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Analysis of Health Information-Seeking Behavior in Communication Media, Urban Society in Makassar City, Indonesia

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Abstract

This study purports to identify and analyze health information-seeking behavior in communication media. Data were collected through observation and questionnaires, and the research location was the urban area of Makassar, South Sulawesi Province, Indonesia. The research data were analysed descriptively and quantitatively through a variable scale of frequency and cross-tabulations. Direct associations were made between the health information-seeking behavior on media channels and sex-ratio, age, and level of education. Health information-seeking behavior was very frequent on the internet-based media channels (43.9%), with an average duration of 1-4 hours per week (55.3%); health information about nutrition was the most sought-after by urban communities (30%). We conclude that maximizing the search for health information on inter-net-based media channels is essential in increasing awareness and shaping attitudes and behavior toward healthy living standards.

Keywords: *Health Information-Seeking, Communication Media, Urban Society, Makassar City.*

Introduction

In the globalization era, the interconnection of people worldwide is drastically changing people's behavior in meeting their information needs. For instance, in the public health sector, emerging media channels shape community preference for health information. Communities have been found to prefer health information pro-vided by media platforms to that provided by visiting doctors (Tustin, 2010). Because internet-based media offers convenient access to health information needs, interactivity, information tailoring, and anonymity, browsing and securing public health information is demanding. Furthermore, other factors also may impact health in-formation-seeking behavior, such as web skills, cognitive skills, and psychological and media resources (Cline and Haynes, 2001). Social status may also have an impact on community health, depending on access and ability to utilize health information (Percheski & Hargittai, 2011).

Healthy lives begin with the need to obtain appropriate health information to improve the community's health standard. The urban community, no matter where it is, is commonly characterized as active, independent, and responsible for reducing the risk of disease and

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improving the health of each individual through health information media (Percheski & Hargittai, 2011). In the urban community in South Sulawesi, for example, health information media channels are accessible in many ways, such as broadcast media, print media, online media/website portal sites, and social media (sharing information from WhatsApp Group and Telegram Group (Dobransky & Hargittai, 2011)). Social internet-based media has played an essential role in providing health information and social and emotional support via peer-to-peer in-teractions, driving the health service revolution effectively and efficiently.

Consumers' information needs vary depending on the health issues of interest. Benefits of health seeking on social media, in addition to filling a need for health information, include the social and emotional support health consumers gain from peer-to peer interactions.

E-health, or online-based health service programs, can be a revolutionary platform in overcoming the distance problem to meet urban community needs in South Sulawesi (Syahrul, et al., 2022). The e-health service platform improves national health service programs and speeds up the achievement of national goals. The platform offers harmonious, con-sistent, and accessible information. The health service program realizes mandatory fulfillment of urban service standards (SPP), namely the realization of a livable, safe, and comfortable city, the creation of a green city that is climate- and disaster-resilient, and the creation of a smart and competitive city (Kemenkes, 2016). Ir-respective of offline and online media, doctors and health practitioners are still available and accessible.

Health information-seeking behavior differs by individual and country according to the health problem at hand, healthcare, alternative medicine, nutrition, mental health, physical exercise, and health information media channels. In Thailand, about 70% of the individuals in urban communities access digital-based health information about general healthcare, disease, and nutrition information (Maon, et al., 2017). In the USA, community behavior is funda-mentally shaped by medically underserved issues, socio-health disparities, and demographic inequalities by ethnicity, level of education, household income, and residence place (rural vs. urban). Communities tend to browse health information on online media platforms and other healthcare technologies (Lustria, et al., 2011) that can reduce uncertainty regarding health status and build individuals' self-confidence to be healthy. However, the quality and credibility of online-based media and the lack of awareness of the community about choosing the right information and media platform are intertwined issues (Silver, 2015).

Generally, a cutting-edge media platform is not always the most preferable amid urban communities. In the United States, although almost all media platforms are online (86%), many still prefer offline "traditional" media (such as libraries, books, brochures, magazines, and newspapers) or health professionals as the primary source of health information (Jacobs, et al., 2017). This finding establishes trust and access to traditional media information as motivators to prefer one source of information over another. Other sources of health information are state-

owned and private television. Disclosure of health material information is delivered indirectly in the content of news, soap operas, and dialogues, or directly through advertisements (Mulyana, 2002). In theory, the youngest generations have difficulties accessing traditional health information outside than the internet, with its benefits including convenience and confidentiality. Therefore, the internet has become the primary means of exploring a diverse range of health information subjects (Grya, et al., 2005).

