

UDC: 615.03.008.05 (470.324)

DOI: 10.15587/2519-8025.2021.249494

SUBSTANTIATION OF THE PERSPECTIVITY OF IMPROVING OF THE POPULATION INFORMING ABOUT THE CRITERIA OF THE CORRECT CHOICE OF MODERN MULTIVITAMIN DRUGS

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The aim. Determination of the need to raise awareness of the population about multivitamins and the criteria for their rational choice.

Materials and research methods. To achieve the goal of the study, it was necessary to develop a questionnaire for visitors to pharmacies and carry out an anonymous survey of them. All adult visitors of the pharmacy were attracted to the survey.

The developed questionnaire consisted of 3 parts and contained 32 questions processed in the course of our own research.

Research results. Among the pharmacy visitors we surveyed, the majority were between the ages of 35–55, approximately equally divided were men and women who mainly lived in the Kiev region (87 %), were not students and did not have educational levels of bachelor or master, and had no relation in health care education.

Summarizing the information obtained in the course of processing questionnaires with the answers of visitors to pharmacies, it can be noted that in the surveyed group of respondents there is a certain interest and indifference to the discussed aspects, but quite often there is a lack of knowledge in this regard.

Conclusions. In the course of analyzing the results of the questionnaire survey, the level of awareness of the population regarding general information about the pharmacology of multivitamin drugs and the criteria for their correct choice was determined. From the data obtained, it can be concluded that on many issues the respondents showed an insufficient level of knowledge, which justifies the need for additional information about multivitamins, and indicates that better it should be done with participation of a specialist with a pharmaceutical education or physician.

Mostly the population lacks knowledge on the issues listed in the second part of the questionnaire, namely, on general information about the biological and pharmacological properties of vitamins.

It was found that the information obtained from the Internet or other media, including advertising, has a significant impact on the awareness and decision of the respondents

Keywords: improvement of population informing, criteria of correct choice of drugs, awareness, multivitamin drugs

How to cite:

Kutsenko, T., Semeniv, D., Shchokina, K., Belik, G., Stoletov, Y., Getalo, O. (2021). Substantiation of the perspectivity of improving of the population informing about the criteria of the correct choice of modern multivitamin drugs. ScienceRise: Biological Science, 4 (29), 4–9. doi: <http://doi.org/10.15587/2519-8025.2021.249494>

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1. Introduction

Vitamins are nutrients that are vital to the human body. Deficiency of vitamins in the body often develops under the complex influence of adverse factors and is quite common among the inhabitants of Eastern Europe [1, 2].

This situation is complicated by irrational nutrition, in particular the excess energy value of the diet and the content of animal fat, added sugar and salt in the

background of insufficient intake of vitamins from food; acute or chronic diseases, especially of the gastrointestinal tract, bad habits, adverse environmental conditions of the area of residence [3, 4].

In addition, there is a steady trend of year-round hypovitaminosis, in which the lack of vitamins is determined not only in winter and spring, but also in the most favourable summer and autumn. Vitamin deficiency is usually combined, i.e., is polyvitaminosis, and in several

regions in parallel there is insufficient intake of calcium, iodine, selenium, fluorine and other macro – and micro-nutrients [3, 5].

There is also often a so-called subnormal or pre-clinical form of vitamin deficiency. In conditions of insufficient production of vitamin-enriched foods, the main way to eliminate vitamin deficiency is the use of vitamin-mineral complexes. The existence of inter-vitamin interactions, as well as the high frequency of cases among the population of polyvitaminosis, are the basis for the use of multivitamin-mineral complexes [6–8].

In the pharmaceutical market of Ukraine there is a wide choice (about 50 names without biologically active additives (BAS) of similar composition, which also includes more than 150 with BASes) of multivitamin preparations developed by both domestic and foreign manufacturers. These drugs differ in qualitative and quantitative composition, source of vitamins, dosage form, etc. [9].

Many of these drugs can be used for prophylactic purposes by practically healthy people, which raises the question of the need for optimal individual choice of drug in each case [3, 6].

From the available and analyzed sources of literature it is known that the appointment of multivitamins is not always done in consultation with a doctor or even a pharmacist – the choice is made independently [10–12]. Thus, in the works of foreign [13, 14] and domestic [15, 16] scientists note and discuss the facts of self-prescribing and self-medication of a number of drugs and BAS, including multivitamins, various segments of the population, even pregnant women [10, 17]. And in the work of Zeru N. and co-authors [18] it is noted that this phenomenon is observed and is quite common among students.

