

Activities of the National Center for Drug Information during COVID-19 pandemic

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Introduction

Since the beginning of the new Coronavirus (COVID-19) outbreak in December 2019, there has been a lot of information on COVID-19. Moreover, pandemic restrictions and lockdowns have altered access to traditional healthcare practitioners and community pharmacies. These factors made it hard for patients and healthcare workers to find trustworthy sources and reliable guidance to deal with the pandemic. Pharmacists play an important role in providing accurate information regarding COVID-19 disease, prevention and treatment, through pharmaceutical services, such as drug information service.

Drug information centers are crucial in providing scientifically supported and up-to-date information, especially in pandemic. The National Center for Drug Information (NCDI) was established in 1997 at the Faculty of Pharmacy in Skopje as a public highly professional and informative service available to all citizens and healthcare workers in Republic of North Macedonia. The NCDI expert team of pharmacists is involved in the scientific research activity, which is especially aimed at evaluating the quality of information on drugs available to patients and the rational use of drugs.

This study aims to describe and identify the activities of the NCDI in terms of education and dissemination of accurate and up-to-date information on the COVID-19 pandemic and its acceptance by the public.

Materials and methods

The core of the center's activities during the COVID-19 pandemic is presenting the latest news and information about the infection, prevention and treatment, by publishing scientifically referenced articles.

The articles were written in clear and accessible language with easy understanding for the public and disseminated online on the center's official website and social media (Facebook). The published articles were divided into five main groups (*SARS-COV 2 and Coronavirus pandemic, COVID-19 Vaccines, COVID-19 treatment, Vaccination campaign, and COVID-19 recommendations, protocols, and guidelines*). The number of published articles in each group and the number of visitors reached are used to provide an overview of The National Center for Drug Information's activity during the pandemic.

Results and discussion

With the global spread of the pandemic, there was a need for accurate information about the diagnosis, symptoms of the disease, complications, prevention, and treatment of COVID-19 patients. Therefore, for the period of January 2020 to April 2022, the center published 158 scientifically referenced articles and 5 guidelines related to COVID-19. According to available data, the total number of website visits in 2021 was 196 310, up from

98.87 % before the COVID-19 pandemic in 2020 (98 708 visits).

In the first group, 33 scientifically referenced articles (20.24 % of all COVID-19 articles) were published containing information about SARS-COV-2 infection, variants, disease symptoms, clinical issues, and immune response. The referenced article about IgA, IgM, and IgG response in COVID-19 patients attracted the most attention with a total of 7278 visitors (NCDI, 2020).

With the approval of COVID-19 vaccines, successful vaccination of the population in N.Macedonia presents several challenges, the most significant of which is public acceptance. In view of that, the most commonly published subjects for the 2020/2021 period were on COVID-19 prevention, accounting for 55 referenced articles (33.74 %). Knowing the fact that the main reason for vaccine hesitancy is concern about potential side effects, NCDI published referenced articles with scientifically-based information about safety of all approved COVID-19 vaccines. The most visited articles were: "Facts about COVID-19 mRNA vaccines" (6890 visitors), "What we know about Sinovac (CoronaVac) COVID-19 vaccine" (3156 visitors), and "What we know about Sputnik V vaccine" (2489 visitors). During the European Immunization Week in 2020, NCDI disseminated the vaccination campaign which was launched online across Europe by Coalition for Vaccination, reminding that immunization through vaccination is the best protection against serious preventable diseases. By proactively releasing up-to-date, reliable, and easy-to-understand information, NCDI aims to increase the public awareness of COVID-19 vaccination and help healthcare workers in delivering facts about vaccines based on scientific evidence. Additionally, NCDI acts to combat misinformation or inaccurate information spread on social networks.

Following the urgent need for new effective treatment and an increased interest in repurposing of available drugs, healthcare workers face challenging clinical questions. The center published 66 (40.49 %) referenced articles related to COVID-19 treatment in order to provide healthcare workers with the most recent clinical trial results and evidence-based information. Off-label use of hydroxychloroquine, chloroquine, remdesivir and ivermectin have been in the headlines as potential COVID-19 treatments. Among the article related to off-label use of these drugs, the referenced article "Ivermectin and its use in COVID-19 treatment" attracted the greatest interest with total of 12 395 visitors.

During COVID-19 pandemic, appropriate protocols and guidelines helped community pharmacists dealing with everyday challenges. Among 5 published referenced protocols (3.16 %), the most popular was "COVID-19 protocols for pharmacists" with 2778 visitors

(NCDI,2020). The purpose of this protocol, issued by The International Pharmaceutical Federation (FIP), is to provide relevant information and guidelines on the COVID-19 pandemic for community and hospital pharmacists.

The results showed that the general public is interested in the efficacy and safety of COVID-19 vaccines as well as potential treatment options. The most popular article was the one about ivermectin off-label use and its side effects. It is believed that the number of people reached was greater than quantified because the data presented here include only website visits.

During a pandemic, drug information centers can act in different ways. We believe that publishing up-to-date scientifically referenced articles is an effective method that is easily accessible to the general public and healthcare workers.

Conclusion

The significantly increased website traffic during the pandemic period indicates that The National Center for Drug Information plays an important role in providing the latest and scientifically-based information during the COVID-19 pandemic.

References

- National Center for Drug Information-NCDI. IgA, IgM and IgG response in patients with COVID-19. Available at: <https://nfc.ff.ukim.edu.mk/iga-igm-i-igg-odgovor-kaj-pacienti-so-covid-19/>. (Last accessed: June 1, 2022).
- National Center for Drug Information-NCDI. Facts about COVID-19 mRNA vaccines. Available at: <https://nfc.ff.ukim.edu.mk/fakti-za-mrna-vakcinite-protiv-covid-19-prv-del/>. (Last accessed: June 1, 2022).
- National Center for Drug Information-NCDI. What we know about Sinovac (CoronaVac) COVID-19 vaccine. Available at: <https://nfc.ff.ukim.edu.mk/shto-znaeme-za-vakcinata-protiv-covid-19-narechena-sinovac-coronavac/>. (Last accessed: June 1, 2022).
- National Center for Drug Information-NCDI. What we know about Sputnik V vaccine. Available at: <https://nfc.ff.ukim.edu.mk/sputnik-v-shto-znaeme-dosega/>. (Last accessed: June 1, 2022).
- National Center for Drug Information-NCDI. Ivermectin and its use in COVID-19 treatment. Available at: <https://nfc.ff.ukim.edu.mk/ivermektinot-i-negovata-upotreba-vo-tretmanot-na-covid-19/>. (Last accessed: June 1, 2022).
- National Center for Drug Information-NCDI. Ivermectin and its use in COVID-19 treatment. Available at: <https://nfc.ff.ukim.edu.mk/covid-19-protokoli-za-farmaceuti/>. (Last accessed: June 1, 2022).