

**RESEARCH ARTICLE**

## Pharmacists' Opinions on the Legalization of Medical Cannabis in Ukraine

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### **ABSTRACT:**

The gradual liberalization of international and Ukrainian legislation regarding the circulation of cannabis-based medical products requires a more detailed study of the degree of awareness and attitude of various stakeholders, in particular, health professionals (pharmacists), to this issue. For this purpose, a survey was conducted, in which 563 Ukrainian pharmacy workers took part. It was revealed that the respondents largely share the "myths" about the dangerous narcotic properties of medical cannabis; two-thirds of them believe that all cannabinoids have psychotropic properties. Pharmacists are poorly aware of medicinal products containing herbal and synthetic cannabinoids, as well as medical indications for their use. Only 14.4% of surveyed pharmacists fully support the manufacture of cannabis preparations on the basis of pharmacies, following the example of the European Union countries. At the same time, almost half of the respondents approve of the legalization of medical cannabis in Ukraine, although they fear the risks of illegal turnover. The great majority of pharmacists consider it important to conduct scientific research, educational and awareness-raising activities on medical cannabis to improve the health and quality of life of Ukrainian patients.

**KEYWORDS:** Medical cannabis, Pharmacists, Survey, Cannabinoid-based preparations, Legislation, Ukraine.

### **INTRODUCTION:**

Currently, the issue of the use of cannabis for medical and scientific purposes is becoming more and more relevant. More than 50 countries in Europe, North and South America, Africa, Asia, etc. Legalized the use of medicinal products based on cannabis and its compounds for the treatment of various diseases<sup>1,2,3</sup>. In addition, the status of cannabis for medical and scientific purposes was changed by the decision of the United Nations (UN) Commission on Narcotic Drugs (CND) in accordance with the recommendations of the World Health Organization's (WHO) 41st Expert Committee on Drug Dependence (ECDD). Thus, cannabis and cannabis resin were deleted from Schedule IV of the Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol, but maintained it in Schedule I of the 1961 Convention<sup>4</sup>.

This means that according to international legislation, cannabis and cannabinoids are no longer classified as narcotic substances that have dangerous properties and limited application in treatment practice or are not used for medical purposes at all. Meanwhile, these compounds are still considered to be narcotic substances that can lead to addiction and abuse and remain under international control.

In Ukraine, the process of liberalization of national legislation regarding the turnover of cannabis-based medical products has also begun. Thus, according to the Decree of the Cabinet of Ministers № 324 dated April 7, 2021, the circulation of psychotropic substances such as nabilone (a synthetic cannabinoid that mimics the effect of tetrahydrocannabinol-THC) and nabiximols (a standardized cannabis extract with the same THC content and cannabidiol – CBD) is allowed in Ukraine. It should be noted that the circulation of these psychotropic substances is limited and is allowed only in the form of medicinal products or substances intended for their production<sup>5</sup>. In fact, only medicinal products containing nabilone may be available in Ukraine, namely: Cesamet (Eli Lilly, the USA) and Canemes (AOP Orphan, Austria) as antiemetics for

chemotherapy, as well as nabiximols – Sativex (GW Pharmaceuticals, the United Kingdom), which is used in the treatment of multiple sclerosis and pain syndrome of cancer origin<sup>6-9</sup>. In addition, according to legislative changes, the circulation of drugs containing isolated CBD is free in Ukraine.

The gradual liberalization of legislation regarding cannabis and cannabinoids for medical purposes in Ukraine requires a more detailed study of the goals and interests of the key stakeholders in the potential medical cannabis market. These stakeholders can include patients, pharmaceutical manufacturers, growers, legislative and regulatory bodies, researchers, healthcare professionals (doctors, pharmacists, nurses), and others.

The purpose of this study is to analyze the level of awareness and attitude of pharmacists toward medical cannabis in Ukraine. The research objectives are:

- To analyze the level of pharmacists' awareness of the main “myths” associated with medical cannabis and cannabinoids;
- To study the level of pharmacists' awareness of cannabis preparations, their use for certain symptoms and diseases;
- To analyze the attitude of pharmacists towards the legalization of medical cannabis in Ukraine, gaining knowledge about it in the educational and scientific fields;
- To identify informational directions to improve the awareness of the population and healthcare professionals as to cannabis-based medical products.

