

# Facebook Ads for Health Promotion Against Covid-19: An Environmental Medicine Perspective

Rahmad Agus Dwianto<sup>1</sup>, Nur Wening<sup>2</sup>, Elita Dwi Hapsari<sup>3</sup>

<sup>1</sup>Doctoral Student, <sup>2</sup>Associate Professor, Post Graduate Program of Management, University of Technology Yogyakarta, <sup>3</sup>Doctor, Dlingo II Community Health Center, Ministry of Health of the Republic of Indonesia

## Abstract

This research aims to provide innovative ideas to disseminate information on environmental medicine during the Covid-19 pandemic via Facebook. The socialization of the environmental medicine information to the public was hampered during the Covid-19 pandemic. This study provides innovative information dissemination strategies and to increase public awareness and knowledge about environmental medicine. The research method uses literature reviews from various recent studies on the use of social media Facebook for the dissemination of information. The study found that Facebook advertising as a digital platform for the dissemination of environmental medicine during a pandemic to the public is more efficient in terms of time, energy, costs, and a wider target market. This study found innovations, namely the use of Facebook ads as a digital marketing platform for the disseminating of environmental medicine programs to the public during a pandemic. Further studies could combine Facebook Ads with other platforms such as Google Ads, SEO, and TikTok.

**Keywords:** Dissemination Strategy, Environmental Medicine, Facebook Ads

## Introduction

Environmental degradation can cause several problems, such as natural disasters, drastic climate change, the emergence of disease, and environmental pollution <sup>(1)</sup>. The causes of disease can be in the form of unhealthy environmental factors and the entry of pollutants into the human body. Pollutants are substances that are harmful to the environment and when they enter the human body they will accumulate in the body and cause short and long-term effects depending on the type of substance. Diseases that arise are not instantaneous but can occur over a long period.

During a pandemic like this, disease cases due to the influence of environmental conditions also have a great potential to occur. The quality of the environment (water, air, and land) is decreasing, the management of B3 waste

and waste that is carried out improperly is outside of potentially bad procedures such as health problems for the people who live in the environment. The situation is getting worse with the current COVID-19 pandemic because medical waste is increasing. The Indonesian Institute of Sciences (LIPI) <sup>(2)</sup> noted that in the range of March 2020 to September 2020, it was recorded that the number of piles of medical waste including masks and Personal Protection Equipment (PPE) was estimated to be 1,662.75 tonnes.

Although the problem of *environmental hazard* is a serious threat and challenge in the health sector, public attention and awareness of environmental health are still low. From the results of research data from the Ministry of Health, it is known that only 20% of the total Indonesian people care about hygiene and health. This means that of the 262 million people in Indonesia, only around 52 million people have a concern for the cleanliness of the surrounding environment and its impact on health <sup>(3)</sup>.

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**Corresponding author:**

**Rahmad Agus Dwianto**

Email: Rahmadagusdwiantouty@gmail.com

Various socialization programs to increase environmental and health awareness have not run optimally. Previously, socialization was carried out directly through meetings, appeals, as well as regular community habituation movements to care for the environment. However, socialization activities during the Covid-19 period were hampered due to the number of government policies stipulating to minimize activities outside the home to prevent the spread virus.

To increase public awareness of the importance of environmental and health, as well as to socialize *environmental hazards* and *environmental medicine*, other, more effective ways are needed. One way that can be used is through a strategy through advertising or promotion with the social media Facebook. The tendency of people today like to access information through social media and follow trending habits. Therefore, Facebook can be a good alternative for the promotion of this field with a broad target because Facebook itself has users from various groups ranging from adolescents to adults, besides that the costs incurred are low, the reach is wide and the results can be monitored and evaluated. periodically.

Facebook Ads has many advantages that can be obtained in this study, including the main attraction of Facebook as an advertiser is that they collect information about interests, clear and manageable demographic characteristics including age, gender, reach of location, sociography, networking. social, and online behavior that can be used in developing the right profile for targeting <sup>(4)</sup>. The low cost offered to create and distribute advertisements online and the ability to target advertisements online more precisely can broaden the range of candidates advertising and allow candidates to create messages to a narrower audience than on television <sup>(5)</sup>. Facebook provides as an advertising interface has enabled a wide range of individuals to commission advertising, ranging from high-budget advertising, national advertising, with small budgets, as well as local initiatives <sup>(6)</sup>. Facebook data also has the advantage of being up to date and available in real-time <sup>(7)</sup>.