At the same time, there are data [3, 19, 20] on different approaches to drug choice by ordinary citizens, the feasibility of which in some cases is questionable, despite the existence of scientifically sound principles [4, 6, 16].

Given the above, the study and analysis of approaches to the choice of multivitamins by consumers is of interest.

The aim of the research – determining the need to raise public awareness of multivitamins and criteria for their rational choice.

2. Materials and methods of the research

To achieve the goal of the study, it was necessary to develop a questionnaire for pharmacy visitors and conduct an anonymous survey. All adult visitors to the pharmacy were included in the survey.

An anonymous survey was conducted in October–November 2020. among visitors to pharmacies located in the city of Slavutych, Kyiv region. All participants received informational consent for the study.

To conduct the survey, a questionnaire “Assessment of public awareness of the principles of rational choice of multivitamin drugs” was developed, which consisted of three parts and contained 32 questions.

The first part of the questionnaire contained questions with bibliographic data (age, gender, place of resi-

dence, level of education and availability of medical or pharmaceutical education).

The second part of the questionnaire asked questions about general concepts of vitamins and vitamin therapy, namely the definition, classification and nomenclature of vitamins, as well as other aspects of their pharmacological characteristics.

The third part of the questionnaire asked about the approaches to drug selection, which mostly concerned the priorities of choosing a source of information about a multivitamin and ways to determine the real need and feasibility of its use.

A total of 104 respondents from Kyiv, Chernihiv and Sumy oblasts took part in the survey, but 100 questionnaires were selected.

When processing the questionnaires, the absolute number and, accordingly, the percentage of respondents were counted for each item and question of the questionnaire, except for questions where several answer options could be chosen, which made it impossible to determine the number of votes. Therefore, in such questions, the information was indicated only in absolute numbers and in this way the rating of items was determined among themselves.

Own research was conducted by processing the answers of respondents obtained during the anonymous survey on a previously developed questionnaire.

3. Research results

Thus, the majority of pharmacy visitors we surveyed were aged 35–55, about the same number of men and women who mostly lived in Kyiv region (87 %), were not students and did not have a bachelor's or master's degree, and did not have attitude to education in the field of health care.

Summarizing the information obtained during the processing of questionnaires with the answers of pharmacy visitors, it can be noted that the surveyed group of respondents showed some interest and indifference to the discussed aspects, but often there is a noticeable lack of knowledge in this regard.

This may be due to the low percentage of respondents with medical and / or pharmaceutical education, and, in particular, proves the feasibility of raising awareness of the general public on the subject of this work.

For example, very low public awareness (Table 1) was recorded on the definition of “vitamins” (almost 80 % of respondents did not answer the question), the main functions of vitamins in the human body (47 % of respondents did not answer), the classification of vitamins (about 90 % did not answer). In addition, a very important and dangerous fact of the predominant lack of necessary knowledge on the side effects of multivitamins was revealed, namely, no meaningful answers were received to questions about the possibility of side effects or their examples on average in almost half of respondents (41–65 %). This indicates a lack of awareness of the risk of taking this group of drugs.

Table 1

Low public awareness of the surveyed aspects	
Aspect of the survey	Awareness of the population, %
1. Definition of “vitamins”	≈20
2. Classification of vitamins	≈10
3. Types of vitamin therapy	1
4. The main functions of vitamins	≈53
5. Information about the side effects of vitamins	≈50
6. Incompatibility of vitamins in the drug	≈10
7. The difference between BAS and drugs	≈15
8. Danger of vitamin overdose	>80

A similar trend is observed with regard to the issue of overdose of fat- and water-soluble vitamins (only less than 20 % of respondents are focused on the issue).

Awareness of the population about the incompatibility of vitamins in one dosage form was very low. Of course, the answer to this question generally requires special knowledge, but now elements of such information are also contained in popular literature. However, 90 % of respondents are not informed about this issue.

In the question about the dosage of vitamins, in particular in the case of substitution prophylaxis, really impressive data were obtained: only 1 respondent gave the correct answer. It is possible that this was a person with medical or pharmaceutical education, but according to the questionnaires, 4 people have specialized education, which proves once again the need for additional information to the public on this issue.

In addition, research has also shown that the vast majority (average 85 %) of respondents do not see the difference between BAS and a drug and this fact probably does not affect the choice of multivitamin consumers.