**MATERIALS AND METHODS:**

In this study, a quantitative research method was used – a survey that was conducted using the Google Form service. A questionnaire was developed, consisting of two parts: the first part was aimed at identifying the level of awareness of respondents with the above statements about medical cannabis, the second part was aimed at the knowledge of the market for cannabis-based medical products, at the attitude to their legalization, at the assessment of information content about medical cannabis, etc.

As a sampling frame, pharmacists were chosen from both large pharmacy chains: “Bazhayemo zdorovia” (“We wish you health”), “Apteka hormonalnykh preparativ” (“Pharmacy of hormonal drugs”), “Apteka dobroho dnia” (“Pharmacy of a good day”), as well as from small pharmacy chains and individual pharmacies in different regions of Ukraine. In this study, probability sampling techniques were applied, since the sample is unified and has common characteristics<sup>10</sup>. The total number of respondents who took part in the study was

563 people; their detailed characteristics are given in Table 1.

**Table 1: Respondents’ characteristics**

Evaluation criteria	Number of respondents	(%)
Gender:		
Male	36	6,4
Female	527	93,6
Age:		
up to 25	346	61,5
26-34	126	22,4
35-44	53	9,4
45-54	32	5,7
55 and above	6	1,1
Education:		
Secondary special pharmaceutical education	397	70,5
Higher education	166	29,5
Work experience:		
up to 1	29	5,1
1-2	53	9,4
2-5	280	49,7
5-10	88	15,6
10 and above	113	20,1
Formation type and size of the pharmacy:		
Individual pharmacy	25	4,4
Small pharmacy chain (2-10 pharmacies)	92	16,3
Average pharmacy chain (11-25 pharmacies)	43	7,6
Large pharmacy chain (26-50 pharmacies)	70	12,4
Mega pharmacy chain (> 50 pharmacies)	333	59,1

The majority of respondents are women (93.6%), mainly under 25(61.5%), almost half of whom (49.7%) have work experience from 2 to 5 years, and 70.5% have a secondary specialized pharmaceutical education (graduated from the College of Pharmacy). It should be noted that 59.1% of the respondents work in mega pharmacy chains in Ukraine, which are usually located in all regions of Ukraine.

**RESULTS AND DISCUSSION:**

**Research on the awareness of pharmacists about medical cannabis in Ukraine:**

Considering that cannabis and its components have for a long time been virtually banned for medical and scientific use in most countries of the world, there exist many "myths" about these substances. The first step in our research was to determine the level of the respondents’ awareness as to medical cannabis.

So, despite the liberalization of the laws of many countries of the world regarding the circulation of cannabis-based medical products, the availability of recommendations from the World Health Organization (WHO)<sup>11,12</sup>, scientific reports and publications, almost two-thirds of health professionals (pharmacists) believe

that cannabis is a dangerous narcotic substance (Figure 1).

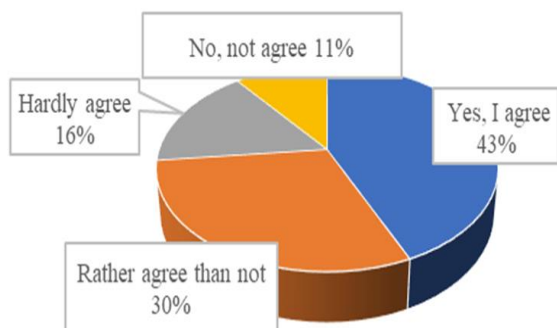


Figure 1: The respondents' answers to the question: "Do you agree with the statement that cannabis is a dangerous narcotic drug?"

The cannabis plant contains various biologically active substances: flavonoids, steroids, alkaloids, terpenoids and others<sup>13,14</sup>. But its properties are mainly conditioned by the presence of at least 100 different cannabinoids (cannabigerol, cannabinol, cannabitrinol, etc.)<sup>15-17</sup>. THC and CBD are the most studied cannabinoids. Thus, CBD exhibits analgesic, anticonvulsant, anxiolytic, antiepileptic effects, but it does not have a psychotropic effect on the human body. In its turn, THC has predominantly analgesic and antiemetic properties, as well as a moderately pronounced psychotropic effect<sup>18-21</sup>.

