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# Kyai Vs Internet and Media The Influence of Media and the Internet in Health Material Learning in Traditional Islamic Boarding Schools (TIBSs) in West Java, Indonesia

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## ***Kyai Vs Internet and Media***

### **The Influence of Media and the Internet in Health Material Learning in Traditional Islamic Boarding Schools (TIBSs) in West Java, Indonesia**

#### **Abstract**

Information technology affects the views and behavior of users and their environment. In the early decades, Traditional Islamic Boarding School (TIBSs) prohibited the use of communication and information technology. TIBSs experienced a shift to be increasingly open to the media and the internet. A strict prohibition on the use of media in Islamic boarding schools influences their insights about their health problems. To ensure the influence of media and internet on students' life in TIBS, this research was conducted aiming at explaining the use level of media and internet by students in seeking health information, and the influence of differences in policies in the use of media and information technology on the behavior of clean and healthy students. The research method used a field survey with the study population were TIBS in one city and two regencies in West Java. The multi-stage sampling technique determined five Islamic boarding schools from the three selected areas with 243 people as respondents. Data processing was conducted by using correlation analysis and group's difference testing based on media policies in TIBSs studied with differences in the clean and healthy behavior of students. The results of the research indicated that two TIBSs had very strict media policies in using media, compared to the other three, which were more lenient. The majority of students answered that the source of health information was Kyai (Pesantren's Leader), but there was a significant gap between the delivered information and their needs. Furthermore, the differences in Kyai's policies towards the use of media and gadgets have led to differences in the average volume of health information and procedures for the clean living of students.

**Keywords:** *Salafiyah* boarding schools, media policies, internet, health information, health communication

## INTRODUCTION

The development of society and communication technology has led educational institutions with a closed and religion-based teaching system such as Indonesian Traditional Islamic Boarding Schools (TIBs) or in the Indonesian education system called *Pesantren*, which is opening up to the outside world. TIBs known as a place to maintain the purity of curriculum by closing the meeting on modern education have shifted *Salafiyah* education to modern learning. This type of Islamic boarding school is called a modern Islamic boarding schools (MIBSs). Even, according to Ritchey & Muchtar (2014) and Muhammad (2012), modern Islamic boarding schools have openness to general sciences.

The managers often say they are not afraid of adopting western thinking as long as it is beneficial for them. Some MIBSs have tried to fill the curriculum and study the health problems. Although this is still limited to what is given by teachers, Islamic boarding schools convey the matter related to maintaining the environment's cleanliness by incorporating religious values and character into the subject matter, and *santri* (students) agree if the teachers give the task to make the work in the form of pictures related to environmental issues (Sudjak, Asiyah, 2018).

Likewise, with the media, the leaders (*Kyai* in Indonesian education system) of Islamic boarding schools began to implement an open policy on media and information technology by building supporting devices to access information and provide media for students. Opened Islamic boarding schools provide internet networks and allow students to use cell phones on certain schedules. Therefore, they are used to using social media, browsing something on Google, and even writing on blog, (Islami.com, 2017; Rachman, 2018). The results of interview with students, on an empty schedule

every day, they use gadget or cell phone or go to a computer laboratory provided for public schools in the same foundation to open their social media and other activities. In addition, opened Islamic boarding schools also allow students to read newspapers or watch television at certain hours. Although there are no rules that allow them to use media, students at a certain level experience media exposure.

Bajari et. al., (2014) explain that the lack of health knowledge and information was related to awareness of the use of media as a source of information. Community who have closed relations with media are more familiar with and easier to obtain health information such as healthy living behavior, baby care, breastfeeding, and treatment through mass media such as TV, radio, newspapers and internet. Furthermore, Efendi (2017) explains that media use behavior will be related to broad insights, high knowledge, and healthier behavior. Additionally, Uittenhout (2012) and Ahadzadeh and Sharif (2017), states that the behavior of seeking good health information through media at least helps a good understanding of health. This happens because media have supernatural powers because of allowing its audience to see and learn about places that they have never visited and know people who have never met (Paul et al., 2013). Eze (Aja, S. N & Eze, 2016 and Eze, n.d.) explains that media are very effective in teaching and learning generally on Christian Religious Knowledge (CRK) models. Furthermore, it is also explained that the mass media had gradually brought into community into new cultural patterns and begin to determine the cultural mindset and people's behavior (Paul et al., 2013; Canny, 2015).

