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EVALUATION OF PHARMACIST INTERVENTIONS AS A PART OF A MULTIDISCIPLINARY PAIN MANAGEMENT TEAM

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ABSTRACT

Pharmacists have an important role within the healthcare system. They can offer some services to the patients including consultation, patient education and therapeutic management. Community pharmacists can assess the type and severity of pain, monitor treatment and guide medication regulation to improve the treatment of the pain. The involvement of pharmacists in nonprescription medication counseling about pain will increase the public's ability to understand the risks and benefits of over-the-counter drugs.

Aim and objects was to study and analyze professional abilities and role of pharmacy employees during the pain management. The survey was conducted among 285 employees of licensed pharmacies in Armenia with the help of questionnaires, the number of which was determined according to "The Survey System Version 11.0". Survey data were entered and analyzed using SPSS software package. The study was quantitative investigation and the questionnaire was developed based on the World Health Organization standard questionnaire. As a result of our research, it became clear that pharmacists have pure, indistinct knowledge about adverse reactions of over-the-counter analgesics and pharmacy employees in the Republic of Armenia have incomplete knowledge and ideas about pain management. According to the study pharmacists' information sources was not reliable and the use of these sources in professional pharmaceutical practice were not inappropriate. Involvement of pharmacists in primary care pain management is very important and pain management training of pharmacy staffs should be encouraged.

Pharmacist should be a part of a multidisciplinary pain management team and for this reason comprehensive information on pain management as well as development of practical skills should be included in continuing education programs for pharmacists.

KEYWORDS: *pain management, pharmacotherapy, over-the-counter analgesic, adverse effects, pharmacy employees*

INTRODUCTION

The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage " [*IASP terminology, 2017*]. The global problem of pain is very significant, more attention should be paid to assessing the burden of non-fatal health outcomes [*GBD 2016*]. Pain leads to a tremendous part of finances within the healthcare system with continuous rehabilitation of patients with adverse pain sensations, which might reduce not only their quality of life but also their productivity at work reducing the pace of our economy and it becomes an economical burden [*Yam MF et al.,2018*].

Pain is a general reason for self-medication with over-the-counter analgesics. Common risks associated with over-the-counter pain medications use can include increased risk of drug–drug inter-

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actions and adverse effects, wrong self-diagnosis, resulting in serious illness, therapeutic errors [*American College of Preventive Medicine, 2011*]. Considering the heterogeneity of patients' knowledge and behaviour reported worldwide, inappropriate use of over-the-counter pain medication should not be underestimated and ignored.

Whereas a lot of consumers self-medicate with over-the-counter analgesics and are uninformed of possibly hazardous drug interactions, proper counseling on the corresponding use of these medication can help minimize adverse effects and provide positive clinical outcomes.Community pharmacists are the most accessible healthcare professionals and this provides a unique opportunity for pharmacy staffs to play a essential role in ensuring the quality use of medications by providing patients with counseling on the safe, correct and effective use of drugs [*Netere AK et al.,2018*]. Community pharmacists should be trained to manage self-medication and counseling with over-the-counter analgesics [*Fendrick A et al., 2008; Goh L et al., 2009; Gavaza P, Vickery P, 2018; Perrot S et al., 2019*]. Research in Canada shows that pharmacy employees can play an important role in the pharmacotherapeutic management of pain suffering patients by providing information, discussing barriers about pain and its treatment, and monitoring pain disability, and by appropriately managing pharmacotherapy to optimize effectiveness while minimizing adverse effects [*Jouini G. et al, 2014*]. In many societies, the pharmacist is the most available health professional to the public and sometimes they are first one to talk to patients. They can be big advocates for pain relief as they discuss with patients the importance of pain treatment and direct them to the right doctor. The survey in Virginia showed that a significant number of responding pharmacists indicated that they had less than "good" knowledge of pain management. The measures must be taken to educate pharmacists about pain treatment, including the use of over-the-counter analgesics, especially new methods of noncancer pain management [*Mehuys E et al., 2019*].

Over-the-counter analgesics are used very often and they are available in various brands, package sizes, formulations, and dosage. They can be used for a range of different types of pain [*Moore A.R., 2015*]. During pain management, as a principal rule, attention should be taken, especially for over-the-counter medicine, to ensure that patients are aware of the individual side effects and risks of these medications. In pain management, pharmacists can use Acetaminophen and nonsteroidal anti-inflammatory drugs. Acetaminophen can be effective for mild to moderate pain. Risks of acetaminophen include dose-dependent liver toxicity, especially when the drug is taken at high doses, with alcohol, or by those with liver disease [*Major JM,2016*].

