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Guilherme C. Montes, Fabrícia L. Fontes-Dantas, Filipe E. Alves, Vitória M.S. Gonçalves
Liga Académica de Ciências Cannabicas: uma iniciativa para discussão da Cannabis Medicinal

Academic league of Cannabis sciences: an initiative to discuss medicinal Cannabis

Liga académica de ciências Cannabicas: uma iniciativa para discussão da *Cannabis* medicinal

Liga Académica de Ciencias del Cannabis: una iniciativa para discutir el Cannabis Medicinal

RESUMO

Objetivo: Após a descoberta do sistema endocanabinoide no final do século XX abriram-se as portas para os estudos a respeito da Cannabis na forma de tratamento medicinal. Desde então inúmeros ensaios clínicos mostraram que a Cannabis é eficaz no tratamento de algumas condições médicas e há uma crescente pressão pública e política para promulgar leis que permitam o seu uso para fins medicinais. Com o intuito de propiciar a divulgação de informações científicas verdadeiras e acessíveis para a sociedade, a Universidade do Estado do Rio de Janeiro organizou um projeto de extensão universitária intitulada Liga de Ciências Cannábicas (LACICAN). Este artigo tem o objetivo de relatar as ações do projeto de extensão universitária voltadas para a discussão da Cannabis Medicinal. Diferentes materiais informativos, com linguagem acessível foram produzidos e divulgados via redes sociais desde abril de 2022 até o e julho de 2023. Além disso, a LACICAN organizou o seu primeiro ciclo de debates sobre Cannabis Medicinal em 2022 de forma remota, com palestrantes renomados na área. Ao final do evento, os participantes responderam um questionário online a fim de entendermos os conhecimentos teóricos adquiridos. Na nossa principal rede social, o Instagram®, que já tem 32 publicações desde sua criação, com 1699 curtidas e 254 comentários no total. Durante o ciclo de debates, conseguimos reunir mais de 130 inscritos das regiões Sudeste (64 %), Nordeste (31%) e Sul (5%) do Brasil. Interessantemente, 100 % dos participantes, relataram que indicaria o ciclo de debate para alguém em uma próxima edição. Dessa forma, o projeto busca a manutenção do debate entre universidade e a comunidade sobre a Cannabis Medicinal, seu consumo com fins medicinais, legislação e as pesquisas científicas sobre o tema que estão em andamento no Brasil.

PALAVRAS-CHAVE: *Cannabis* medicinal, Divulgação científica, Redes sociais, Extensão universitária.

ABSTRACT

Objective: After the discovery of the endocannabinoid system at the end of the 20th century, the doors were opened for studies on Cannabis in the form of medicinal treatment. Since then, numerous clinical trials have shown that cannabis is effective in treating some medical conditions and there is growing public and political pressure to enact laws that allow its use for medicinal purposes. To promote the dissemination of true and accessible scientific information to society, the State University of Rio de Janeiro organized a university extension project entitled League of Cannabis Sciences (LACICAN). This article aims to report the actions of the university extension project focused on the discussion of Medicinal Cannabis. Different informative materials, with accessible language, were produced and disseminated via social media from April 2022 to July 2023. In addition, LACICAN organized its first cycle of debates on Medicinal Cannabis in 2022 remotely, with renowned speakers in the area. At the end of the event, participants answered an online questionnaire to understand the theoretical knowledge acquired. On our main social media, Instagram®, which already has 32 publications since its creation, with 1699 likes and 254 comments in total. During the cycle of debates, we were able to gather more than 130 subscribers from the Southeast (64%), Northeast (31%) and South (5%) regions of Brazil. Interestingly, 100% of the participants reported that they would recommend the debate cycle to someone in a future edition. In this way, the project seeks to maintain the debate between the university and the community about Medicinal Cannabis, its consumption for medicinal purposes, legislation, and scientific research on the subject that is in progress in Brazil.

KEYWORDS: Medical *Cannabis*, Scientific dissemination, social media, University extension.

