concept: a review. International research journal of pharmacy. 2011; 2(9): 12-14.
 11. Kirshina IA. [Development of organizational approaches to optimization of services of dispensing to patient] [Published in Russian]. Abstract. 2009; 23.
 12. Nailevich ML. [Development. Development of methodological approaches to the creation of the information system of the pharmaceutical advice for nonprescription medicines] [Published in Russian]. Medical dissertation. 2015.
 13. Nemeth V, Zulfiqar H, Pfleghaar N. Diarrhea. National Center for Biotechnology Information. 2018.
 14. Newby B. Expanding the role of pharmacy technicians to facilitate a proactive pharmacist practice. American Journal of Health-System Pharmacy. 2019; 76(6): 398-402.
 15. Okpalanma NN, Okonta MJ, Ilodigwe EE. Development and validation of questionnaire for the assessment of pharmaceutical care by community pharmacists in a state in Nigeria. Journal of Biology, Agriculture and Healthcare. 2013; 3(7): 16-25.
 16. Osina NA. [Satisfaction of population with pharmaceutical care] [Published in Russian]. Medical internet conferences. 2015; 5.
 17. Sweetser S. Evaluating the patient with diarrhea: A Case-based approach. National center for biotechnology information. 2012; 87(6): 596-602.
 18. Tong V, Raynor D, Aslani P. OTC Medication and Pharmaceutical Care. The Pharmacist Guide to Implementing Pharmaceutical Care. 2019; pp. 261-276.
 19. Traverso ML, Salamano M, Botta C, Colautti M, Palchik V, Pérez B. Questionnaire to assess patient satisfaction with pharmaceutical in Spanish language. International Journal for Quality in Health Care. 2007; 19(4): 217-224
 20. World Health Organization. WHO SAGE Survey Manual: The WHO Study on Global Ageing and Adult Health (SAGE). Geneva, World Health Organization. 2006.