However, according to the survey results, 73% of the respondents believe that all cannabinoids have psychotropic properties and are addictive and only 12.4% of surveyed pharmacists disagree with this statement (Figure 2).

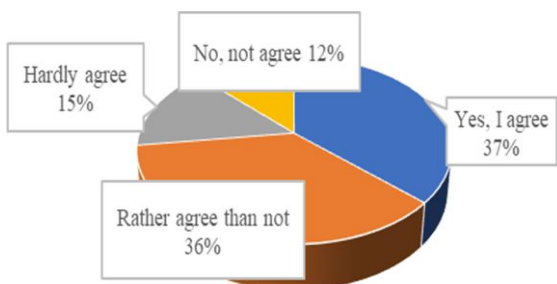


Figure 2: The respondents' answers to the question: "Do you agree with the statement that all cannabinoids have psychotropic properties and are addictive?"

In addition, more than half of the respondents (54%) believe that the mechanism of action of the cannabis plant is still unknown. The results obtained actually indicate that the majority of respondents are not aware of the existence of the endocannabinoid system and endocannabinoids in the human body, and also share the "myths" about the dangerous narcotic properties of cannabis<sup>22</sup>.

### Research on the awareness of pharmacists as to cannabinoid-based preparations and indications for their use

Cannabis-based medical products are legalized and used in most states of the US, Canada, countries of South America, the European Union and other countries around the world. As a rule, the following classification of medical cannabis is distinguished:

- Registered medical products containing pure synthetic or herbal cannabinoids;
- Cannabis preparations, which can be manufactured both in industrial conditions and in a pharmacy in a certain dosage form (for example, crushed dry inflorescences, granules, extracts, oils, etc.);
- Products containing CBD and minimal THC content (dietary supplements, cosmetics, food products)<sup>23-26</sup>.

It should be noted that for 35.7% of the respondents, this information turned out to be completely new, 30% of the respondents were also not familiar with this classification, but the listed categories were known to them. Only 9.4% gave the answer "Yes, I know it very well" (Figure 3).

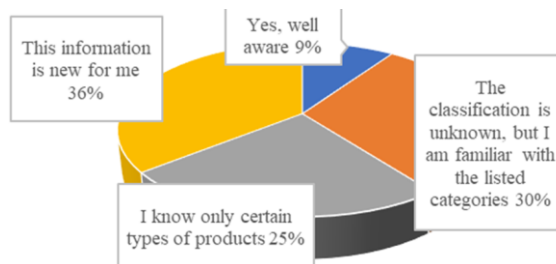


Figure 3: The respondents' answers to the question: "Do you know the above classification of cannabis-based medical products?"

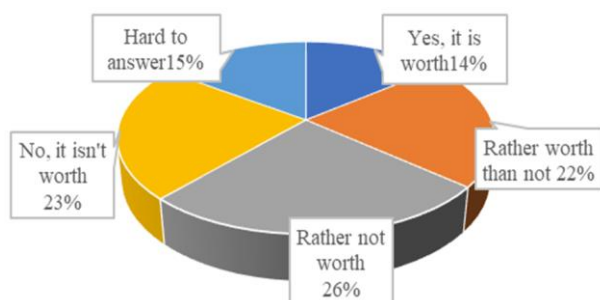
Medicines containing synthetic and herbal cannabinoids are Sativex and Epidiolex (GW Pharmaceuticals, the United Kingdom), Cesamet, Marinol and Syndros (Eli Lilly, the US), Canemes (AOP Orphan, Austria). These medicines are presented in various dosage forms, such as capsules, oral sprays, oral solutions, and are registered in the USA, Canada, European Union countries, and other countries of the world<sup>6-9</sup>. According to the research results, 79.1% of the respondents do not know about these drugs, and 18.2% said they know only a few of them.