Another interesting finding suggests that many individuals who previously enjoyed offline-based health information platforms (traditional media and health care) have recently found the internet to be a more convenient primary source (Rains, 2008). On the internet, they can obtain a second opinion or hear directly from practitioners and doctor-patient interactions. Meanwhile, elderly, educated, and wealthy populations express a greater pref-erence for the internet (Rains, 2007). Online-based media is attractive for browsing health information because of its access, anonymity, potential for interactivity, and social support (Cline & Haybes, 2001).

In the context of the urban community, health and disease issues present a complex situation. Health problems are not solely caused by individual behavior or neglect. Still, most illnesses suffered by individuals can be complicated by a lack of knowledge and discernment among various health information media channels. In South Sulawesi, there are various media channels to help urban communities obtain health information and guide people in making health decisions, including changing attitudes, changing knowledge, and maintaining healthy be-haviors. This paper will reveal the health information-seeking behavior of the urban society of Makassar City on internet channels that can contribute to increasing awareness and reducing public health risks.

METHODS

Our research aims to study the behavior of health-seeking information in urban communities. Makassar City was chosen because it is a metropolitan city and the largest city in eastern Indonesia. It is multicultural and in-habited by people across a range of education and income levels. Thus, the information obtained could capture a wide spectrum in terms of health information-seeking behavior by the public. This research can also assess the transformation of behavior changes that have occurred in the analog era, which has been widely publicized along with the current digital era. Thus, this research seeks to answer questions related to health information sources based on people's preferences, the proliferation of both digital and traditional sources, information-seeking be-havior, and the relationship between education level and information-seeking behavior.

Primary data were obtained from the urban society of Makassar in the South Sulawesi province of Indonesia and focused on adults aged 18 years and over. A total of 300 questionnaires were disseminated; 269 usable questionnaires were returned for analysis.

Respondents were asked which platform they used to search for health information, the length of time used to search for information, and the category of health information sought, as well as their gender and education level. In addition, the respondents' opinions regarding their search for information were recorded.

Measurement of data was based on research variables, including the demographic data of the respondents (their gender and education level). The variables regarding health information-seeking behavior on the internet were the frequency of using the internet for health information-seeking (hours per week) and the health topics sought. The choice of each scale of the differential variables and cross-tabulations was based on the respondents' highest choice in terms of number of levels, which was then analyzed quantitatively and inductively.

The data collected were then checked for validity by assessing the logic underlying the answers to each question asked and the completeness of the information submitted. The data were then categorized and tabulated and once processed, analyzed descriptively to answer the hypothesis. Analysis was also carried out by relating the research findings to various theories in light of their relevance to current conditions

RESULT AND DISCUSSION

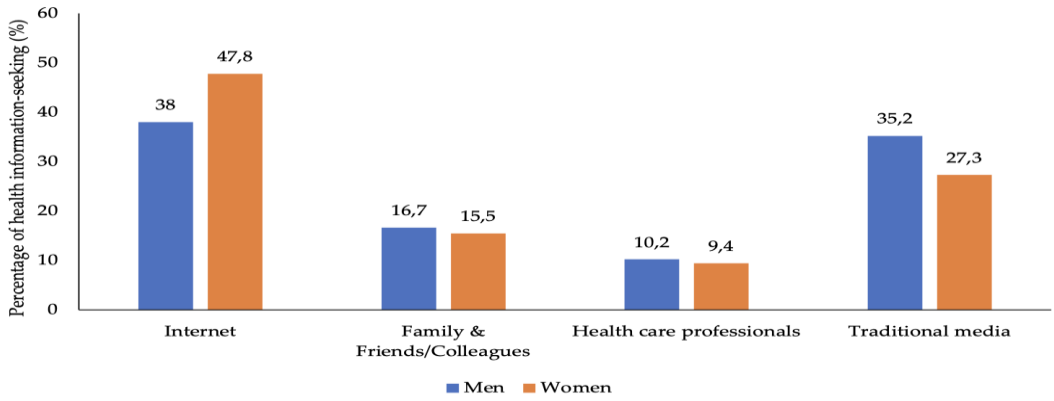
Personal Characteristic for Health Information-seeking

Gender

Along with the development of technology, the search for health information that was previously conducted only through print sources or on certain health sites has now spread widely throughout the internet. The use of the internet has changed people's relationship with information and made "online resources" an important source of health information in America (Fox, 2011). The internet has become important for men and women, without exception. However, regarding health information-seeking, men and women demonstrate differences in habits.