The role of media is common complementary, but it is easier to teach audiences because it is able to entertain and be considered honest and informative. It means, media as a learning resource will be effective if it is not independent of curriculum objectives, (Joanna Canny, 2015). The pattern of mass media used by students are

simply “complementary” and not so influential for their lives. Media is not as a source of reference and knowledge that is relevant to their discipline, but rather as a “pleasure” (Mulkan, Syafirah, Gumilar, 2013).

Entering the information technology era, some boarding schools have been open to the presence of the internet, although most have refused. They provide facilities and infrastructure so that students have access. As it is known in previous research the internet has more capabilities than conventional media, even the internet is a bridge for the media (mass) to reach users, (Morris & Ogan Christine, 1996; Ohiagu, 2011). The internet provides more benefits and provides positive values, (Yilmaz & Orhan, 2010; Joorabochi, Hj. Hassan, & Osman, 2013). Then, the internet provides users to open social media, build networks and utilize those relationships for various things, (Strasburger, Jordan, & Donnerstein, 2010; Uittenhout, 2012). In addition, the internet provides learning materials through browsing and googling facilities, (Sumintono, Wibowo, Mislana, & Tiawa, 2012; Yilmaz & Orhan, 2010). So that with an open policy towards the internet by boarding school leaders, students become familiar with chat and grouping through WhatsApp or Line. Some of them have tried to use the internet to get learning materials when there is an assignment in Islamic boarding schools.

However, the population of Islamic boarding schools that uses closed models and classical learning is still quite large. The model of traditional Islamic education in TIBSs, still strict the rules to maintain the teaching purity of Islamic boarding schools from outside influences (Supriatna & Ratnaningsih, 2017; Maghrifatul Arifah, 2018). Students are prohibited from making contact with the outside world and using mass media and internet (Wahyudin, 2013). In TIBSs education, its model is known as

*Salafiyah* with *Kyai* as a boarding school's leader who forbids students from associating with media. The position of the Leader (*Kyai*) in *Salafiyah* (TIBSs) is the determinant and guardian of the existence of Islamic boarding schools because they are a charismatic figure, a role model of students, an administrator, and a representative of society (Ibrahim, 2014).

The existence of various kinds of regulations relating to the use of media in TIBSs has caused communication fears in which students feel themselves being watched by the existence of rules that can put them in a guilty position, if they are known to violate these rules (Maulita, Rahardjo, Sunarto, 2013). The prohibition on the use of such media, in relation to other prohibitions such as female students are not permitted to interact with male students, the imposition of curfews to go outside in TIBSs environment, and the rules to close the genitals area.

TIBSs as traditional educational institutions have had a negative stigma since long time ago. Andayani (2005) said that TIBSs are place which has higher for transmission of some diseases. The population density in almost every TIBSs are very high, where every room with 15m width is occupied up to 15 people. According to Kiptiyah (2005), this is due to environmental health which is not supported by conducive, healthy, and comfortable building facilities to study and students residences to stay such as unhealthy study room, bathroom and sanitation facilities, waste management, and so on.

An unhealthy environment, low knowledge of students, and a culture of healthy living behavior that has not yet been formed have generated them being easily exposed to skin diseases and others (Rofieq, 2008). There is high morbidity rate in students, especially in certain skin diseases including Scabies. There are some reports mentioned that 59.24% of students in TIBS will suffer from scabies disease (Andayani, 2005).

One of the reasons of the poor condition of *students* and TIBS's environment is related to low health literacy and limited availability of health information sources. Changing poor health condition requires information or media sources that can reach the understanding and comprehension of the society in TIBS. The information sources about procedures for maintaining health, nutrition, and sanitation affairs only come from teachers and friends (Pranata, Budisuari, Hamdi, & Faizin, 2013). The *students* are not enriched with adequate health information sources. They do not have sufficient media references and information sources to get health information to care for themselves (Zakiyah & Setyawati, 2016).