RESUMEN

Objetivo: Tras el descubrimiento del sistema endocannabinoide a finales del siglo XX, se abrieron las puertas a los estudios sobre el Cannabis en forma de tratamiento medicinal. Desde entonces, numerosos ensayos clínicos han demostrado que el Cannabis es eficaz en el tratamiento de algunas afecciones médicas y existe una creciente presión pública y política para promulgar leyes que permitan su uso con fines medicinales. Con el fin de promover la difusión de información científica veraz y accesible a la sociedad, la Universidad del Estado de Río de Janeiro organizó un proyecto de extensión universitaria denominado Liga de las Ciencias del Cannabis (LACICAN). Este artículo tiene como objetivo relatar las acciones del proyecto de extensión universitaria centrado en la discusión del Cannabis Medicinal. Se produjeron y difundieron a través de las redes sociales diferentes materiales informativos, con lenguaje accesible, desde abril de 2022 hasta julio de 2023. Además, LACICAN organizó su primer ciclo de debates sobre Cannabis Medicinal en 2022 de forma remota, con ponentes de renombre en el área. Al final del evento, los participantes respondieron un cuestionario en línea para comprender los conocimientos teóricos adquiridos. En nuestra principal red social, Instagram®, que ya cuenta con 32 publicaciones desde su creación, con 1699 me gusta y 254 comentarios en total. Durante el ciclo de debates, logramos reunir más de 130 suscriptores de las regiones Sudeste (64%), Nordeste (31%) y Sur (5%) de Brasil. Curiosamente, el 100% de los participantes informaron que recomendarían el ciclo de debate a alguien en una próxima edición. De esta forma, el proyecto busca mantener el debate entre la universidad y la comunidad sobre el Cannabis Medicinal, su consumo con fines medicinales, la legislación y la investigación científica sobre el tema que está en curso en Brasil.

PALABRAS CLAVE: *Cannabis* medicinal, Divulgación científica, Redes sociales, Extensión universitaria.

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INTRODUCTION

For a long time, plants served as the main source of food as well as for medicinal purposes. In this context, plants of the genus Cannabis have already been reported in the literature as some of the first plants cultivated by man to use their fibers to make ropes, fabrics, among other uses, since 4000 BC. in the China region (KOLB, 2019). In addition to the Chinese, Cannabis was used for medicinal purposes by people such as Egyptians, Greeks, Indians who also used it for religious rituals. In Africa, historical accounts dating back to 2000 years ago, before European contact, suggest that Cannabis was introduced in the southern region by Arab traders, and soon spread throughout the eastern coast and tropical region. Dispersion throughout Africa was, most likely, slow, however, its religious and medicinal use was maintained and, in addition, the plant began to have new therapeutic applications [1-3].

In the 16th century, the seeds of the plant arrived in Brazil, brought by African slaves. At the beginning of the 20th century, Cannabis was easily found, in the form of cigarettes, in Brazilian pharmacies. In the mid-1930s, it was routinely mentioned in medical textbooks and in pharmaceutical product catalogues. However, in this same decade, the repression of its use began with the creation of the National Inspection Commission for Narcotics. In 1938, Law No. 891 of the Federal Government was enacted, prohibiting the planting, cultivation, harvesting and exploitation of the plant in Brazil [4].

In the 1960s, interest in the use of cannabinoid derivatives grew significantly after the identification of one of the phytocannabinoids, delta-9-tetrahydrocannabinol (THC). This substance is identified as psychotropic and is associated with major side effects of use, as well as the potential for abuse and addiction due to elevated dopamine levels. Cannabidiol (CBD), another phytocannabinoid, has been identified and isolated from Cannabis. Devoid of psychotropic activity, cannabidiol has anti-inflammatory, antioxidant and neuroprotective action. Although THC and CBD are the most studied phytocannabinoids, there are other molecules such as cannabivarim, cannabigerol that have been studied for their pharmacological properties [5-7].

Cannabis is rapidly moving from an illicit substance to one that is legally available and widely used for medicinal purposes. In regions where regulation of use is already more advanced, as is the case of some US states, the implementation of comprehensive educational programs for patients, health professionals and the general public has been the subject of great debate[8]. At the tip of the iceberg one of the main challenges has been the way that medical cannabis users obtain information, which has predominantly been from their own personal experiences and from the Internet (KRUGER et al., 2020). In order to promote the dissemination of true and accessible scientific information to society, the State University of Rio de Janeiro organized a university extension project entitled Academic League of Cannabis Sciences (LACICAN - Liga Acadêmica de Ciências Cannabicas). This article aims to report the actions of the university extension project focused on the discussion of Medicinal Cannabis.