Gender preferences in choosing health information media (Figure 1) show that both men and women prefer to choose the internet when seeking health information; health care professionals are their last choice. The internet has created channels of easily accessible information (Stefan, 2013) so that people can retrieve what they are searching for more easily than when using other communication media. Every day, people encounter an increasingly large and diverse ocean of information through websites, mass media, social media, and published works. People can find information in a variety of formats from an unlimited number of sources. The quality of information varies widely among the choices of information available. Usually, people draw from authoritative, current, and reliable sources in addition to sources that are biased, outdated, misleading, or even false. Online searches also tend to produce more information so that people have considerable freedom to choose the information they want.

Women were found to comprise the highest percentage of internet users engaging in health information-seeking behaviors, followed by men. Men were found to prefer traditional media, such as reading a textbook or research journal to get information about health. This phenomenon could be generalized as women seeking information for direct applicable needs; men for scientific needs. Seeking information using traditional media would take longer and require deeper understanding than using the internet, and women charged with family healthcare responsibilities need to get fast and easy-to-understand information. Therefore, they turn to internet sources.



- **Figure 1**. Preferences in choosing health information media by gender

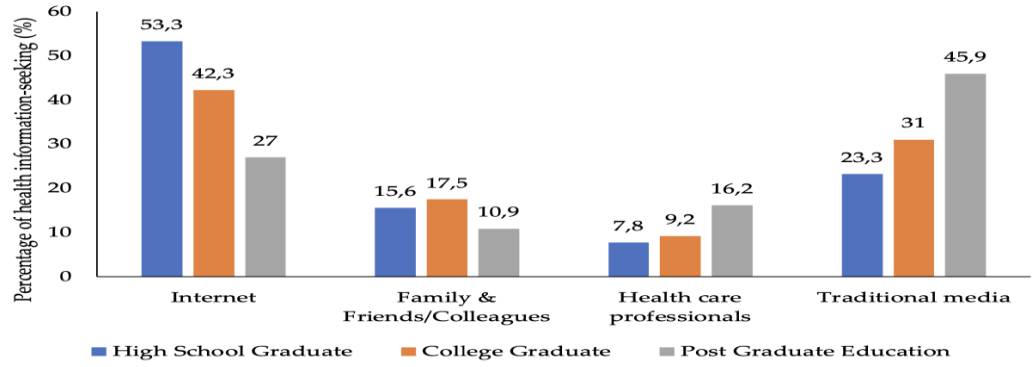
Educational Level

As shown in Figure 2, education level affects health information-seeking behaviors. The majority of respondents, those who are high school graduates, chose health information sources via the internet. Respondents with post-graduate education chose traditional communication media for health information-seeking, compared to other forms of media. Individuals' level of education can control their attitudes and behavior in choosing communication media as the primary source of seeking health information (Eszter, et al., 2018). With higher education, individuals in an urban society who have health problems and need up-to-date information are more likely to use research journals as a source of health information.

The data in Figure 2 also shows the distribution trend of the use of information sources, showing that in-formation sources from colleagues or family or health professionals are much lower than the internet and traditional media sources. This phenomenon occurs across all educational strata groups.