## Materials and Methods

The research method used in this research itself is using qualitative research methods. Qualitative method is research that uses a scientific background, meaning that it interprets a phenomenon that occurs and is carried out by implementing existing methods. Qualitative research is usually used in “exploration” and generally qualitative research is used in “measuring” <sup>(8)</sup>. In using qualitative research methods, these methods are usually used for interviews, observation or observation, and documentation <sup>(9)</sup>.

## Results and Discussion

The World Health Organization defines health as a state of complete physical, mental and social well-being and not simply the absence of illness or weakness. The living environment where all the inhabitants of the earth have a very big influence on the health and disease burden of the existing inhabitants. All diseases that exist theoretically can be caused by two factors, namely in the form of genetic factors or environmental factors. The causes of the disease depend on two things, firstly on inheritance and secondly on environmental pollution.

The reciprocity between humans and the environment raises several negative things that are accepted by the environment and have a direct impact on humans, namely in the form of water pollution, food poisoning, occupational hazards, and surrounding air pollution. While the effects of negative things that arise for humans themselves are in the form of high doses, namely acute health effects, and low doses, namely chronic health effects. High doses are acute health effects in the form of accidents, systemic poisoning, and respiratory diseases. While low doses are chronic health effects in the form of respiratory diseases, cancer (carcinogens), genetic diseases (mutagens), cardiovascular disease, neurological diseases.

An environmental problem can be assessed as a whole, with at least four steps involved namely determining the source and nature of any environmental contaminant or stress, assessing how and in what form

it relates to people, measuring effects, and applying controls when and where appropriate. Environmental health contains two important things, namely the danger to the environment, the effect on health, and the development of effective ways to protect from hazards in the environment. The goal of environmental health is to improve health by identifying, preventing, and reducing hazards in the environment and by assessing and managing the risks involved.

Environmental medicine is part of the broadest discipline - environmental health - a subfield of public health that is concerned with assessing and controlling the impact of people on their environment and the impact on them of the environment. All of these are interactions between risk genes and human health, including various risk factors, various diseases, and various genetic predispositions to disease. The goal of environmental medicine is to prevent disease. Environmental medicine focuses only on explaining how disease causes in an environmental context focusing on the effects that occur on the general population in the outdoor and indoor environment through air, water, food, consumer products, or soil. Besides, occupational medicine is a part of environmental medicine that deals with understanding the hazards of the work environment and their impact on

the health of workers.

### Environmental Medicine Ads Targeting

Facebook ads targeting is an advertising service by adjusting the audience according to the target Facebook has. Indonesia has a number of Facebook users around 130 million per month. With Facebook ads targeting, you can choose the types of audience according to the criteria that match the ad <sup>(10)</sup>.

### Audience Demographic Characteristic

**Gender.** Based on ads targeting result, the target audience for the “Environmental Medicine” ads is 759.153.510 Facebook users. From the data, the proportion of gender in the audience, both male and female, is the same.

**Age.** The target audience for these ads is 18-65 years of age and over (Figure 1). With a percentage of 19% of the audience is 18-24 years old, 34% of the audience is 25-34 years old, 20% of the audience is 35-44 years old, 13% of the audience is 45-54 years old, and 7% of the audience is over 65 years old. From the data above, it can be seen that most Facebook users are with a percentage of 34% of the audience aged 25-34 years. Meanwhile, the smallest percentage was 7% of the audience aged 65 years and over.