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METHOD

A descriptive strategy was used, based on experience reports with a quantitative approach, developed from the experiences of teachers and students who participate in the Academic League entitled "League of Cannabis Sciences - LACICAN", developed on the premises of the State University of Rio de Janeiro (UERJ), located in Rio de Janeiro. LACICAN was created in 2022 with the aim of debunking the myth surrounding Cannabis, disseminating new studies, changes in legislation and curiosities. LACICAN has the contribution of several students from different institutions, from private to public institutions. In all, LACICAN currently has the support of 14 students, one of them Masters, and 2 professors. Students actively participate in the administration of social networks, in research for the production of posts, in the wide dissemination of the League and in the organization of events and educational activities.

In accordance with legal norms and the principles of bioethics, extension projects that have a direct link with research involving human beings must be submitted to analysis for approval by the Ethics Committee for Research with Human Beings. In this sense, LACICAN is not involved in any research project, and this article was produced based on the descriptive analysis of publications on social networks, and the anonymization of all individuals participating in the cycle of debates. Furthermore, in accordance with the provisions of the General Data Protection Law in art. 13.709/2018, the results of analyzes of databases kept in a controlled and secure environment, which do not contain sensitive data, may be waived from the Free and Informed Consent Form (FICF).

LACICAN has as its main objective to bring scientific knowledge to the population in a simple way so that everyone, without any discrimination, can understand and expand knowledge about Cannabis so that, thus, being widely spoken and known, it can be demystified and treated as a subject that deserves attention and investment in research. The main activities of the League are divided into scientific dissemination through social networks and events provided by the League.

In the context of social networks, the League produces informative materials in the form of short texts with images, interpreting scientific articles published in renowned journals in video format and sharing relevant information from verified sources. The language used is easily accessible, without abandoning the thinking and scientific rigor of the academic environment. All materials produced are evaluated by teachers participating in the League.

LACICAN was created in the context of the COVID-19 pandemic, and in order to promote a deeper debate on the subject, the project organized at the end of 2022 a cycle of debates in a completely online format. Renowned researchers in the area were invited to give a lecture on the most varied subjects. The cycle of debates was open to the public, regardless of social class or degree of academic training, the cycle lasted 3 days, once a week. The application was made through a Google Forms form that was made available on the League's Instagram. The debates were transmitted through Google Meet, which is an important platform because it receives a reasonable amount of connected individuals and allows listeners to interact with the speakers and other participants.

The guests were, respectively, Dr. Maria Eline Matheus, M.Sc. Gustavo Mendes Lima Santos and B.Sc. Margarete Brito. Eline is a pharmacist and gave the lecture "Physiology and Pharmacology of Cannabinoids". Gustavo is also a pharmacist who worked for 19 years at ANVISA (National Health Surveillance Agency of Brazil) and gave the lecture "Legislation of Cannabis-based products in Brazil". And, Margarete is a lawyer, founder and director of the Association for the Support of Medical Cannabis Research and Patients (APEPI) and gave the lecture "Challenges of Cannabis Cultivation in Brazil". On the first night of lectures 39 spectators were obtained; on the second night there were 34 listeners; already on the third and last night only 23 people participated.

After the three nights of the debate cycle, a form was made available for 1 month for participants to respond and for us to give feedback. 51 responses were obtained from subscribers in the debate cycle. In this new form we seek the evaluation of the participants before the lectures, the new questionnaire had 7 questions and an area for criticism, praise and suggestions.

RESULTS

During LACICAN's first year of activity, informative materials were produced on the social networks Facebook, Instagram, Twitter and TikTok. The @lacican_uerj profile on Instagram is the main social network used and the content has already reached a lot of people. Posts are divided into the following categories: Cannabis from A to Z; Film indication; Did you know?; and production of videos with information from scientific articles. We currently have 408 followers, 32 publications with 1699 likes and 254 comments in total. The Instagram® metrics, with impressions of likes, comments and saves made over the course of the 32 posts are shown in Table 1.