These medicines are prescribed for certain indications: relief from chronic pain, as antiemetics during chemotherapy, for muscle spasms in the treatment of multiple sclerosis, for severe forms of drug-resistant epilepsy of children, depression, sleep disturbance, etc.<sup>8,9,26-33</sup>. Only 10% of the respondents are aware that drugs based on cannabis and cannabinoids are indicated for these diseases and symptoms, at the same time,

almost 65% are not informed or are poorly informed of this.

In addition to the above-listed drugs, standardized cannabis preparations can also be used, which can be manufactured in pharmacies according to magistral formulas. These cannabis preparations (whole inflorescences, crushed inflorescences, cannabis extracts, etc.) may be available for medical use only with a doctor's prescription. For example, in the Netherlands, pharmacies produce cannabis oil, which is obtained by extracting dry raw materials from the cannabis plant: this standardized raw material is produced by the Bedrocan Company (Netherlands). In Germany, in accordance with the German Drug Codex and New German Formulary, semi-synthetic dronabinol is produced in pharmacies with the use of magistral formulas, in the form of capsules or drops<sup>34</sup>.

According to the survey results, only 14.4% of pharmacists fully agree that it is advisable to produce standardized cannabis preparations on the basis of pharmacies in Ukraine, 15.3% noted that they find it difficult to answer. At the same time, almost half of the respondents do not support, or rather do not support, the compounded production of cannabis-based preparations in Ukraine after their legalization (Figure 4).



**Figure 4: The respondents' answers to the question: "Is it worth producing cannabis preparations on the basis of pharmacies in Ukraine after their legalization?"**

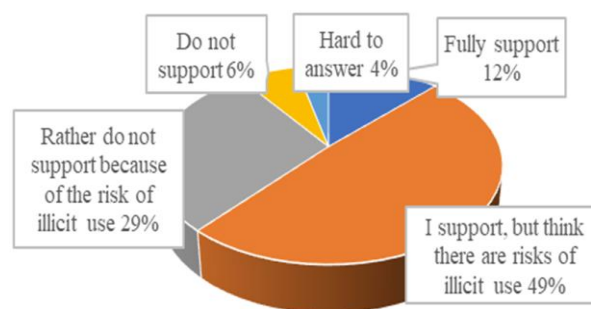
According to the results, most pharmacy workers are not familiar with the range and properties of drugs containing synthetic and cannabinoids, which are used in foreign medical practice for certain diseases and symptoms. In addition, respondents are wary of the possibility of manufacturing standardized cannabis preparations on the basis of pharmacies in Ukraine.

**The attitude of pharmacists towards the legalization of medical cannabis in Ukraine and activities to raise awareness as to this product**

Currently, in accordance with the Resolution of the Cabinet of Ministers of Ukraine dated May 6, 2000 No. 770 "On approval of the list of narcotic drugs, psychotropic substances and precursors", cannabis,

cannabis resin, extracts and tincture of cannabis refer to especially dangerous narcotic drugs, the circulation of which is prohibited<sup>35</sup>. However, given the gradual liberalization of the national legislation, it is important to understand the attitude of the stakeholders to this process, on which the availability of cannabis-based medical products for patients, in particular, pharmacists, will also depend.

According to the results obtained, 12.4% of the respondents fully support the legalization of cannabis and cannabinoids for medical purposes; almost half of the respondents (49%) also support it, but fear the emergence of risks of illegal traffic of cannabis compounds. At the same time, 28.6% of surveyed pharmacists do not support the legalization of cannabis-based medical products because of these risks (Figure 5).



**Figure 5: The respondents' answers to the question: "Do you support the legalization of medical cannabis in Ukraine?"**

The cautious attitude of the respondents to the legalization of medical cannabis, as well as their lack of awareness of medical cannabis, indicate the advisability of including materials on the properties of the cannabis plant, the mechanism of action of its compounds, the endocannabinoid system, its medical use, etc., in educational programs for the preparation of Masters of Pharmacy. Thus, the overwhelming majority of the respondents specified that these educational materials are 'worth including' and 'rather should be included' in the educational program: 48.7% and 29.5%, respectively, and 8.3% of pharmacists found it difficult to answer.