The bad condition of *students* and environment of TIBS are related to low health literacy due to the limitations of health information sources. Media has a role in shaping literacy about clean and healthy behavior. Several studies have shown that mass media have demonstrated a role for healthy living behaviors (Flora, Maibach, & Maccoby, 1989). Some studies state that awareness of the disease is influenced by the use of television, newspapers and drug advertisements. Media functions to change knowledge, attitudes and healthy behaviors (Catalán-matamoros, 2011; Flay, Don, & Schlegel, 1980; Free et al., 2010; Strasburger, Jordan, & Donnerstein, 2010). Furthermore, communities that are close to the media are more familiar with and easier to obtain health information such as healthy behavior, baby care, breastfeeding, and treatment where mass media such as television, radio, newspapers and the internet play a role in it (Bajari, Sri, and Setiawan, 2014).

The presence of internet has opened up an alternative search for public health information. Research in America explains that the use of tablets increases awareness of health. In 2015, approximately 62% of smart phone owners in the United States

used their smart phones to find information about a health condition. About 72% of internet users have looked online for health information within the past year. This includes searches related to serious conditions, general health information, and minor health problems (Community Preventive Services Task Force, 2018). Therefore, the internet has the potential to establish health education and health promotion that helps educators and health professionals disseminate health programs (Lotrean, Ailioaiei, & Stan, 2016; Uittenhout, 2012).

Information Searching Theory states that the behavior of information searching arises because of the needs felt by users of information in various stages. To meet these needs, users demand formal or informal information sources (Kundu, 2017). The Theory of Planned Behavior according to Azjen in Berry (2007) tries to connect health trust directly with behavior. Healthy behavior depends on three things, namely attitudes toward behavior, subjective norms (including norms and social pressure), and perceived behavioral control (self-efficacy) (Berry, 2007). The role of media and internet, if using these two theories, lies in providing information resources to reduce uncertainty and satisfaction of information. Therefore, it can be assumed that if users have different levels of exposure and satisfaction of information to the media, they will have different levels of awareness and knowledge about health. The role of media and internet, as in Media Determinism Theory (Dafoe, 2015; Goguen, 2004) and Selective Media Theory, is very strong when joining the user's internal conditions (Bobok, 2016; Merakou, 2012; Messing & Westwood, 2014; Weeks, Lane, Kim, Lee, & Kwak, 2017). Therefore, when these two theories are used to explain the environment of TIBSs with strict rules about media and with rules that are quite open to the media, it can be concluded that the media are the dominant determinant differences in knowledge and awareness about health and changes in healthy behavior of students.



When they feel a problem with their health, TIBSs that are open to students will use the media and internet well. As a result, knowledge about health is formed. Whereas the TIBSs are closed, these needs are not met and knowledge about their health is lower.

Based on field observations, there are two policy models for the implementation of TIBS's education, namely opened and closed including the use of media and information technology in TIBS's environment. Some TIBSs prohibit the purity of education and are open to produce graduates who have a diversity of knowledge. Based on these two conditions, this research seeks to explain the influence of policy differences on the use behavior of media and the clean behavior of *students*.

Therefore, this research emerges the following research questions:

- 1) What is the use level of media (newspapers, radio, and TV) and internet by students in an effort to discover health information?
- 2) Is there any gap between trusts in information provided by *Kyai* with the level of health information conformity with the needs of students?
- 3) What is the difference between the policies on the use of media and internet by *Kyai* of TIBSs that lead to differences of clean and healthy behavior of students?

