

# Knowledge of people in dissemination of environmental health messages Among communities in buton regency southeast sulawesi province, Indonesia

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## Abstract

*The research to determine knowledge of people in environmental health messages among the communities in Southeast Sulawesi, province. The research was to determine the sources of information on environmental issues such as dwelling house, cleaning safe water, proper garbage disposal, and sanitary toilet used to obtain knowledge of environmental health messages among the people in Pasar Wajo district. The result of the study showed a significant difference concerning the receiving knowledge of environmental health from cleaning safe water and garbage disposal, in both sub-district. However, reviving related knowledge of environmental health from the sanitary toilet was the most effective way among sources of environmental health issues. This situation*

*might be explained by the ability of environmental issues, particularly dwelling houses, in both sub-district could increase knowledge of people in the environmental health of the people in ButonRegency generally. Conclusion is formal Leader the most frequent source information taken by the people as a source of knowledge in environmental health. In formal leader was the source of information which the people getting less contact. Informal leader as the source of information wich people getting in contact between social group ( the least contact ) and formal leader ( the superior contact ).*

**Keyword:** Environmental issues, cleaning safe water, garbage disposal, sanitary toilet, dwelling house

## I. Introduction

Indonesia as a developing country has to deal with a multitude of health problems. Malnutrition, maternal, child disease, diarrhea, malaria, measles, acute respiratory infection usually predominate in the public health agenda ( Soekidjo, 2005 ). As a result, the control and prevention of infectious diseases affecting children dominate health programming. The treatment and prevention of diarrhea, malaria, measles, and acute respiratory infections are among the major interventions. Since the interrelations between disease and malnutrition is a critical risk factor in Indonesia as developing countries, breastfeeding, appropriate weaning practices, and dietary increase in important micronutrients such as vitamin A, iodine, and iron can save lives.

Environmental health is now an important and vital force in the new public health movement. A recent development in environmental health and public health has been rapid, fitting within broader shifts of medicine and health policy in Indonesia. With this change, environmental health may be seen to be developing both independently and in interaction with the new public health movement.

Mass media should promote health programs continuously and providing more information to create awareness for people to participate in the health development sector. Health promotion programs can be a

significant part of future cost containment options. In addition, these programs can serve as tools for attracting exceptional individuals to the workplace and developing a co-operative environment where production can flourish, (Anspaugh, 2000).

In Indonesia, environmental health education is part of the national development program as school health services. The program uses the students themselves as role models and motivators for change to promote better health in the school, home, and community. Children from grades 4 to 6 are selected by teachers to serve as “little doctors” according to their leadership potential, willingness to help others, and observance of good personal hygiene.

The little doctors are expected to set a good example by following a healthy lifestyle, observing good personal hygiene, and avoiding behavior that involves health risks. They are expected to participate actively in improving environmental conditions (rubbish disposal), protecting safe water sources and food storage, keeping rooms clean communicating health messages ( on preventing diarrhea, immunization, mosquito control, and so on: monitoring personal hygiene ( growth, eyesight, oral health, scar survey, and illness ( such as infections ), informing teachers about children in need of role in the organization of environmental health sector. The people have initiated to build themselves, work together, consciousness, from time to time, however, there are some hindrances in terms of information gap between top-down



and bottom-up. The people rarely have access to information, and the government has to push the strongest development program without any promotion and communication particularly in the field of health extension as part of communication health to integrate vision and mission of development.

The importance of this study can be viewed from both theoretical and practical levels. Theoretically, this study will contribute to an improved understanding of communication media in the dissemination of environmental health messages especially in the knowledge transfer process of new ideas which was proposed by Rogers (1993). Undoubtedly, it will increase a better understanding of how media sources are taken into consideration to provide some insight into an environmental health issue and will give benefit to the people. Even though this study only involves the environmental health sector in one province, it is believed that it will apply to similar issues relevant to scholars, students, researchers, academic and intellectual discourse, and practitioners in communication and rural development elsewhere. There have been many studies about the exposure of mass media but studies concerning environmental health are rare.

Environmental health is important to both developed and developing countries this dependence on environmental health also reflected in the numerous research and development health programs undertaken by the World Health Organization (WHO) and World Bank, as well as governments of most nations. To maximize the results of health development, the finding of the environmental health field from the research center agency should available and disseminated to the community as many users as possible.