Nonsteroidal anti-inflammatory drugs such as aspirin, ibuprofen, and naproxen can provide significant pain relief for inflammation, such as from arthritis, bone fractures or tumors, muscle pains, headache, and acute pain caused by injury or surgery. Nonselective nonsteroidal anti-inflammatory drugs (those that inhibit the activity of both the cyclooxygenase [COX]-1 and COX-2 enzymes) can be associated with gastritis, gastric ulcers, and gastrointestinal bleeding. Conversely, COX-2 inhibitors have fewer gastrointestinal adverse effects. The use of nonsteroidal anti-inflammatory drugs may be associated with renal insufficiency, hypertension, and cardiac-related events [*Evoy KE,2017*].

The goal of the research is to study and evaluate pharmacist interventions as a part of a multidisciplinary pain management team and to identify gaps in education of pain management with over-the-counter analgesics.

Material and Methods

This is a cross-sectional, descriptive and analytical study conducted in Yerevan (Armenia) by the Department of Pharmaceutical Management of the YSMU. Participants completed an anonymous self-administered paper-based questionnaire. The questionnaire was written in Armenian and contained closed and open questions.

Ethical approval: The ethical committee at YSMU operates according to the administration No. 12, decision issued on 10.11.2009. The questionnaires were approved by the Ethics Committee of YSMU during the regular session. According to the Declaration of Helsinki, the confidentiality of survey participants was preserved, the questionnaires were filled in anonymously. To preserve the ethical side of the work, each participant was introduced to the purpose of the study and the principle of voluntary par-

To overcome it is possible, due to the uniting the knowledge and will of all doctors in the world

ticipation.They were also informed that the data they provide in the study will be used and published. To motivate the participants to complete the questionnaires, they were made aware of the scientific value of the research and clear instructions were given on how to fill out the questionnaire. Prior to the survey, verbal consent was obtained from all participants. Confidentiality of data was maintained throughout the study. All participants were given enough time for reading, understanding and filling in the questionnaire.

Sample size and sampling technique: The study was carried out among 285 pharmacy employees selected randomly and invited to participate. The number of questionnaires distributed in the Yerevan was determined by The Survey System Version 11.0 taking into account the number of the population surveyed , taking into consideration the volume of the surveyed, the first type error is with 5% probability ($\alpha = 0, 05$), the evaluation accuracy is 3% ($\Delta = 3\%$). We considered the worst-case scenario $P = 0.5$, since the results of similar studies conducted in Armenia were not found.

Data collection: During 2020- 2021 participants completed an anonymous self-administered questionnaire (a structured questionnaire) and as a result of statistical processing of the data obtained during a sociological survey, we received the final result. The questionnaire was developed after a comprehensive literature search in well-known databases.

Data analysis: data obtained as a result of surveys were registered in statistical SPSS software package, version 12.0 (IBM Corp., Armonk, NY). Frequencies, relationships, percentages of the descriptive statistics were used to describe groups. Descriptive information was presented as frequencies and percentages. The level of statistical significance was $p < 0.05$ for all comparisons.

RESULTS

The results of the questionnaire survey carried out among 285 pharmacy employees with different ages, education and work experience.

During the survey was found out that 14% of respondents did not pay attention to the customer's favorite analgesics and could not answer to this question, which is a very disturbing situation.

ON THE QUESTION WHICH ARE THE BEST-SELLING ANALGESICS AS PER CUSTOMER'S REQUIREMENT , responses were divided into two groups according to composition of the medicines: single-agent medicines (80%) and combined medicines (20%). Responses which are contain medicines with one active ingredient were grouped according to the active substance. The answers collecting from consumers: nimesulide, ketoprofen, ibuprofen, diclof-

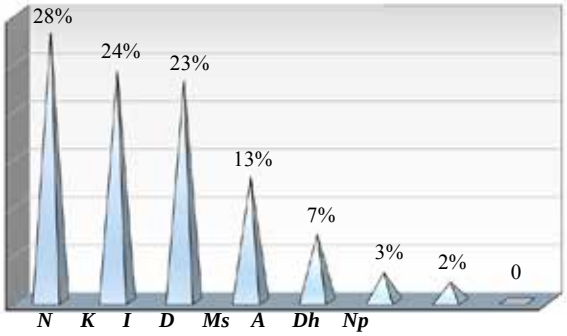

FIGURE 1 *Best-selling analgesics (with one active substance) as per customer's requirement by pharmacy employees. Where (N) Nimesulide , (K) Ketoprofen, (I) Ibuprofen, (D) Diclofenac, (Ms) Metamizole sodium, (A) Acetaminophen, (Dh) Drotaverine hydrochloride, (Np) Naproxen*

TABLE 1.