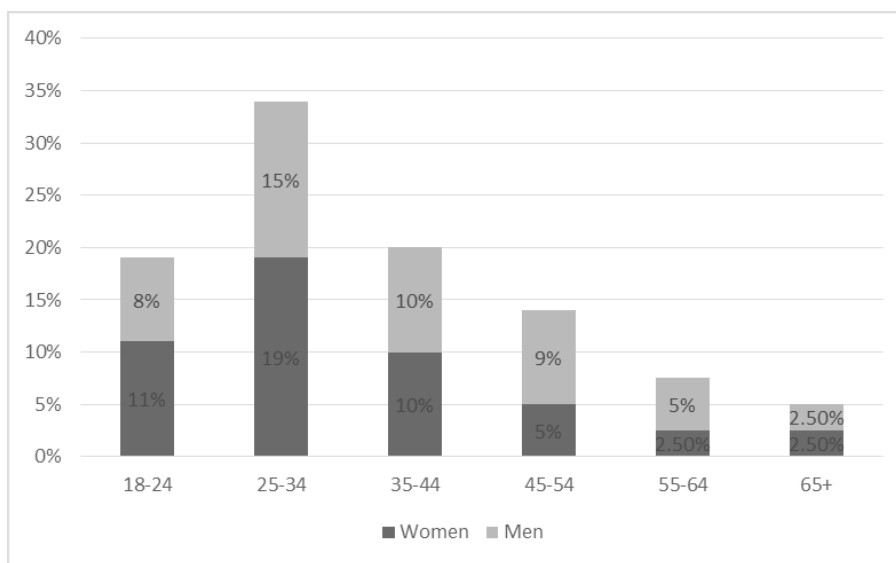
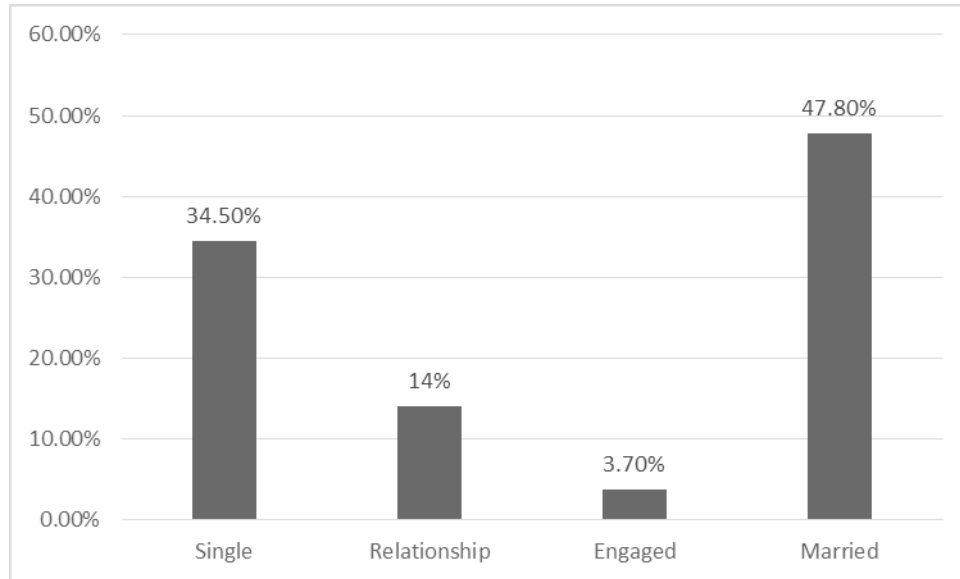


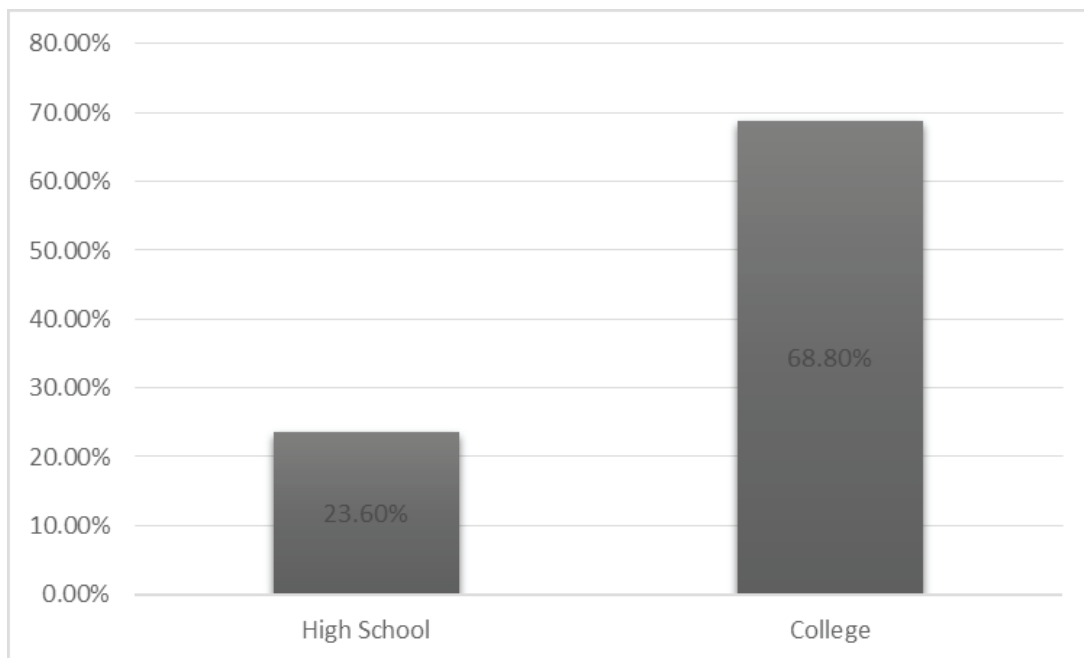
Figure 1. Age of Target Audience Environmental Medicine