However, changes in the educational program must be accompanied by the possibility of conducting scientific research on cannabis and its compounds. Thus, in the PubMed database, as of the end of April 2021, more than 25 thousand studies on cannabis have been published. Moreover, a positive trend is observed in the increase in the number of scientific studies on this topic over the past 10 years: in 2010, 730 articles were published, and in 2020 this number increased fourfold

and amounted to 3037 articles<sup>36</sup>. However, scientists in Ukraine are prohibited from using the cannabis plant (except its industrial varieties) as an object of research. It is worth noting that the overwhelming majority of respondents support the need to conduct scientific research on medical cannabis and its compounds: 48.7% of respondents indicated ‘yes, it is necessary’ and 25% specified ‘rather yes than no’.

It is advisable to conduct educational and awareness-raising activities to raise awareness and develop a critical attitude towards various “myths” and prejudices regarding medical cannabis. The overwhelming majority of the respondents noted that such events are “very important” and “important”: 73.4% and 20.1%, respectively. Also, the interviewed respondents rated the content of these initiatives on a 5-point scale, where 1 means ‘not important’ and 5 means ‘very important’ (Table 2).

**Table 2: The respondents' assessment of the importance of educational content to debunk the “myths” about medical cannabis**

No	Medical cannabis educational information content	«Very important», %	«Important», %	∑ («very important» + «important», %
1.	Inform that certain cannabis preparations do not contain or contain a minimum amount of psychotropic substances	48	43,7	91,7
2.	Explain that medical cannabis application is essential for certain medical conditions, such as Dravet syndrome	52	37,8	89,8
3.	Focus on the fact that medical and recreational use of cannabis are two different things	47,4	40	87,4
4.	Explain that the human body has its own endocannabinoid system, which is involved in practically all physiological processes	37,1	44,9	82
5.	Inform that there are many scientific publications on the advisability of using medical cannabis for certain diseases and symptoms	36,6	44,2	80,8
6.	Inform that cannabis and its compounds are relatively safe, even when compared to alcohol and tobacco	34,6	43	77,7
7.	Emphasize that medical cannabis is legalized in most developed countries	29,3	44,4	73,7
8.	Draw attention to the fact that the new market for medical cannabis will produce a positive impact on the development of entrepreneurship and economic performance in the country	27,5	39,4	66,9

In terms of the sum of ‘very important’ and ‘important’, the highest indicators, according to the respondents, have such outreach initiatives as “informing that cannabis-based medical products may be practically free of psychotropic substances”, “authoritative explanations of the importance of medical cannabis in the treatment of certain diseases and symptoms”, as well as “focusing on the fact that medical and recreational cannabis have fundamental differences”: 91.7%, 89.8% and 87.4%, respectively.

In summary, it should be noted that one of the most important steps, along with the legalization of medical cannabis, is the delivery of complete, reliable, up-to-date information on medical cannabis to various stakeholders, in particular health professionals (pharmacists). This will make it possible to make cannabis-based medical products available to patients in Ukraine in the future.

**CONCLUSION:**

To study the level of awareness of pharmacists about cannabis-based medical products, their attitude to the legalization of medical cannabis and information initiatives to debunk the "myths" about its properties, a questionnaire was developed and a survey was conducted among 563 pharmacists. Most of the

respondents are women under 25, with a secondary specialized pharmaceutical education, work experience from 2 to 5 years, mainly in mega pharmacy chains. Approximately two-thirds of these pharmacists believe that cannabis is a dangerous drug, and all the cannabinoids that it contains are psychotropic. Almost 80% of respondents practically do not know medicinal preparations containing cannabinoids, and their awareness as to the indications for such medicinal preparation’ use is insufficient. Pharmacists are wary of the possibility of making cannabis-based medical products on the basis of pharmacies: only 14.4% fully approve of this. Almost half of the respondents support the legalization of medical cannabis in Ukraine, but at the same time, they are afraid of the risks of its illegal turnover. Approximately 80% of pharmacists surveyed consider it advisable to include educational materials on medical cannabis in the educational program, two-thirds support the need for conducting scientific research. The respondents indicated the importance of disseminating relevant, full-rate and reliable information to debunk the "myths" and prejudices about cannabis-based medical products.

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