USE OF DIGITAL MEDIA AND ENVIRONMENTAL HEALTH: A CASE STUDIES IN THE TRANSMIGRATION REGION OF EAST LUWU REGENCY, INDONESIA

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Abstract

Purpose. This study aims to describe the use of digital media, mapping of environmental health information and its effectiveness. The use of digital media can increase awareness, supervision, community involvement, and preventive measures to protect the environmental ecosystem in the Transmigration Region of South Sulawesi Province.

Method. This research uses descriptive survey method. The data source was chosen by random sampling of 265 households in the Transmigration Region. Data collection is based on the choice of answers to the questionnaire questions for each indicator variable. Variables in the use of digital media, including selectivity and time of use. Variables in the use and effectiveness of digital media, including: information dissemination, public involvement, stakeholders and policy makers, investigation and surveillance of outbreaks, and data collection (crowdsourcing). Environmental health variables based on indicators: choice of environmental health messages in digital media. Message indicators according to the scope of the World Health Organization and Article 22 (3) in the Noomot Act 23 of 1992 concerning the scope of Indonesian Environmental Health. Furthermore, mapping and percentage of environmental health information needs in digital media. Data analysis used descriptive statistical results of each research variable.

Results: The use of digital communication media for the dissemination of dominant health information through social media applications, (72.5%), between 1-5 hours / day (53.6%). Potential implementation of environmental health message needs for water supply and sanitation 44%, garbage disposal and security 32%, home and residential health, and sanitation measures 8%. The effectiveness of the use of digital media for environmental health is beneficial for public engagement, stakeholders and policy makers 43.0%, information dissemination 29.1%, surveillance investigations and outbreaks 20.4% and crowdsourcing for data collection 7.5%.

Conclusion. Digital media can increase awareness to protect environmental ecosystems and health risk behavior. The use and effectiveness of digital media in the dissemination of environmental health information to stakeholders, policy makers are two way communication.

Keywords: Digital Media, environmental health, Transmigration region, and South Sulawesi.

Introduction

The development of communication and information technology creates digital communication media. The era of digitalization requires every individual to have the ability to access information in various fields of life. Digital communication media, such as the internet network (online). Websites, social media, and mobile applications can function to disseminate environmental health information, to the public, health service providers, and policy makers (1). Environmental health information can be accessed easily, cheaply, and available at any time. This information is always needed to improve communication and community involvement in the field of environmental health (2), because it is a primary need for the community (3).

Digital communication media based on environmental health information services continue to be pursued by the South Sulawesi government towards Healthy Indonesia 2025. To provide insight into environmental health issues, namely an environmental condition that is able to sustain the
ecological balance between humans and the environment in order to ensure the healthy state of humans (4). Environmental health problems, especially in rural areas and densely populated settlements due to community unconsciousness. This factor causes the condition of environmental quality is still low, such as access to clean water, waste disposal facilities, waste water supply facilities and waste disposal facilities (5).

The results of an environmental health risk assessment have been carried out in island areas in South Sulawesi, for example in Kokoadi Village, some unhealthy behaviors that provide opportunities for exposure to hazards, such as the behavior of not washing hands, using soap (CTPS) (54.2%), defecating Indiscriminate (BABS) (62.7%), do not process and manage household waste (96.1%) and behavior does not treat drinking water (25.5%) (6). Digital communication media is used as an alternative to obtain information and communicate health problems (7) To increase awareness, desires, abilities, and healthy environmental behavior (8).

The results of the identification of authors through Google searching engenering, various websites, Blog portals have provided environmental health information, for example on the official website at http://www.indonesian-publichealth.com/k_health-lingkungan-3/. This website can be accessed openly. Based on the data there are 51% of the population of 143.27 million Indonesians actively use the internet in 49.49% districts / cities and villages (48.25%) to obtain information (9). For example, the ease of accessing the internet is available in North Luwu Regency, South Sulawesi Province, (Indonesia) which is a transmigration area. Rural areas inhabited by transmigrants due to the Indonesian government's program to reduce population density in an area, since 1971. (10)

Transmigration region communities can use internet-based digital networks to obtain environmental health information. For example, at-risk youth, parents, patients, health care providers, or policy makers, who tend to utilize different digital media channels (11). For the purpose of campaigning and promoting environmental health education [12], based on methods of delivering community messages, interpersonal, as well as the promotion of knowledge, attitudes, or changes in health.

As the results of the Pew Research Center's Technology and Internet Program research report in 2017 that 83% of a representative sample of American adults are very interested in finding health information news online. (13). Social media applications, trusted social networks have become many sources of relevant health information (14). A process of communication, through the selection, engagement and use of digital communication media (15).

This study aims to identify digital communication media, exposure and environmental health information (audience/user analysis of transmigration regions) needed. Furthermore, it functions as a source of data, information, and opportunities to influence digital media users and policy makers to increase public environmental health awareness, especially in this research area.

Methods

Research Location

Descriptive surveys are used for research measurements. Then, descriptively or narratively in a representation of the research location. The research location was in the area of Kertoraharjo Village, East Tomoni District, East Luwu Regency, South Sulawesi. The population number of families as much as 870. (16) Village Kertoraharjo selected as transmigration since 45 years ago through the Indonesian government's transmigration program. Furthermore, a simple random sampling technique was used referring to Krejcie and Morgan's tables, totaling 265 samples of the Family Head (17). Two-month research period, March-April 2021.