Regarding the first cycle of debates, the League brought together subscribers from a large part of Brazil, mostly from the state of Rio de Janeiro. In the table below we can analyze in more detail the profile of each participant, such as: gender, region of residence; level of education and, if you are a professional, your area (Table 2).

The level of knowledge on the

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Table 1 – Instagram® metrics between the periods 14/04/2022 to 08/07/23 of the @lacican_uerj profile on Instagram®.

Post	Likes	Comments	Saves
1	124	15	9
2	83	18	5
3	78	20	10
4	24	11	2
5	83	12	6
6	45	10	3
7	29	5	4
8	51	11	7
9	74	6	6
10	43	2	4
11	26	6	2
12	43	8	2
13	55	5	3
14	57	12	6
15	28	8	2
16	22	6	4
17	89	14	10
18	58	11	7
19	22	3	5
20	138	8	26
21	39	4	3
22	19	2	0
23	58	3	4
24	25	4	3
25	48	8	3
26	32	11	0
27	79	10	1
28	25	5	1
29	58	6	16
30	75	7	9
31	28	4	5
32	41	7	4

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Table 2 – Analysis of the registration form for the 1st debate cycle promoted by LACICAN

	Variables	%
Gender	Male	73
	Female	27
Region	Southeast	64
	Northeast	31
	South	5
	North	0
	Midwest	0
Education	Graduation	75,6
	Post-graduation	8,4
	Health professional	14,5
	High school	1,5
Course	Pharmacy	30,18
	Biological Sciences	21,69
	Medicine	13,2
	Psychology	10,37
	Veterinarian Medicine	7,54
	Biomedicine	6,6
	Dentistry	3,77
	Nursing	2,83
	Social Communication	0,94
	Fishing engineering	0,94
	Nutrition	0,94
	Arts	0,94

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Table 3 – Analysis of the post-debate cycle form promoted by LACICAN		
	Variables	**%**
Answers	51	100
Education	Graduation	82,2
	Post-graduation	7,8
	Health Professional	4
Would you recommend the course to someone in a future edition?	Yes	100
	No	0
What did you think of the content taught in the debate cycle?	Great	86,3
	Good	13,7
What did you think of the duration of the lectures?	Great	62,7
	Good	37,3
After the debate cycle, from 0 to 10, how do you quantitatively rate your knowledge about Medicinal Cannabis?	0	0
	1	0
	2	0
	3	0
	4	2
	5	0
	6	11,8
	7	13,7
	8	19,6
	9	11,8
	10	41,2

subject addressed by the League was evaluated before and after the lectures. In the answers acquired with the registration form, we can observe how little, or nothing, is said about Cannabis during academic life, whether during basic education, graduation, or even post-graduation. There is also a notorious lack of information in sources such as newspapers, radio stations and podcasts. The percentage of subscribers who had already obtained information about medicinal Cannabis in some course was only 29%. When analyzing the percentage of participants who know about the amount of Cannabis-based products that are authorized to be marketed in Brazil, the number is 9.9% of people have this information.

Through the post-debate form, we can analyze how the cycle of debates was of great importance to our subscribers, as in addition to expanding their knowledge about Cannabis (Table 3), showing that it can be used as a pharmaceutical asset of great potential, we were able to show the timeline of and current news. A special highlight was related to the debate on current innovations regarding Cannabis and we debated on Brazilian legislation and its current situation at ANVISA.

DISCUSSION

With the Covid-19 pandemic, everyone had to reinvent themselves in their way of communicating since we had to stay confined at home for our own protection, but in addition to reinventing ourselves, we had to get used to it. Video calls and online classes

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Figure 1 – Compliments left by subscribers about the cycle of debates

were around before the pandemic, so it was up to all of us, even those who weren't very tech savvy, to bring all of this to our daily lives because we were all confined, but our lives had to go on somehow. In this way, numerous lectures, round tables, debates, congresses were born, and scientific dissemination was increasingly disseminated online.

Instagram® is the main social network used for promoting LACICA's science, as it is based on more visual aspects and the possibility of keeping a door for discussion always open. Understanding of medicinal cannabis is generally modest among the general public and among users (KRUGER et al., 2020). Social media has become a great ally as a mechanism for sharing information about cannabis, including links to informational websites and media reports[9]. However, a major challenge remains regarding the use of reliable sources. In our publications, we are careful to verify all the information and not leave the content extensive, tiring and/or unattractive for those interested in accessing it. As noted in some comments, those interested seem to be students or health professionals.