*Buton* Regency is a newly converted town wherein changes in terms of structure and function would inevitably occur. These changes normally happen via a communication process as well as, source media, the form of communication (interpersonal, and group communication) which would generally create a favorable mental set toward change specifically of knowledge in relations with environmental health field.

One of the main problems besetting the town is the incidence of diseases which mostly affect children. Limited resources constrained the government's ability to respond adequately to growing demands for high-quality health services. Health authorities attributed this occurrence to the rapid demographic, epidemiological, and socio-economic development of the country in general. Indonesia has a population of 195 million as of 1994 with a growth rate of 1.6 percent annually and a significant increase in chronic degenerative diseases (Newbrander, 1997). In 2019, the population of Indonesia increase to 258 million (Center of Statistics Agency, 2019). Specifically, the community's continued ignorance on how to maintain a healthy environment such as the use of clean and safe water, living in safe and sanitary dwelling units, proper garbage disposal coupled with the inability to pay for high-

quality services have created a burden for the health sector of the area.

This study, based on the local area of southeast province situation would recommend the government for providing information that is needed by the local community. An undertaking such as this would provide government planners, local government units, and non-government organizations mechanism towards understanding the conditions of the community in using communication strategies for better and improved environmental health practices. Moreover, the research could provide policymakers a broader perspective on the kind of health programs most suitable to communicate with the *Buton* community.

This paper will be presented to analyze the sources of environmental health messages among communities in *Buton* Regency. To obtain whether there is a strong relationship among environmental issues as a healthy dwelling house, sanitary toilet, proper garbage disposal, cleaning safe water to the knowledge of environmental health issue of people.

## II. Statement Of the Problem

Base on the above statement, this study attempted to answer the following questions.

What are the main sources of environmental health issues attended by the people in the *Buton* Regency?

## III. Objective of the Study

In general, the purpose of the study is to determine the knowledge of people in environmental health messages among the people in the *Buton* Regency. Specifically, the study was aimed to determine sources of environmental health issues of the people in the *Buton* Regency.

## IV. Review of Related literature

This chapter presents a review of related literature on the exposure of communication media in the process of transfer of knowledge with a focus on sources mass media, a form of communication used in environmental health issues, especially from the field of development environmental health sector. In addition to reviewing studies related to the effect of mass media in disseminating development issues, the model theory of diffusion - innovation is illustrated. As information sources, mass media are rooted in the field of communication as instruction in transferring knowledge of the learning system. The chapter discusses the review of related literature divided under the following headings: (1) Role of Communication, (2) Communication exposure, (3) Interpersonal communication, (4) Mass communication, (5) Differences between interpersonal communication and mass media channels, (6) Mass communication effects, (7) Communication channels in diffusion - innovation, (8) Communication in Development, Development communication flow, (9) Model of innovation-decision process, (10) Role of innovations in transition, (11) The use of mass media for environmental health, (12) The importance of group communication, (13) Dimensions of environmental health and (14) Conceptual framework.

## Role of Communication

### Communication

Communication is a subject not unique to the field of mass communication. There are many definitions of communication in various fields. Rogers and Shoemaker (1971) defined communication as the process by which messages are transferred from a source to a receiver with a viewpoint of modifying the behavior of receivers. Communication is a process in which participants create and share information to reach a mutual understanding (Rogers, 1993). This definition implies that communication is a process of convergence ( or divergence ) as two or more individuals exchange information to move toward each other ( or a part ) in the meaning that they ascribe to certain events.

Stevens, a behavioral psychologist, defined communication as the discriminatory response of an organism to a stimulus while Laswell described communication by answering the questions: Who Says What In Which Channel To Whom With What Effect? (cited by Tan, 1981).

Schramm (1967) a pioneer in mass communication research, defined communication as the sharing of information, an idea, or an attitude that always requires at least three elements: the source, the message, and the destination.

Moreover, Tan (1981) pointed out the important characteristics of communication:

- 1) Communication as a system is made up of various components (source, message, channel) and behaviors (encoding, decoding, formulating objectives). These components are interrelated that any change in one component will affect the whole system.
- 2) Communication is purposive which means that it is initiated deliberately by a source to achieve some effect (response) in the receiver.
- 3) Communication is a transaction that involves the active participation between the source and the receiver, but receivers often affect sources.
- 4) Communication is subjective which means that the perceptions of the objects in the environment whereby the encoding and decoding of messages are all influenced by culture.