The fact that the lowest strata education group in this study predominantly uses the internet indicates that this group relies heavily on health information from internet sources. More than

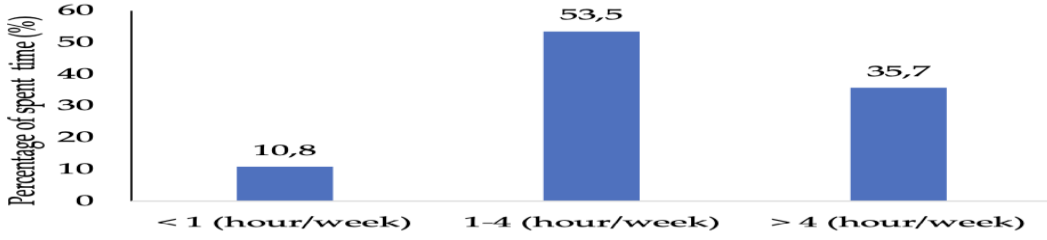
half of the respondents in this group stated that they used the internet as a source of information. This phenomenon is worrying, considering that internet-based information is so abundant and difficult to distinguish between credible sources and non-credible sources. On the other hand, the relatively low level of education may affect information literacy skills with regard to the internet.



- **Figure 2**. Preferences of choosing health information media by education level

Duration of Time Spent for Health Information-seeking

Health information-seeking behavior requires an average duration of time spent in hours per week to obtain or fulfill health information needs, as shown in Figure 3. The duration of time used by respondents to seek health information through communication media is mostly 1-4 hours/week (53.5% of respondents), followed by a du-ration > 4 hours/week (35.7% of respondents), and finally <1 hour/week (10.8% of respondents). If it is associated with the findings (APJII, 2017) that the average duration of internet use reaches 4-7 hours in a day, it seems that the time allocation for searching for health information on the internet is quite high. On the one hand, this could be positive, because it shows the respondents' attention to health. On the other hand, this may indicate that it is necessary to increase internet media literacy among users. This is very important, especially for information related to health. Health-related information is sensitive and can cause harm even death, if presented or used incorrectly.



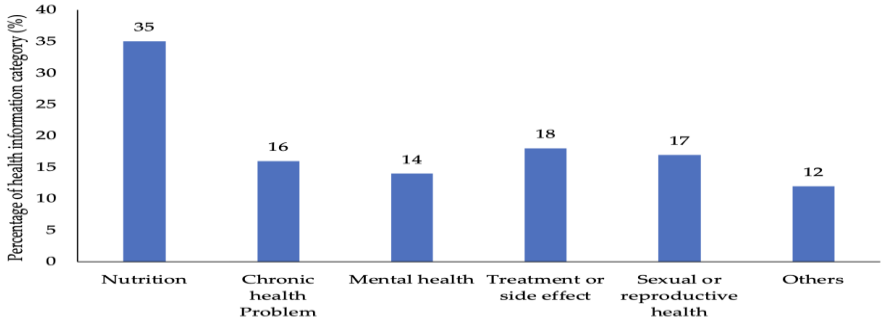
- **Figure 3.** Percentage of spent time on health information seeking

Health information category sought by urban society

The categories of health information in communication media sought by urban communities is explained in Figure 4. Respondents generally seek more information related to nutrition than treatment or side effects, sexual or reproductive health, chronic health problems, and mental health. Nutrition and health problems in Indonesia tend to be complex. For example, this topic includes information on the regulatory patterns and nutritional composition and intake of food, diet, vitamins, and nutritional supplements (Choiriyah, et al., 2022).

The urgency of obtaining nutrition knowledge, given cases of malnutrition in Indonesia, demands attention. Information related to nutrition is important for the community to maintain health. Consider the cases of pregnant women who need to maintain fetal health, children whose development and growth is critical, and people who undergo diet programs with the aim of losing or gaining weight. The results obtained from these respondents' data indicate that the urban society in Makassar has a high level of concern for the importance of maintaining a balanced diet. This result is also supported by data from the South Sulawesi Provincial Health Office, which reports that the stunting rate in Makassar City has decreased significantly every year. Most recently, it has decreased from 10% in 2020 down to 9% in 2021 (Sulselprov.go.id, 2022).

Information about treatment or side effects was the second most sought-after topic, following nutrition. From the results obtained, there are two potential implications. The first is that some urban communities in Makassar may be skeptical of the drugs they have been prescribed by doctors. Another implication is that some urban communities in Makassar may seek information on drugs that can cure their illnesses, which they will then look for at their local pharmacy or convenience store. This could have a harmful, even fatal, impact. In Indonesia, there are many types of generic drugs available in pharmacies and convenience stores. Many people are in the habit of buying drugs without the need for a doctor's prescription. This could threaten life safety if people obtain in-for-mation about drugs from sources that are not valid or cannot be accounted for. In administering drugs, medical professionals must consider factors such as dosage, the patient's age, and the presence of other chronic diseases that may conflict with the substances contained in the drug. internet searches could elide all of this.