Best-selling combined analgesics as per customer's requirement by pharmacy employees

Fixed-dose combination medicines	Composition	Customer's requirement (%)
Ascofen	Acetylsalicylic Acid, Caffeine, Acetaminophen	36%
Spazmalgone	Metamizole sodium monohydrate, Pitofenone hydrochloride, Fenpiverinum bromide	15%
Tempalgin	Metamizole sodium monohydrate, Triacetonamine	14%
Citramon	Acetylsalicylic acid, Acetaminophen , Caffeine	9%
Caffetin	Acetaminophen, Propyphenazone, Caffeine Codeine	7%
Pentalgin	Metamizole sodium, Acetaminophen, Caffeine, Phenobarbital, Codeine	7%
Solpadein	Caffeine, Codeine, Acetaminophen	5%
Capsicam	Nonivamide, Dimethyl sulfoxide, Benzyl nicotinate	4%
Next	Ibuprofen, Acetaminophen	3%

enac, metamizole sodium, acetaminophen, rotaverine hydrochloride, naproxen (see Fig. 1).

During the investigation, we have separated the fixed-dose combination analgesics group, which is shown in the tabel 1.

Pharmacists' over-the-counter analgesics recommendations: According to survey 12% of the pharmacy employees were unable/avoided to respond to this question. When discussing the responses received from survey, listed medicines , again, were divided into two groups: single-agent medicines (81%) and combined medicines (19%):

Considering the responses of pharmacists about over-the-counter analgesics recommendations and preferences were the following: ketoprofen, ibuprofen, nimesulide, diclofenac, naproxen, drotaverine hydrochloride, acetaminophen, metamizole sodium meloxicam (see Fig 2).

The research reveals that the analgesics mentioned in advice of pharmacy employees and consumers preferences are practically the same. Responses were grouped again according to the active ingredient.

Pharmacy employees also suggested fixed-dose combination analgesics which represented in table 2.

As shown in picture in case of fixed-dose combination analgesics the preferences of pharmacy employees are slightly different from those of consumers.

Pharmacists' perceptions of analgesic adverse reactions: Based on survey data 24% of respondents are unaware of side effects of over-the-counter analgesics.

Table 2.

Combined analgesics suggested by pharmacy employees

Fixed-dose combination medicines	Composition	Pharmacy employees suggestion (%)
Spazmalgone	Metamizole sodium monohydrate, Pitofenone hydrochloride, Fenpiverinum bromide	23%
Next	Ibuprofen, Acetaminophen	19%
Ascofen	Acetylsalicylic Acid, Caffeine, Acetaminophen	17%
Caffetin	Acetaminophen, Propyphenazone, Caffeine Codeine	11%
Pentalgin	Metamizole sodium, Acetaminophen, Caffeine, Phenobarbital, Codeine	8%
Tempalgin	Metamizole sodium monohydrate, Triacetonamine	8 %
Citramon	Acetylsalicylic acid, Acetaminophen, Caffeine	7%
Solpadein	Caffeine, Codeine, Acetaminophen	7%

The listed side effects are grouped as follows adverse reaction in gastrointestinal, cardiovascular system), allergy, hepatotoxicity, renal toxicity , impact on nervous system (4%) (see Fig. 3).

Effects on the gastrointestinal system include the following side effects listed by pharmacy em-

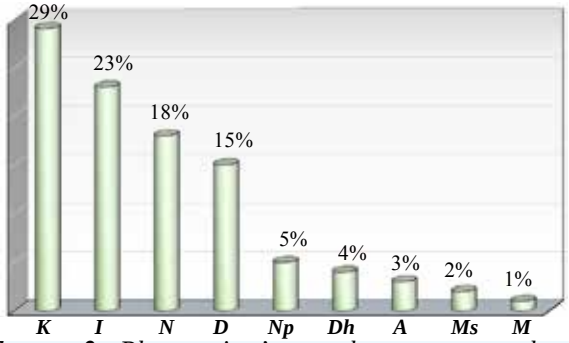

Figure 2. *Pharmacists' over-the-counter analgesics recommendations. (K) Ketoprofen, (I) Ibuprofen, (N) Nimesulide, (D) Diclofenac, (Np)Naproxen, (Dh) Drotaverine hydrochloride, (A)Acetaminophen, (Ms) Metamizole sodium, (M)Meloxicam*