**Marriage Status.** Not only based on gender and age which are used for the advertising target of “Environmental Medicine” but also based on marital status. In the data above (Figure 2), marital status can be divided into 4 statuses such as single status which has a percentage of 34.5% of the audience, relationship status with a percentage of 14% of the audience, engaged status has 3.7% of the audience, and married with a percentage of 47.8% of the audience. With this data, it can be seen that the most marital status is married with a percentage of 47.8% of the audience.



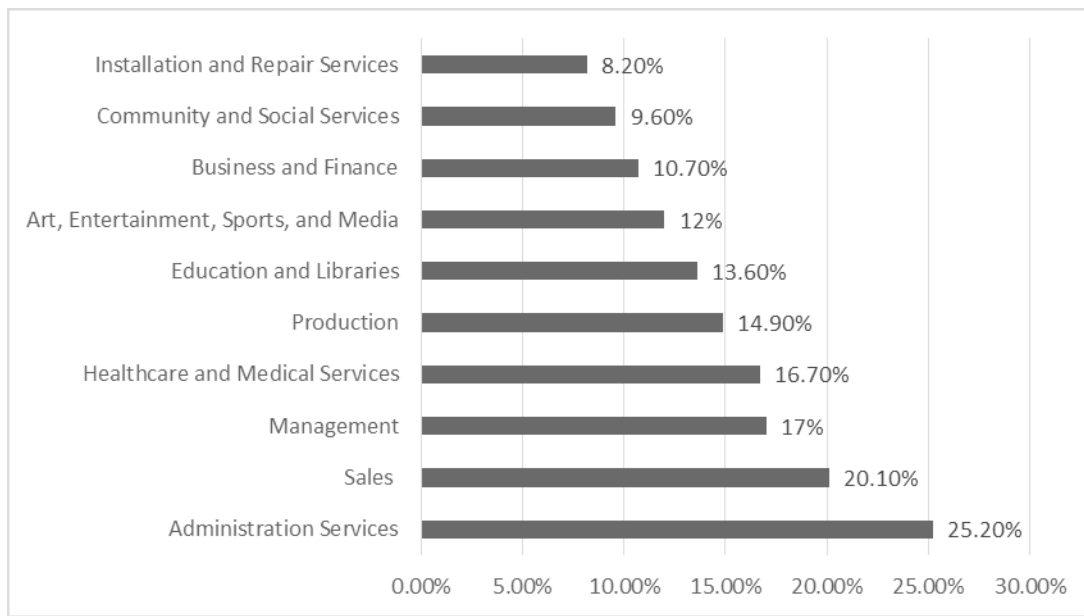
**Figure 2. Marital Status of Target Audience Environmental Medicine**

**Education Level.** Quite some audiences who are the target of the “Environmental Medicine” advertisement include the world of education starting from high school, college, to graduate school. The highest percentage of the audience is at the tertiary level. As many as 23.6% of the audience is from high school education, 68.8% of the audience is from tertiary education and the lowest percentage of the audience is 7.5% of the audience is from postgraduate education (Figure 3).



**Figure 3. Education Level of Target Audience Environmental Medicine**

**Job.** It is not only the audience from the world of education that is the target of advertisements but also from the world of work. There are 10 occupations included in the ad target, namely Administrative Service with a percentage of 25.2% of the audience, Sales with 20.1% of the audience, Management with 17% of the audience, Healthcare and Medical Service with 16.7% of the audience, Production of 14.9% of the audience. , Education and Libraries 13.6% audience, Art, Entertainment, Sport and Media 12% audience, Business and Finance 10.7% audience, Community and Social Service 9.6% audience, and the last one is Installation and Repair Service work as much as 8.2% of the audience (Figure 4).