However, it was found that the Internet and other mass media (television, radio, etc.), in particular, advertising information, have a great influence on the choice and awareness of the population. This is evidenced by

the results obtained in the analysis of issues related to sources of information taken into account when choosing a multivitamin (Fig. 1), determine this choice and contain information about the daily human need for vitamins.

In addition to processing the survey results, it was found that the aspects listed mainly in Part III of the questionnaire, in particular, on the nomenclature of vitamins, determining the need for their use, approaches to choosing multivitamins, the consequences of wrong choice, etc. consumers have shown considerable awareness.

For example, in the question of determining the appropriateness of the appointment of multivitamins, respondents showed a fairly good level of knowledge and responsibility. Thus, depending on the question, 39 % – 92 % of respondents answered that the need for multivitamins is determined by a doctor and that the results of tests should be taken into account (52 %), and that self-medication is not correct (also 52 % of respondents).

The survey found that when choosing a multivitamin for themselves (Fig. 2) about 80 % of respondents are still guided by the advice of specialists with relevant education, namely, doctors and pharmacy staff (the frequency of visits to a doctor or pharmacist was almost the same).

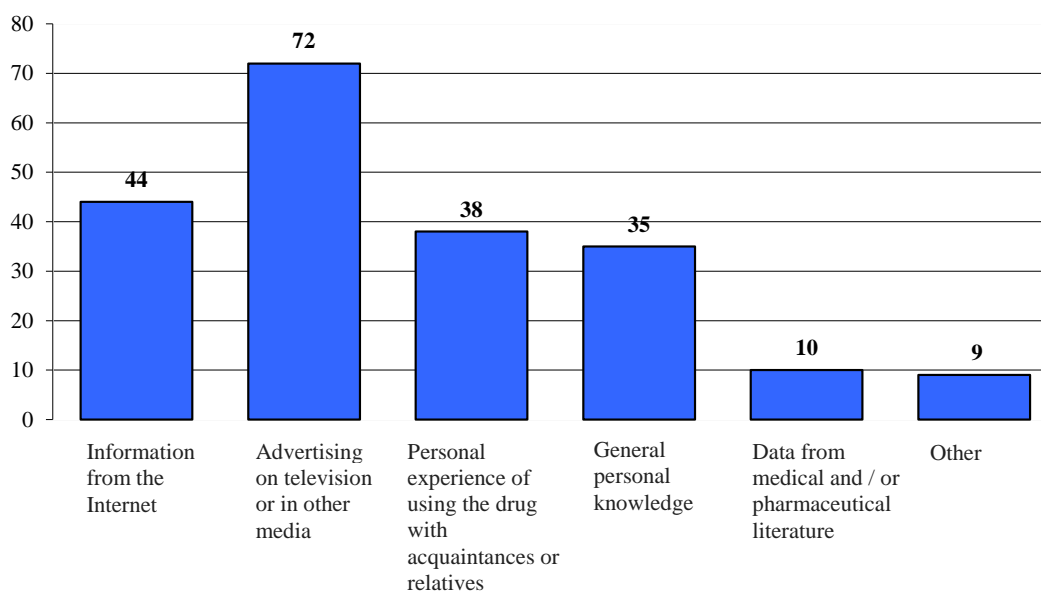


Fig. 1. The impact of the media and the Internet on respondents: sources of information that guide the choice of multivitamin