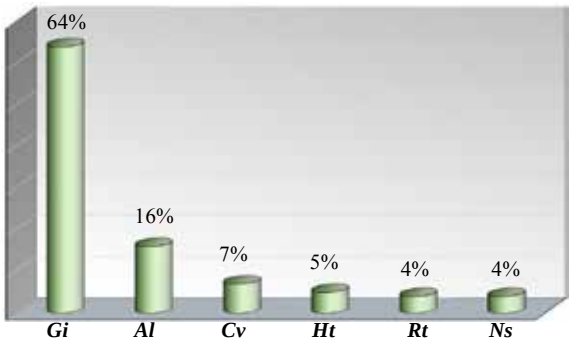

Figure 3. *Pharmacists' perceptions of analgesics side effects. (Gi) Gastrointestinal, (Al) Allergy, (Cv) Cardiovascular system, (Ht) Hepatotoxicity, (Rt) Renal toxicity, (Ns) Nervous system*

ployees: stomach pain, nausea, stomach ulcer, meteorism, constipation, dyspepsia, epigastric burning, vomiting, digestive disorder, diarrhea.

With regard to the effects on the cardiovascular system, pharmacy employees listed the following side effects: tachycardia, arrhythmia, increased blood pressure and the nervous system effects include dizziness, headache, and so on.

PHARMACISTS' INFORMATION SOURCES FOR OVER-THE-COUNTER DRUG COUNSELING: Over-the-counter drug counseling is a daily practice and routine work among pharmacists. Sources of information with good evidence could be used daily by community pharmacists, especially as regards nonprescription medication counseling. Thus, pharmacists were questioned about the information sources for over-the-counter drug counseling and the survey revealed that the majority of pharmacists (55%) make recommendations for over-the-counter drugs based on Internet, 28% use labels, 6% follow professional books recommendations, 4% standard schemes and 4% TV, newspapers and only 3% choose lectures (see Fig.4).

DISCUSSION

Pharmacists must play a essential role in educating patients about the appropriate over-the-counter pain medications and inform them of the correct way to take it and the right timing between doses, report about side effects and contraindications. As shown in the survey most consumers in Armenia prefer nimesulide, which is a nonsteroidal antiinflammatory drug (NSAID) with relative specificity for COX-2. This is quite disturbing because nimesulide use is associated with an approximately twofold increased risk for hepatotoxicity. The association between nimesulide use and related hepatotoxicity is supported by comprehensive disproportionality analysis, showing an increased rate of reported hepatic adverse events with nimesulide, compared with other nonsteroidal anti-inflammatory drugs [*Donati M et al., 2016; Jeongyoon K et al., 2019*]. The pharmaceutical policy of countries regarding Nimesulide are very different, for example Nimesulide has never been marketed in some countries such as the USA and Australia, in Thailand, only the tablet form of the medicin is available; the suspension form was withdrawn. In India, tablet and gel forms have been available , in spite of the fact that some hepatic adverse reactions have been reported with nimesulide to the Indian National Pharmacovigilance Centre. Nimesulide is marketed in Brazil as a prescription medicine. The drug is available as tablets, paediatric suspensions, suppositories and paediatric drops [*WHO Pharmaceuticals Newsletter, 2002; Bethesda 2012*]. In the Republic of Armenia, nimesulide is registered as a medicine for internal use and is included in the list of prescription drugs [*Scientific center of drug and medical technology expertise after academician E. Gabrielyan,2019*], but this government decision and the fine established by the Code of Administrative Offenses do not prohibited pharmacies from selling nimesulide without a prescription. Other preferred analgesics, such as ketoprofen and ibuprofen, may also have a hepatotoxic effect if the therapeutic dose exceeds Defined Daily Dose and the duration of treatment is not applied correctly.

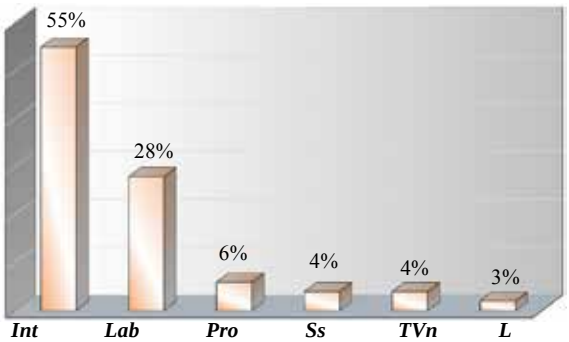

FIGURE 4. *Pharmacists' information sources for over-the-counter drug counseling (Int) Internet, (Lab) Labels, (Pro) Professional books, (Ss) Standard schemes, (TVn) TV, newspapers, (L) Lectures*

Based on above mentioned, in the Republic of Armenia pharmacist must carefully educate and guide patients in managing and controlling their pain through safe pharmacotherapy approach.