- **Figure 4. Health information sought on media channels by respondents**

The next most sought-after topic was sexual or reproductive health. As shown in Figure 4, 17% of respondents sought this topic in communication media. Providing information through the internet can help disseminate information related to reproductive health. The results of research by [Ann, et al., 2018] show that reproductive health information found through the internet can be used to increase the knowledge, attitudes, motivation, and self-efficacy related to reproductive health, and can motivate adolescents in particular to get tested for HIV and other STIs. At the same time, because it is easier for people to get information to educate themselves, it can also be harder to gauge the accuracy of that information. For example, if pornographic videos are used as a means of learning about re-productive health, this can lead to ill effects including unrealistic expectations about sexual relations, unplanned pregnancy (KTD), the spread of STIs, and the normalization of rape culture.

Other topics assessed in the questionnaire were information about chronic health problems (e.g., cancer, heart disease, stroke, hypertension, diabetes, obesity). Information sought varies according to preferences, concerns, and relative health risks for members of urban communities. Dissemination of health information topics through communication media can help urban communities to collect real-time information about health and can help combat disease risks and improve overall well-being. But the widespread availability of inaccurate or dubious information can also have negative, even life-threatening, impacts.

The internet has become an important communication medium and can increase the dissemination and seeking of health information among urban communities. Continuous efforts to maximize the potential of this communication medium can provide great value for users. The variety of information and health topics available and the ease of access has made the internet the primary source of health information, and its users continue to increase in urban areas, such as the city of Makassar.

Thus, traditional health communication media (books, brochures, magazines, and libraries), family, friends or colleagues, and finally, health care professionals (doctors, free practitioners)

serve an essential role as a source of information to provide information and exchange messages about health knowledge tailored to their target. Users of health communication media need to combine especially in providing services, promoting, and testing the quality of health information. For example, internet-based telecommunications and information technology media and health care professionals promote health through telemedicine. Telemedicine is vital in providing essential information and overcoming service barriers and health information gaps between doctors and patients (Giulio, et al., 2020). Effective, integrated, and coordinated health information-seeking behavior is an integral part of implementing the goal of building a better and healthier future for everyone.

Health anxiety, self-efficacy, internet-efficacy, and neuroticism have been identified as psychological factors that predict the use of the internet to search for health information. Motivation in conducting the search for health information can be based on an individual's perception of health, their current health status, and their family medical history (Lagoe & Atkin, 2015). A study conducted in the United States in 2017 found that most of the research subjects used the internet as their first reference in seeking health information compared to family/friends/coworkers, health care professionals, and traditional media (Jacobs, et al., 2015).

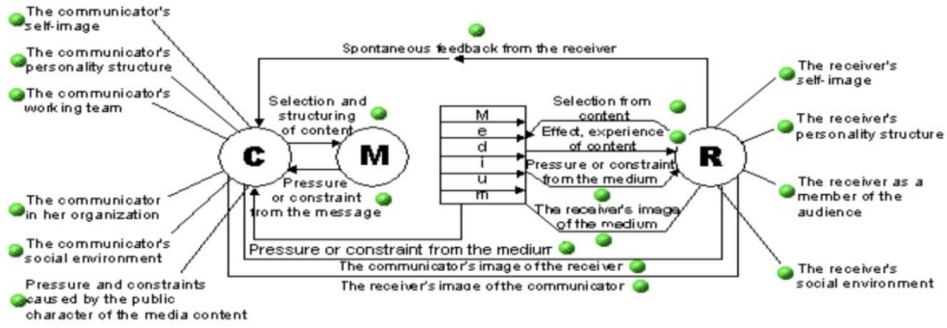
Urban communities enjoy accessing the internet as a primary source regardless of place or time. Competent media provides information and interventions for health conditions. Besides being a provider of access to in-formation searches, various health promotion programs are interactive, communicative, and efficient reference materials to which users turn before consulting a doctor or paramedic. As explained by the World Health Organization (WHO), the attributes that need to be considered in distributing health programs are accuracy, availability, balance, consistency, cultural competence, repeatability, timeliness, and understanding (Ewa, et al., 2020). Urban communities need this and need to change their behavior by taking, using, and implementing the information provided and sought.