Effective communication occurs when the source and the receiver have similar characteristics and interests. This principle is called homophily which means that individuals who interact are similar in certain attributes such as beliefs, values, education, social status, and the like (Rogers and Shoemaker, 1971). The communication of ideas is likely to have greater effects in terms of knowledge gain, attitude formation and change, and overt behavior change (Rogers, 1993). The most effective change agents are those that are most like the average client except for technical competence. Attention to feedback reaction from the audience is most important in the continued success of a communication (Rogers, 1962).

Communication is an essential vehicle for change. Change occurs as a result of new ideas diffused through

the social system and this process consists of invention, Diffusion, and consequences. The invention is the process of creating and developing new ideas. Diffusion is the process by which these new ideas are communicated to the members of the social system and consequences are the changes that occur as a result of adoption or rejection of the innovation. The use or the rejection of a new idea affects social change. Social change is the process by which alteration occurs in the structure and function of a social system (Rogers and Shoemaker, 1971). Although communication and social change are not synonymous, communication is an important element throughout the social change process. The concept of social change includes the communication process as well as the societal and individual consequences that result from the adoption or rejection of an innovation. Thus, communication is crucial to the adoption of innovation by a community.

One of the most distinctive problems in the communication of innovations is that the source is usually quite heterophilous to the receiver. The gap between source and receiver widens when they do not share a common culture. Time is another factor necessary from the introduction of a new idea to its widespread adoption such that one of the goals of diffusion-innovation research is to shorten the time lag: In this essence, communication research uses the diffusion process of human interaction to communicate a new idea to one or several other persons through the use of different channels. The elements of diffusion closely correspond to the source – message – channel - receiver - Feedback (S-M-C-R- F ) model of Berlo (1960).

### The Use of Mass Media for Environmental Health

Many scholars have pointed out the importance of mass media in the adoption process (Fritsch, 1999). The mass media have also been found to be very effective in the early stages of the adoption process (Rogers, 1983). Following that, other sources of information become increasingly more important, especially at the evaluation stage, where judgment is made as to adopt the new practice or otherwise revert to the former.

Another hypothesis that has the greatest impact on social structure is that advanced research by Lewin, K. (1992). He hypothesized that the media provide people in developing countries with the capacity to conceive of the situation and ways of life quite different from those which they have experienced. This, he consider, is an important state of social change. Until man can conceive something different from their existing situation, it is difficult for them to be sufficiently motivated for change.

Larson ( 2001 ) reported that mass media seem to be relatively popular sources of information in the health care system. Respondents rated four mass media ( television, newspaper radio, and magazines and four other channel pamphlets, family and friends, health professional, and representatives of government agencies ) according to the extent that they relied on each medium of mass media as main sources for health information to them.

Concerning the desire of the Indonesian government for the active participation of the people in the

development process, the need for the people to be motivated to work together for the achievement of national and individual goals, mere information as found in the Indonesian mass media is not enough. The broadcast media, for example, lack the spontaneous interaction of the government and community; they lack the permanency of the printed world, ( which again can be a problem if the majority of the population is illiterate); they tend towards centralization and do not adapt themselves easily to local conditions and preoccupations; they require a technical infrastructure and suitable maintenance.

Based on 23 studies, (Learner and Schramm, 1987) and others concluded that one of the reasons why a high degree of integration is so important is that the effectiveness of the new media is becoming more and more to be seen as dependent upon the amount of learning activity that is going on at the receiving end. They further stated that it is not productive to think of the media as pouring content into viewers and listeners; a better way is to think of them as stimulating learning activity on the part of the viewers and listeners. The point is that, except in the rarest instances, the media can not be counted on to do an adequate educational job by themselves, and hardly anywhere in the world are they being asked to do this. Planned guidance for the receivers, practice opportunities, and opportunity the teaching system of which the media are a part.

The most serious obstacle to integrated utilization in Indonesia lies in the fact that different institutions control the various elements which must be combined. Hartono (1992) points out, the ingredients of comprehensive multi-media educational programs for adults are usually controlled by separate agencies. The task of relating these different media in a learning system is a formidable one as most community education organizers have learned.