Measurement And Data Collection Techniques

Measurement data is sourced from the total number of research samples. The research instrument was a questionnaire. Data collection refers to the measurement of digital media usage variables,. first, selectivity and time of use. Indicator selectivity on the choice of digital media
applications; social media, Website and Mobile app. The use of time used by respondents accessing digital media.

Second, the use and effectiveness, adopting the opinion of Megan Hampel, namely using four indicators relating to the identification of environmental health. The indicators are first, information dissemination; second, public involvement, stakeholders and policy makers; third, epidemics investigation and surveillance; and four, crowdsourcing. (12). Respondents chose items based on the level of dominance of the effectiveness of the use of digital media for environmental health.


For Article 22 (3) of Law No. 23 of 1992 concerning the scope of Indonesian Environmental Health as many as 8 items, namely; 1. Water and Air Sanitation, 2. Safekeeping of solid waste / rubbish, 3. Safeguarding of liquid waste. 4. Safeguarding waste gas, 5. Safeguarding radiation 6. Safety measures, 7. Disease vector safety, 8. Health and safety. (18) The choice of each Indicator is mapped and presented based on the item number of the respondents' preferred percentage for environmental health information needs in digital media. Then the collected data is managed by researchers using Excel™ and SPSS version 23 applications, then the data is analyzed statistically descriptive based on each variable of this study.

Result

Use of Digital Communication Media and Environmental Health

The participation of the head of the family was 265 participants. Identification of digital communication media has the potential to spread environmental health information to the public. Figure 1, indicates that the highest dominance in social media applications, 72.5%, Website 21.1% and Mobile Application 6.4%. The use of social media as a means of meeting the needs of environmental health information, such as WhatsApp, Youtube, Facebook, Instagram, is dominantly used by respondents to obtain environmental health education messages. The reason is because it provides a variety of access to information about the environment and health, in the form of text, images and videos to illustrate, entice, and/or worry about. In addition to providing virtual communication space, exchanging information and unlimited access.

Figure 1. Identifying the dominance of respondents using Media

Figure 2. Time used for digital media
Figure 2. The level of use of digital media duration of 1-5 hours / day accessed as many as 142 (53.6%). Most respondents actively, independently and responsibly access the dissemination of environmental health information. The duration of use as a form of fulfilling information needs, the process of investigating interactions and symbolic structuring in themselves relating to their health, by ways of navigating and sometimes interacting on environmental health issues. In this study respondents used the time to access digital media to select portal sites about health with credible and trusted sources.

Figure 3. Environmental health information Needs

Figure 3, shows that information on environmental health messages is based on the requirements of the World Health Organization, and is applied in Indonesia in Law Number 23 of 1992 concerning the scope of Indonesia's Environmental Health. Respondents choose dominant in searching is the supply and sanitation of 44% clean water. This respondent choice refers to the awareness of environmental problems and health risks that can arise and motivated to behave positively towards the environment.

The need for information on clean water sources to meet limited supplies can cause illness. Then, order 32% rubbish problems. Waste and its processing problems at the household level. Garbage thrown away will easily pollute the environment and endanger the community. The risk of pollution and the spread of disease vectors due to waste will be even higher. Finally home health and / or housing 16%, and sanitation measures 8%. Home and settlement health standards and sanitation measures that are healthy, safe, harmonious and sustainable are also information for respondents.

Completeness of infrastructure and facilities to support a house or settlement, the main priority. United Nation Water (2008), established 4 components to assess the feasibility of sanitation in an area, namely household basic sanitation, household solid waste management, drainage of household wastewater and rainwater and industrial waste management. (19)

Furthermore, environmental health literacy begins with understanding, individual awareness of changes in attitudes and behavior based on information received (20). This condition can help people to present situations, events and reflect information to understand the causes of environmental health problems, to behave positively as a form of new health promotion.
In Figure 4, the effectiveness of the use of digital communication media for environmental health needs is dominant in public engagement, stakeholders and/or policy makers 43.0%. The use of digital media is useful to facilitate communication between decision makers and interactive participation through two-way communication related to environmental health issues. An effective social media platform for the exchange of knowledge between researchers and environmental health policy makers. The aim is to reduce the uncertainty of environmental health policy making. Effectiveness of information dissemination 29.1%, surveillance investigations and outbreaks 20.4% and crowdsourcing for data collection 7.5%. Increased awareness of the message of education and environmental health literacy minimizes ignorance of environmental health risks, especially for respondents in the study area.

Thus, the selection of the use and effectiveness of digital communication media in the future transmigration areas can meet the needs of environmental health information. Although, it is not easy to understand the message of environmental health risks through online, for example, garbage, sanitation and environmental health risks. Presentation of information aimed at increasing public awareness of the importance of maintaining environmental health for sustainability.

Conclusion

The use of digital communication media and environmental health to inform individual and residential environmental health problems. Social media, websites (portals) and mobile apps are used by respondents 1-5 hours a day to increase environmental awareness, especially water supply and sanitation by 44%. The use and effectiveness of the use of dominant digital media in public engagement, stakeholders and/or policy makers 43.0%, encourages, motivates participation in the form of two-way communication related to environmental health issues.

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