Women are the dominant gender who use the internet as their media of choice for health information and are associated with high health awareness compared to men who can lack motivation to engage with health information. Previous research shows gender differences related to health information-seeking habits among college students. Women are often responsible for healthcare and family health behaviors, especially those of children, which drives their need for health information. Thus, women have an ideal position to obtain and benefit from health information disseminated through communication media.

This study's findings also showed that, although the internet is the primary source of health information-seeking behavior, urban communities still need traditional media (books, brochures, magazines, and libraries) and interpersonal media as sources of obtaining health information. We expect various health information-seeking behavior to provide knowledge, understanding, and

behavior change in reducing health risks that occur with regard to the limitations and accessibility of health information.

In addition to the internet being proven as a source of health information that continues to grow, Maletzke's model of the communication process (Figure 5) is still in line with current developments in communication technology. The role of the internet is included in the mass media group based on the theory of functionalism as a perspective on media (McQuail, 2010). Here, the internet as a medium has the functions of information, correlations, continuity, entertainment, and mobilization.



- **Figure 5. Maletzke's Model of the Communication Process**

The Maletzke Communication Model in question is a mass communication process model that emphasizes four main components, namely: (1) communicator (information provider), (2) message (message/information), (3) medium (internet), and (4) message-receiver (respondent). Each component has an indicator, which is also a consideration/condition in the communication process from the communicator to the recipient through the mediation of the media.

Related to this research, respondents as receivers (recipients) in searching for health information through the internet have made information selections. Their selection is based on four indicators: First, the relationship with the respondent's self-image. Second, the relationship with the personality structure of the respondents. Third, the relation of respondents as members of the audience (audience). Fourth, the respondent's relationship with their social environment.

Based on the information search process by the respondents above, it appears that the respondents' search for health information is caused by their need for curiosity (need cognition) and their intuition style (personal cognition style). The typology of human needs that can be met through mass media comprise the need for entertainment, personal relationships, personal identity, and information gathering.

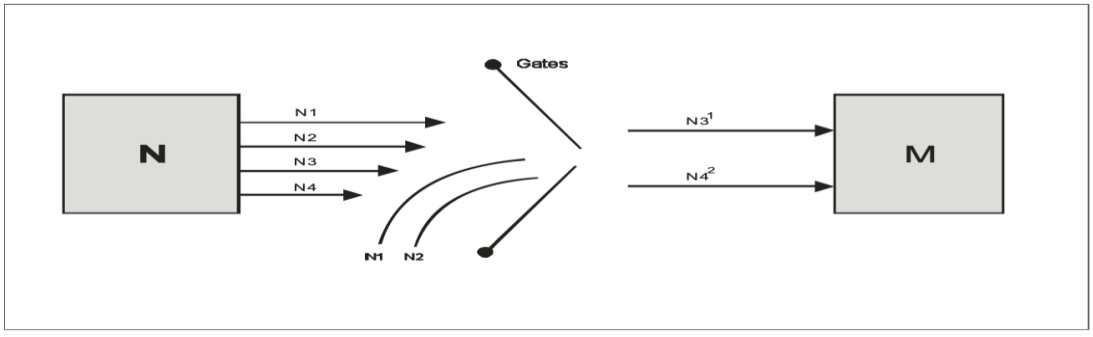
Furthermore, the model above explains how R (Receiver) is positioned in its role as the recipient of the message. In this case, the receiver will select what media he consumes according to the

personality of the individual (respondent) and the needs that motivate each individual (respondent).

A receiver will also choose a certain media based on what is trending or developing in the social group or community he is in. Wherever it is, this is in accordance with the approach of the Uses and Gratification Theory, which states that someone will look for news that is useful to meet their needs (which will be implemented in groups).

In addition, the messages we receive from the media will be filtered by the beliefs, behaviors, and values held by the respondents, which are formed from the results of discussions and social contacts with the people with whom we socialize.