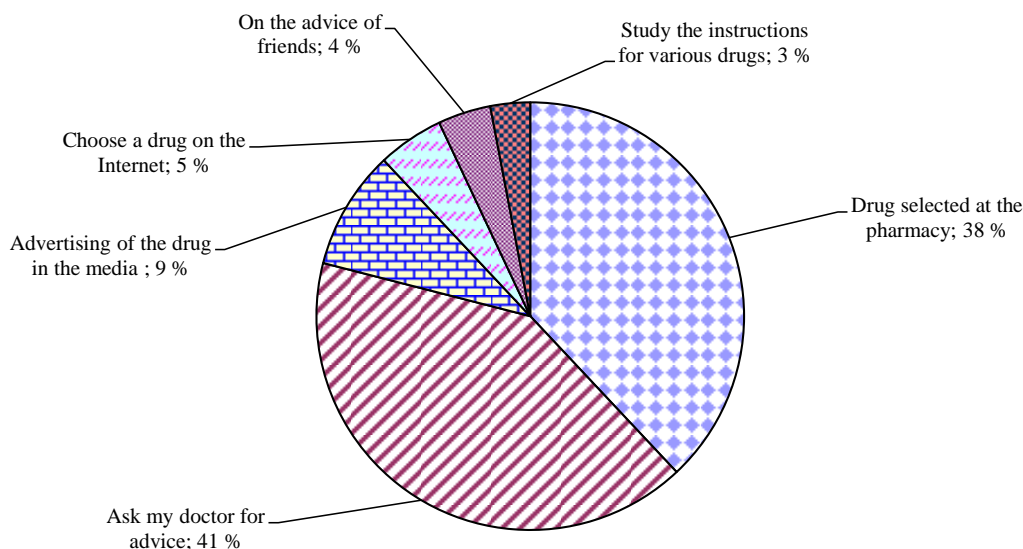


Fig. 2. Distribution of respondents' views when choosing a multivitamin for themselves

At the same time, a large number of people agree to be guided in choosing a multivitamin or studying their range of information from the media, in particular, advertising (45–72 %) and information from the Internet (19–44 %).

4. Discussion of research results

Thus, as a result of our study, we studied and assessed the level of public awareness of pharmacological properties and the choice of multivitamins. This was done for the first time among visitors to pharmacies located in the city of Slavutych, Kyiv region, according to a specially designed author's questionnaire.

However, despite the originality of this study, it should be noted that it was conducted by us in only one region of Ukraine and reflects the views of a relatively small number of respondents, mostly people without special (medical or pharmaceutical) education.

In addition, it can be noted that the limitation of our study is the fact that it may be appropriate to conduct a similar survey among pharmacy staff, as well as to compare the situation in this regard in other regions of Ukraine.

In addition, both the development of the questionnaire and its analysis were carried out by us personally, which cannot exclude a somewhat one-sided approach to the evaluation of the obtained data.

These shortcomings and limitations of the study are a prerequisite for our further research and development, the relevance and feasibility of which is confirmed by the availability of similar studies in the world on aspects of self-administration and choice of different groups of drugs and BAS, including herbal medicines, vitamins and mineral complexes, non-narcotic analgesics, etc. [10, 14, 15, 18].

For example, Pereira G. and co-authors [17] found that about 36 % of pregnant women choose their

own multivitamins and other remedies. In this and other works [19, 21–23], researchers also use personally designed questionnaires to interview the population. And the result of the data received by them is confirmation of the opinion on the need for additional information and explaining to the public the responsibility for self-medication, its possible negative consequences, as well as aspects of the correct choice of drugs [11, 13, 20, 24].

Thus, given the above, our study can also be considered timely and promising.

6. Conclusions

The analysis of the results of the questionnaire determined the level of public awareness of general information about the pharmacology of multivitamins and the criteria for their conscious choice. From the obtained data it can be concluded that on many questions the respondents showed insufficient knowledge, which justifies the need for additional information about multivitamins, and also indicates that specialist with a pharmaceutical education or a doctor will professionally help to decide on the choice of a multivitamin preparation.

Mostly the population lacks knowledge on the issues listed in Part II of the questionnaire, namely, on general information about the biological and pharmacological properties of vitamins.

It is established that the information and decisions of the respondents are significantly influenced by data obtained from the Internet or other media, including advertising information.

Given the above, the following recommendations were made:

– during the educational process in medical and pharmaceutical institutions, as well as in advanced training courses for specialists in medicine and pharmacy, it is advisable to emphasize the aspects of correct and safe choice and use of multivitamin drugs;

– offer pharmacy staff to create stands with information about the properties of vitamins and the range of vitamin-containing products in the pharmaceutical market of Ukraine, as well as place information about sources of accurate information about daily human needs for vitamins (depending on age, sex, physiological condition) and the need to pay attention to quantitative and qualitative composition of the multivitamin preparation before its use.

Such measures, in our opinion, will improve public awareness of the research issues and help increase the effectiveness and safety of vitamin therapy.

Conflict of interests

The authors declare there is no conflict of interests.

Financing

The study was conducted without financial support.

Acknowledgements

The authors of the article express their gratitude to the 5th year student of the National University of Pharmacy Poltoratskaya S. S. for participating in data collection for this study.

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Received date 12.10.2021

Accepted date 25.11.2021

Published date 30.12.2021

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