**Figure 4. Job of Target Audience Environmental Medicine**

In the field of work, the Administrative Service is the target of “Environmental Medicine” advertisements because it can retrieve information from advertisements that are seen for additional knowledge purposes and as material in making decisions or policies related to administrative or public policy fields. Then in the field of work Sales can sell health products so that the information available in advertisements can be useful in attracting consumers and can increase the number of requests for a product being offered. Besides, management work in the environmental or even health sector can be useful as an ingredient in managing and taking actions that will have a major effect on decisions taken. This kind of advertisement is certainly very relevant and can be very enthusiastic for the field of work of Healthcare and Medical Service because it can be used as a medium in educating the general public regarding health. Not to forget, in the field of work, medical device production

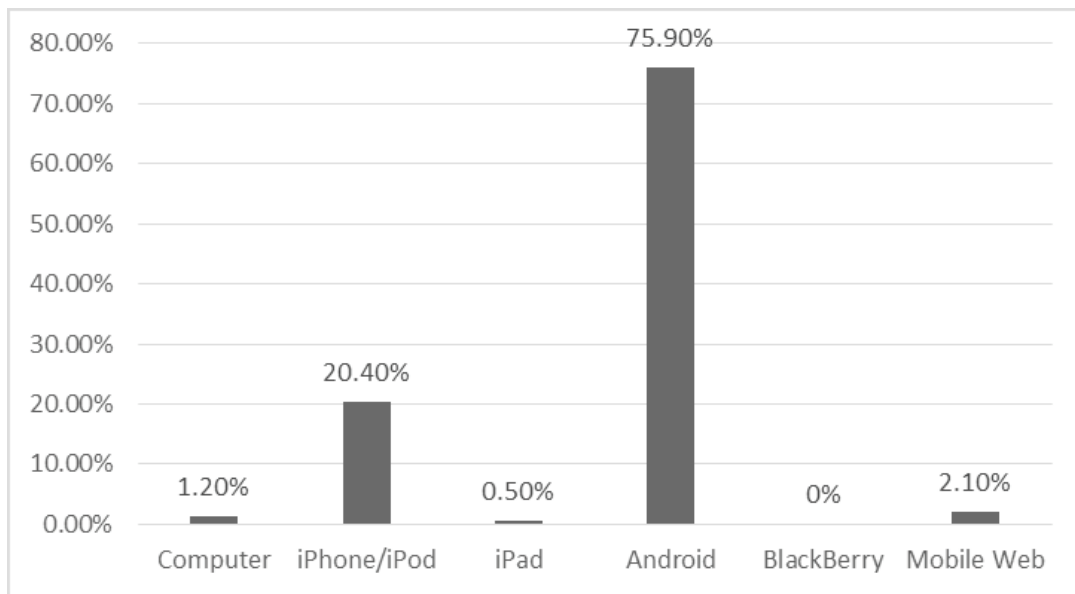
can consider what health products have a high chance of being produced and sold, especially during the current COVID-19 pandemic.

If the ad is targeted to a potential audience and has a work field that is relevant to the information displayed, then the ad has the opportunity to get high engagement, the information is conveyed right on target, and the purpose of the ad will be achieved.