It is also disturbing that nimesulide is in the third place in the list of recommended analgesics of pharmacy staff. Therefore, it can be said that pharmacy staff do not have sufficient knowledge to perform pain management with relatively safe medications. Pharmacy staff's training needs are also indicated by their ignorance about analgesics

(12%), lack of attention to analgesics purchased by consumers (14%), and general ignorance of analgesic side effects and incomplete knowledge (24%). Pharmaceutical services must be in accordance with the World Health Organization (WHO) guidelines on Good Pharmacy Practice, for which they must have the appropriate education, knowledge and skills.

Many countries place importance on the pharmacist involvement in pain management. For this reason, some countries have developed guidelines about the management of pain for pharmacists, for example in Malaysia in 2018 , Ministry of Health Malaysia with contribution from Pharmaceutical Services Programme was supplemented "Pain medication therapy management"guideline for pharmacists [*Ministry of Health Malaysia Pharmaceutical Services Programme,2018*].

Important data were found, such as poor knowledge about the issues related to Evidence Based Health and the main factors considered to choose an over-the-counter medicine for a patient. In total, 55% responded that they always used Internet, labels use 28% of pharmacist, 6% always consulted professional books, standard schemes and TV, newspapers apply equally 4%, while only 3% always took advice from lectures.

Better information and education for health professionals is essential to improving management of pain in primary care, which should lead to prompt diagnosis and more effective treatment.

Conclusion

Community pharmacists are in the best position to provide advice that will maximize pain regulation and target the most appropriate analgesic therapy for patients with pain. For this purpose government must plan and perform continuous professional development strategies to improve current and future performance. Pharmacy employees have the need for improved pharmacy education on the efficacy and safety of analgesics used at over-the-counter dose and duration when advising on the treatment of pain. They must complete the necessary training to update their knowledge and skills in pain management. Pharmaceutical education must help counter the stereotypes, myths, misunderstandings, that disturb better care. Programs should be more oriented on practical skills and make sure that the programs fulfill the criteria of high quality education. Educational programmes should have the purpose of including the pharmacists in pain management as a full member of multidisciplinary pain management team.

REFERENCES

1. *IASP terminology – 2017. International Association for the Study of Pain (IASP) IASP terminology, December 2017*. Available from: https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698#Pain
2. *GBD- 2016. Disease and Injury Incidence and Prevalence Collaborators*. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2106: a systematic analysis for Global. Pubmed 2017 Sep 16;390(10100):1211-1259. doi: 10.1016/S0140-6736(17)32154-2. Available from: https://www.ncbi.nlm.nih.gov/pubmed/28919117
3. *American College of Preventive Medicine - 2011. American College of Preventive Medicine* .Over the counter medications: use in general and special populations , therapeutic errors, misuse, storage and disposal. A Clinical Reference . 2011
4. *Perrot S. et al.- 2019. Perrot S, Cittée J, Louis P, Quentin B, Robert C, Milon JY, Bismut H, Baumelou A*. Self-medication in pain management: The state of the art of pharmacists' role for optimal Over-The-Counter analgesic use. Eur J Pain. 2019 Nov;23(10):1747-1762. doi: 10.1002/ejp.1459. Epub 2019 Aug 7.
5. *Gavaza P., Vickery P. B. -2018. Gavaza P., Vickery P. B.* Gaps in the Pharmacist's Pain Management Role. Practical pain management. 13 Articles in Volume 18, Issue #6, September 5, 2018
6. *Fendrick A. M. et al.- 2008. Fendrick A. M., Deborah E. P., Johnson Grace E*. OTC an-

algesics and drug interactions: clinical implications. Med Prim Care. 2008;2:2. doi: 10.1186/1750-4732-2-2 Osteopath