Like in Indonesia, where the elements are under the aegis of the central government, there can be problems. Some informational functions are entrusted under the National Information Body, the use of media for educational health, under the Ministry of Information and health educational proper being under the Ministry of Education. It can be safely said that as in other areas of environmental health, "Integrated service health center for People " PUSKESMAS" sometimes inhibits full and free interaction. Some educational broadcasters do not fully trust the educators in their area, just as some educators still regard educational television as an upstart movement, lacking true substance.

Nevertheless, the fact that many different agencies have worked together for common purposes, is the best proof that it can be done. Extension health, which is concerned with people, has a particular contribution to make, where the clientele feel generally lost, ignorant, and isolated. There is a world of output, while the educator seeks to conceive the totality of man in society. To make the media as tools not of the producers but of man, to permit active participation of the receiver in the exploration and utilization of the medium of

communication, remains peculiarly the challenge of the health educator.

To promote the health sector through mass media effectively, we need to be able to understand, analyze, and ultimately influence social health policy, ( Bunton. Macdonald 1992 ). Social policy should have substantial input to health promotion. Understanding this social and political policy context, and health promotion place in it, not only provides important self - awareness but allows a better understanding of the constraints on and possibilities for developing health public policy.

### V. Method

The selection of respondents in both the sub-districts population reached 8,436 with their reliability level at ( 10%). From the above computation, a total of 99 respondents were taken from the two sub-district of *Pasar Wajo and Siotapina*.

Personal interviews with the use of a structured questionnaire were conducted to gather information from respondents. The study covered households with requirements sex, 20-64 years, and qualified senior high school graduates Respondents were selected through systematic random sampling.

The study hypothesized as the following assumptions :

1. It is significantly different between the activity of healthy dwelling house by knowledge of environmental health messages of people obtained from formal leader
2. It is a significant difference between the activity of sanitary toilet by knowledge of environmental health messages of people obtained from informal leader
3. It is a significant difference between activity cleaning safe water by knowledge of environmental health messages of people obtained from social groups.

The hypothesis was analyzed by statistical analysis system (SAS) version 6.12. ANOVA analysis to discuss whether there is significant variation among the information the knowledge of environmental health issues ( dependent variable ) of the respondent in both areas of study. And afterward, the significant variation was analyzed by duncan's multiple range test (DMRT). The significant level of this study to test that variable is 0.05.

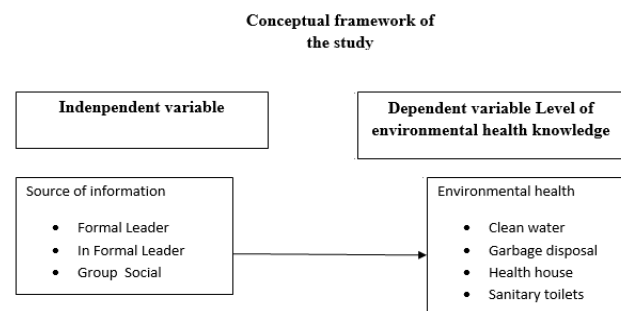


Figure 1. conceptual framework showing, linkages sources of information with environmental health issues.

**A. Model statistical test of mass communication to the knowledge of environmental health issues.**

**Table 1. Analysis of variance mass communication**

| Sources of variance    | DF | Sum of squares | Mean value | F value | Pr>F   |
|------------------------|----|----------------|------------|---------|--------|
| Formal Leader          | 2  | 2799,250       | 1399.6250  | 71.35   | 0.01   |
| DIST (district)        | 1  | 0,68           | 0,68       | 0.03    | 0.8568 |
| ENHAM                  | 3  | 0.0            | 0.0        | 0.0     | 1.0    |
| Social Group (DIST)    | 3  | 0.0            | 0.0        | 0.0     | 1.0    |
| Informal Leader (DIST) | 2  | 1118.583       | 559.292    | 28.50   | 0.01   |
| Error                  | 12 | 235.50         | 19.6250    |         |        |
| Corrected Total        | 23 | 4154.00        |            |         |        |