It is of great importance to use social networks as a tool for disseminating scientific information, as they are easy to use and have a high potential for access, thus reducing the spread of erroneous information and preconceived opinions. According to the Brazilian Professor and Philosopher Paulo Freire "Education does not transform the world. Education changes people. People change the world." In addition to social media, the debates also helped to expand the knowledge of LACICAN participants and served to show us what we knew, how the lack of knowledge and information on the subject is great at any academic level. Above all, it was clear how our work through scientific dissemination is of great importance.

It is important to highlight that in all stages of project execution, including the organization of the debate cycle, students were the protagonists with the contribution of ideas for the elaboration of activities and content. We seek that the debates and future events organized by us can expand the knowledge, certainties and opinions of our listeners and we are researching new ways to do this, not only with our Instagram and events, but also with the insertion of this subject in other spheres of society. In the future, together with APEPI, We will take lectures and chats into schools so that basic education students also have the opportunity to be introduced to the subject, as it is important that it be introduced at all academic levels, from basic education to graduate school.

Lectures will be inserted through science fairs, a very common event in most Brazilian schools, we will briefly talk about the history of the plant and emphasize all the medicinal forms of use showing all the potential of the plant. The cycle of debates provided us with this incredible opportunity to partner with APEPI (Association for the Support of Medical Cannabis Research and Patients) through Margarete Brito, who participated in the cycle of debates.

In this word cloud formed from words left by viewers, we can get a sense of how listeners felt about the lectures. LACICAN organized everything so that, in addition to being attractive, the lectures would add to the lives of subscribers and these words are immensely aggregating for the next events.

With online life being increasingly "normalized", strongly post-Pandemic, together with its immense practicality, it was observed how the lectures in the remote format cover a huge diversity of students from all parts of the country and even the world, since the Internet has no borders or limitations. Together with cultural diversity there is also di-

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versity of schooling, knowledge and knowledge. Around the world there are several divergent opinions about Cannabis, from the belief that it is a plant that unites the individual with a superior spiritual part and even its ancestry or believing that Cannabis is a plant that fits the niche of drugs , which causes dependence and can even more fatally lead to death.

When we stop to analyze Brazil as a whole, we have all these opinions together in one country, and it can even be in the same state or family. We have groups that are strongly in favor of the state's legalization of the plant, not only for medicinal use, but also for its recreational use. There are also groups that are totally against legalization and agree with the condemnation of the plant because for a long time the "demonization" of the plant has been sown in the population with the argument of dependence and later death. The groups in favor of legalization, as mentioned, are in favor of demystification based both on scientific studies already published which show the various benefits of various phytocannabinoids components of the Cannabis plant, as well as the benefits in the treatment of epilepsy, insomnia and even ASD (Autistic Spectrum Disorder), and in the deep analysis where the relationship between the criminalization of drugs and the high rate of various types of violence against the population of the poorest social classes is studied, especially the extermination and mass incarceration of the black population (RYBKA; NASCIMENTO; GUZZO, 2018).

In this remote model, it is very interesting to observe the meeting of such diverse and polarized opinions, and to see people reassessing their opinions and certainties. Again, it was seen how important the online model is, without denying the importance of face-to-face, but it is incomparable how the remote unites all people in a much easier, simpler and more accessible way. This union becomes very important mainly for a very wide dissemination of the knowledge that is being shared, in the case of the League it becomes extremely important for the demystification and a greater knowledge about Cannabis. Making this knowledge reach different areas of the country is completely enriching for society.

CONCLUSION

Therefore, it is evident how social networks and online lectures became a tool of great help when the world found itself confined as a result of the Covid-19 pandemic. We also discovered that greater investment in scientific dissemination is still necessary, so that society has access to research that is in progress in Brazil.

We can then conclude how the creation not only of lectures, cycles of debates, but also of university extension projects becomes important in a society that has so little knowledge about a certain subject. It is always an aggregator that society is integrated and aware of what is being discovered and studied at the university level. LACICAN always seeks to introduce citizens to science and always seeks to expand their knowledge, all in an easy and accessible way.

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