According to Maletzke, audiences are not influenced by mass media in an empty state (without information). Messages are part of the respondent's daily life and are filtered based on their beliefs, attitudes, values, and social environment. Message filtering itself is closely related to the Gatekeeper Model (Pamela and Shoemaker, 2009), as shown in Figure 6:



- **Figure 6. Gatekeeper Model**

As Figure 6 shows of the several streams of information or messages (N1, N2, N3 and N4) that are streamed through the gate, only N3 and N4 pass. Information or messages that pass can be a combination of four messages into two messages as described (N31 and N42), and it can also be understood that N1 and N2 merge into N31 and N42. Thus, it can be concluded that the gatekeeper has two functions in order to disseminate information or messages, namely the filtering function and the information formulation function.

Especially in the organization, the gatekeeper function can be equated with the filtering function. The filtering function in question refers to the recipient who will then become the sender, manipulating the information such that the information will appear more profitable, especially to those who perform the filtering function (Sunarto, 2003). The main determinant of this screening is the number of levels in an organizational structure. The more vertical levels in the organizational hierarchy, the more screening opportunities there are.

Another finding in this study is the strength of the Hypodermic Needle Theory (Wilbur Schram, 1950-1970). This theory holds that media has the ability to captivate, influence, and even control their audiences in ways that have been deeply rooted since the early 20th century. Then, new communication technology in the form of moving pictures (movies), the gramophone, and radio expanded the dissemination of mass media that was previously only controlled by newspapers.

This theoretical approach takes the form of a persuasion technique that has been developed since the First World War, which was also the first war carried out using the media. During this period, the media was used to generate enthusiasm and support for the war, and the British even established a Ministry of Information to produce the necessary propaganda. The Russian Empire, Germany, Italy, and Spain used similar methods of mass per-suasion.

In connection with this study, it was revealed that the information obtained through the media (internet) was believed to be correct by the respondent, as the respondent stated that the health information they sought was obtained through the internet. The respondent then conducted a product search as needed after receiving detailed information via the internet, which was marked with 38% of men from 108 respondents and 47% women from 161 respondents who stated that they searched for health information through the internet.The above again proves that, until now, the ability of the media to anesthetize the minds of the audience still persists. The Hypodermic Needle Theory is a linear communication theory, which suggests that media messages are injected directly into the brains of a passive and homogeneous audience.This theory suggests that closed media texts and audiences are influenced in the same way. The Hypodermic Needle Theory is no longer accepted by media theorists as a valid explanation of media communication and in-fluence.

Therefore, it can be concluded that although the Hypodermic Needle Theory has been abandoned by most media theorists, this theory continues to influence the mainstream discourse on the influence of mass media, which is characterized by respondents' acknowledgment of seeking and buying the product they want as it relates to health information obtained through the internet.

- **Figure 7. The Consumer Buying Process**

Respondents' steps to get products through the purchase process through online purchases or direct purchases at pharmacies or other drug stores are consumer behavior in general as well as the six stages of product purchase (Figure 7)) (Business2community.com, 2022) as follows:

Problem Recognation

In simple terms, before a purchase occurs, consumers first establish a reason to fulfill getting or buying a product as a need to overcome a problem they face as consumers.

Information Search

Once consumers recognize the problems they have, they will start looking for information. They will seek solutions to the problems they have through various means, including the internet.

Evaluation of Alternatives

At this stage, consumers want to make sure they have really done some serious research before buying. Therefore, even if they are sure of what they want to buy, they will still want to compare other options to be sure they are buying the right item.

Purchase Decision

At this stage, the customer has explored many options, understands prices and payment methods, and makes the decision to buy or not. However, it is still possible for the consumer to cancel the purchase.

Purchase

The need has been created, the search is done, and the customer decides to buy. All stages of the buying or conversion process have been met.

Post Purchase Evaluation

The entire process does not end after the purchase has occurred. After the purchase, a customer will enter a period of evaluation: whether he considers the overall process satisfactory or not.

CONCLUSION

Among urban societies, the internet, compared to other media, is the primary source used to search for health information. For the urban community of Makassar City, the average duration of time reported for internet usage was 1-4 hours/week. The use of internet media is higher for female respondents and those with a college graduate education level. After the internet, health information is sought through traditional media, health care profes-sionals, and family and friends or colleagues. The topic of nutrition dominates the search for health information in communication media compared to other health topics. Other health information varies

according to urban community needs, such as health information about medication or adverse events, reproductive health, chronic health problems, and diabetes.

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