\*Significant at 1%

R – Square = 0,943308

CV = 26.84855

On table shows that the Sources of information variable is significant, then this variable was analyzed. By Duncan, multiple range test (DMRT) The sources of information can be assumed as having the linear model as follows: .....(1)

$$Y_{ijkm} = M + I_i + D_j + E_{klj} + I E_{tk} (j) + E_m (ijk)$$

Where M mean average  $M_i$  is Sources Information,  $i = 1,2,3$ , ( Formal Leader, Informal Leader, Social Groups)

$D_j$  is District,  $j = 1,2$  ( Pasar Wajo and Siotapina)

(  $E_{klj}$  ) is Environmental Health messages ( ENHAM ) within District,  $K = 1,2,3,4$

(Clean Safe water, proper Garbage Disposal, Dwelling Unit House, sanitary Toilet)

For all  $j$ .

$E_m ( ijk )$  is random error,  $m = 1,2,3$ , all  $i,j,k$ .

By using Statistic Analytical System ( SAS ) Software to calculate the ANOVA the result is shown in table 1. The assumption additive modal of (1) Was the giving the R – Square of 0.943308 with Coefficient of the variant ( CV ) 26.84855. This means that the assumption of the additive modal is correct later, the media variable was significantly different. The Duncan multiple range tests show the result on the table. 2 The result of the duncan’s multiple range test as follow :

**Table 2. Duncan’s multiple range test for mass communication to the knowledge of environmental health messages of respondents in both sub-district**

| Sources of Information | Means    |
|------------------------|----------|
| Formal Leader          | 31.125 A |
| Informal Leader        | 13.000 B |
| Social Group           | 5.375 C  |

\*Means with the same letter were not significantly different at the 5% level.

On table 2 shows that there was a significant difference between the formal leader, informal leader, and social group to the source of environmental issues for people to receive environmental health issue. The formal leader was the most superior followed by the informal leader and social groups. This indicates that among the source of information, a Formal leader is the most successful medium.

**VI. Discussion**

Based on a review from the previous study, it was hypothesized that there are significant differences between source information to the knowledge of environmental health of respondents both sub- district table 2 reveals that there was a substantial significant difference among source information with knowledge of environmental health messages of respondent both sub-district. That, the hypothesis was accepted the result suggested that the respondent who getting information from formal leader would more aware for the environmental health messages that people when just contact to the informal leader or simply to communicate with social groups. The result of this study is supported by rogers (1995) on “diffusion and innovation” which stated, that television is more effective in spreading knowledge of innovations. The modern health communication campaign uses a variety of approaches to deliver health messages to their targeted audiences including multiply media, in conjunction with the community-based and interpersonal methods of message delivery and promotion of knowledge, attitudes, or and change. A similar study from Atkin and Arkin (1990) that awareness and attitude changes can be affected by health communication, including various aspects of a person's health-related beliefs, such as the perception of risk probabilities and acquisition of knowledge related to problem-solving. Herianto (1997) conducted a study in Malaysia stated that people who are intensively exposed to the media will achieve more knowledge, a positive attitude, and also beat implementation.

The references postulated, that the mass media has an immediate and powerful effect to contribute just only for the knowledge of the audience to the community, (rogers 1995). Mass media such as radio tv, and newspaper can not directly influence attitudes and behavior, the feedback of mass media is not directly perceived quickly by audiences. Interpersonal channels (e.g., formal leader, informal leader, family, friends, community, influential) are more effective at changing attitudes, behavior toward innovations and eventually getting people to adopt them. Personal contact is even more important to adoption when

the innovation is complicated to use or when its benefits are not immediately apparent.

This result in compliance with the reality that, more effective formal leader to disseminate new idea in terms of environmental health knowledge to the people. A particularly formal leader is the most effective way to receive environmental health messages. The informal leader was a source of information that people getting in the deal with between informal leader (the least frequent) and formal leader (the most frequent).

### VII. Conclusions

From the result of the study, the following conclusions as follows:

A formal leader is the most frequent source of information taken by the people as a source of knowledge in environmental health. In formal leader was the source of information which the people getting less contact. Informal leader as the source of information wich people getting in contact between social group ( the least contact ) and formal leader ( the superior contact ).

### VIII. Acknowledgment

The author wishes to express his appreciation and sincere gratitude to the editor and Chief of SSRG – IJCMS who helps me in support of the improvement of my article.

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