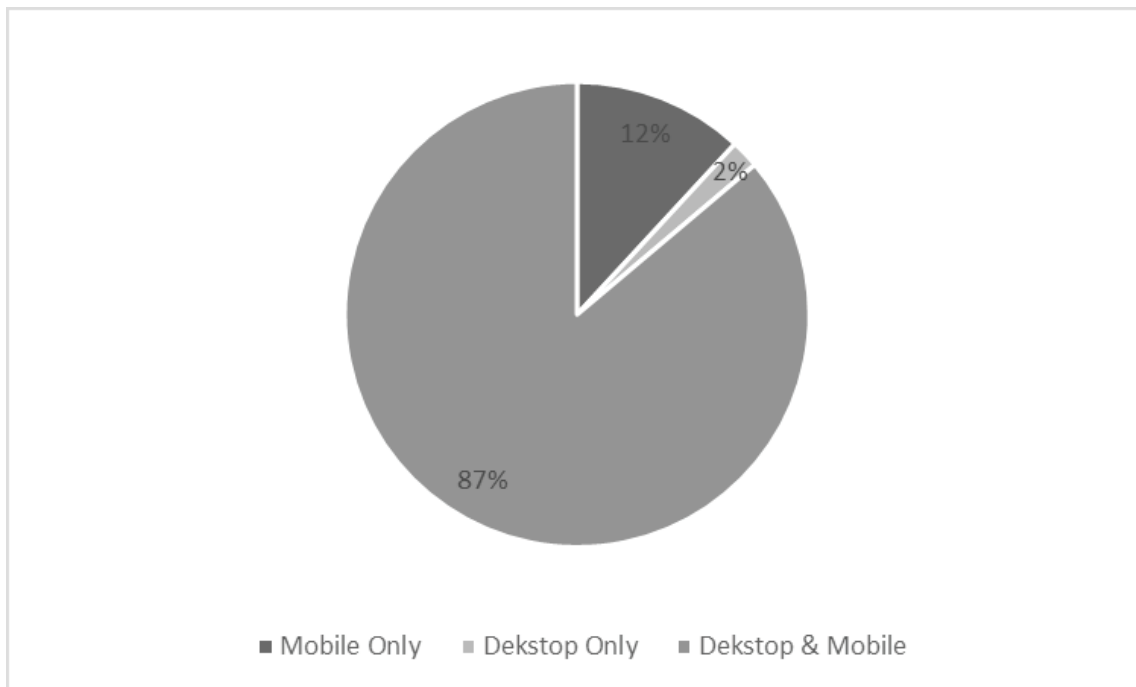
**Devices Used to Access Facebook**

**Device.** The highest number of devices used to access Facebook in the “Environment Medicine” advertisement were Android devices, followed by iPhone / iPod, Mobile web, Computer and finally iPad. The use of Android devices in accessing these ads reached 75.9%. The use of iPhone / iPod devices is ranked second in accessing Facebook ads, reaching 20.4%. 2.1% of mobile web

devices are used to access Facebook ads. Furthermore, 1.2% of computer devices are used to access Facebook ads. Finally, 0.5% of the devices used to access Facebook ads are held by the iPad (Figure 5).



**Figure 5. Device Use by Target Audience Environmental Medicine**



**Figure 6. Desktop and Mobile Use of Target Audience Environmental Medicine**

The number of percentages of the devices described on the ads targeting results (Figure 6). Where the result of the conclusion is that Desktop & Mobile are the most frequently used devices in accessing Facebook ads, then the next device for accessing Facebook ads is Mobile Only and the last device that is rarely used to access ads

is Desktop Only. This data is also supported by a report from We Are School, where mobile phones now account for 53% of the time spent online, but the data clearly show that other devices still play an important role in life<sup>(11)</sup>.

**Countries.** The country that most frequently accessed Facebook ads in terms of “Environment Medicine” was occupied by the US (United States) at 22.7%, followed by India which reached 19.9%, the Philippines at 8%, Pakistan at 3.8%, Bangladesh at 3.6%, UK (United Kingdom) 3.4%, Malaysia 2.8%, Nigeria at 2% and the last at 1.8%, namely Australia and Canada. This data is taken from all human populations in the world who are over 13 years of age. The data above is also supported by a report from We Are School, wherefrom the previous year to the present year there is an increase in the audience with ages between 13 years

and 17 years all over the world who access Facebook ads<sup>(11)</sup>.

### Keywords Suggestion

Keyword Suggestion is a keyword that appears or is most often suggested automatically to internet users when typing a keyword in the search field (Table 1). This keyword suggestion is especially useful for website optimizers. The main benefit of keyword suggestion is getting the most searched keywords in the search field. Many applications provide services for keyword suggestions. The image below is an example of a keywords suggestion.

**Table 1. Keyword Suggestion**

#	Keyword	Search Volume
1	Environmental Medicine	10.000
2	Occupational and Environmental Medicine	1300
3	Wilderness & Environmental Medicine	260
4	Occupational Environmental Medicine	260
5	Center for Environmental Medicine	90

### Conclusion and Acknowledgement

Facebook Ads as a platform for advertising the dissemination of environmental medicine information in by optimizing various superior features of Facebook. Optimization of environmental medicine dissemination by targeting advertising audiences with the right demographic, psychographic and geographic characteristics. Facebook ads enhance public brand awareness about environmental hazard with a wide advertising reach, high engagement, and low advertising costs.

**Ethical Clearance** - We have no ethical clearance to disclose. We have coordinated with the ethical clearance

committee of the Research and Development Institute, Ministry of Health of the Republic of Indonesia. This research paper does not require ethical clearance. This research does not use human subjects or other living things. The data presented in this study is not in the form of data on living things, but in the form of modeling to develop science and promote environmental medicine.

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**Conflict of Interest** - We have no conflicts of interest to disclose.

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