7. *Goh L. Y et al – 2009. Goh L. Y., Vitry A., Semple S. J., Esterman A., Luszcz M. A.* Self-medication with over-the-counter drugs and complementary medications in South Australia's elderly population. BMC Complement Altern Med. 2009; 9: 42 doi: 10.1186/1472-6882-9-42
8. *Jouini G et al.– 2014. Jouini G., Choinière M., Martin E., Sylvie Perreault, Djamal Berbiche, David Lussier, Eveline Hudon, and Lyne Lalonde.* Pharmacotherapeutic management of chronic noncancer pain in primary care: lessons for pharmacists. Published online 2014 Mar 24. doi: 10.2147/JPR.S56884
9. *Mehuys E et al.- 2019. Mehuys E, Crombez G, Paemeleire K, Adriaens E, Van Hees T, Demarche S, Christiaens T, Van Bortel L6, Van Tongelen I7, Remon JP7, Boussery K7.* Self-Medication With Over-the-Counter Analgesics: A Survey of Patient Characteristics and Concerns About Pain Medication. 2019 Feb;20(2):215-223. doi: 10.1016/j.jpain.2018.09.003. Epub 2018 Sep 28.
10. *Moore A.R et al. – 2015. Moore A.R., Wiffen P. J., Sheena Derry, Terry Maguire, Yvonne M Roy, Laila Tyrrell.* Non□prescription (OTC) oral analgesics for acute pain □ an overview of Cochrane reviews. Cochrane Database Syst Rev. 2015 Nov; 2015(11): CD010794. Published online 2015 Nov 4. doi: 10.1002/14651858.CD010794.pub2
11. *Major JM et al. – 2016. Major JM, Zhou EH, Wong H-L, et al.* Trends in rates of acetaminophen-related adverse events in the United States. Pharmacoepidemiol Drug Saf. 2016;25(5):590-598. doi:10.1002/pds.3906
12. *Evoy KE et al.– 2017. Evoy KE, Morrison MD, Saklad SR. Abuse, Misuse of Pregabalin and Gabapentin.* Drugs. 2017;77(4):403-426. doi:10.1007/s40265-017-0700-x
13. *Jeongyoon K. et al.- 2019. Jeongyoon K., Seungyeon K., Hyejin Y., Euni L.* Nimesulide-induced hepatotoxicity: A systematic review and meta-analysis. PLoS One. 2019; 14(1): e0209264. 13Published online 2019 Jan 24. doi: 10.1371/journal.pone.0209264
14. *Leone R., Scuro L.A – 2016. Leone R., Scuro L.A.* Risk of acute and serious liver injury associated to nimesulide and other NSAIDs: data from drug-induced liver injury case–control study in Italy. Br J Clin Pharmacol (2016) 82 238–248 238
15. *Bethesda – 2012. Bethesda.* National Institute of Diabetes and Digestive and Kidney Diseases; 2012-.Drug Records, LiverTox: Clinical and Research Information on Drug-Induced Liver Injury. Bookshelf ID: NBK547948P-MID: 31643281 Available from https://www.ncbi.nlm.nih.gov/books/NBK547948/
16. *WHO- 2022. WHO Pharmaceuticals Newsletter 2002*, No. 04 http://apps.who.int/medicinedocs/en/d/Js4943e/3.html
17. *Scientific center of drug and medical technology expertise after academician E. Gabrielyan* – 2019. *Scientific center of drug and medical technology expertise after academician E. Gabrielyan*, List of prescribed drugs registered in the Republic of Armenia (30.11.2019) http://www.pharm.am/index.php/en/list-of-registred-prescription-drugs-in-republic-of-armenia/2707-list-of-registred-prescription-drugs-in-republic-of-armenia-up-to-30-11-2016
18. *Ministry of Health Malaysia Pharmaceutical Services Programme - 2018Ministry of Health Malaysia Pharmaceutical Services Programme*. Pain medication therapy management: guideline for pharmacy. Pages 51. Second Edition 2018
19. *Netere AK et al-2018. Netere AK, Erku DA, Sendekie AK, Gebreyohannes EA, Muluneh NY, Belachew SA.* Assessment of community pharmacy professionals' knowledge and counseling skills achievement towards headache management: a cross-sectional and simulated-client based mixed study. J Headache Pain. 2018 Oct 16;19(1):96. doi: 10.1186/s10194-018-0930-7. PMID: 30326826; PMCID: PMC6755542
20. *Yam MF – 2018. Yam MF, Loh YC, Tan CS, Khadijah Adam S, Abdul Manan N, Basir R.* General Pathways of Pain Sensation and the Major Neurotransmitters Involved in Pain Regulation. International Journal of Molecular Sciences. 2018; 19(8):2164. https://doi.org/10.3390/ijms19082164

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CONTENTS

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