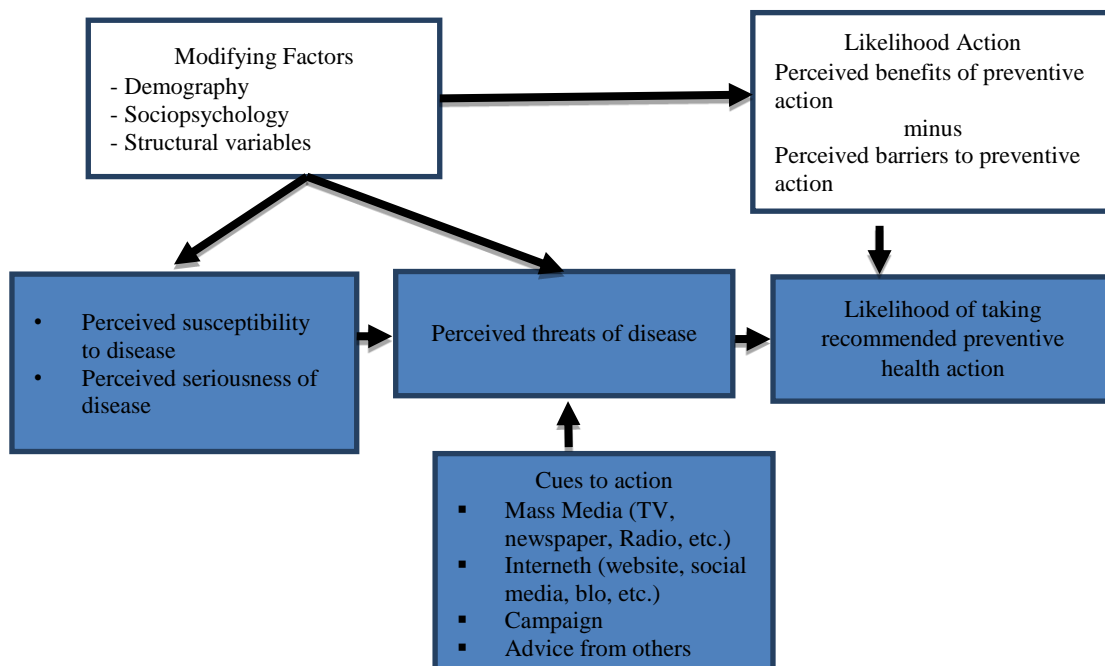
## **MATERIALS AND METHODS**

This research attempted to explain the behavior of students in using media with the rules applied in TIBS to know the discipline level of students and compare the trust level of students and the source of information between *Kyai* and media they use. In an effort to answer these problems, this research was designed using survey methods

to explain the description of relationships between variables through hypothesis testing (Singarimbun & Effendi, 1989; Rakhmat, 2017; Bajari, 2015).

The population in this research was all *Salaḥiyah* boarding schools (TIBS) in Bandung City, Karawang Regency, and Sukabumi Regency, West Java. Sample determination was conducted using a simple random technique. The selected boarding schools were Putra Annihayah and Nihayatul Amal in Karawang (Urban TIBS), Madinatul U'lum in Bandung (Urban TIBS), and Darun Nadwa Islamic boarding school and Riyadusalaf Islamic boarding school in Sukabumi (Rural TIBS). The sampling technique used is disproportional stratified sampling. The number of students chosen from each TIBSs was 50 people. Therefore, the overall samples were 250 students.

In this research, a hypothesis testing conducted stated that there was a relationship between variables. Therefore, the limitations, indicators, and measurements of research variable must be clear. The aspects observed were the framework of Health Believe Theory and Theory of Planned Behavior which were elaborated by the role of media through Uses and Gratification Theory and Media Determinism. The conceptualization of theoretical approach can be seen in the Figure 1.



**Figure 1. Conceptual Framework for Research on the Influence of Media and Internet on Awareness of Clean and Healthy Life for *Santri***

**Source: Research, 2108**

In the effort of obtaining clear boundaries and facilitating measurement of research variables, variable definitions are carried out. The variables that were observed in this research consisted of media and internet presence, and the role of *Kyai* on the volume of information and governance of clean and healthy living in TIBSs. Measuring the presence of media used frequency dimension, intensity of media usage, media content to be considered, time of use, and choice of media used. Meanwhile, the internet presence in addition to frequency, content, time of use, and choice is the amount of social media accounts. Then, the measurement of the role of clerics used the dimensions of need perception for messages and perceptions of the content suitability of health messages presented by *Kyai*. Variable Y about the management of clean and healthy life and the volume of health information used a measurement model of a Clean and Healthy Lifestyle from the Ministry of Health of the Republic of

Indonesia (Kemenkes, 2017). Clean living behavior refers to four dimensions of measurement with 16 questions in the research instrument according to Ajzen (Dotzauer, 2017; Sutton, 2002). The four dimensions include the problem of healthy nutrition and food fulfillment, environmental health, healthy lifestyle, understanding of functions, and services of health institutions

The data analysis used descriptive statistical analysis and inferential statistical analysis. Inferential statistical analysis was used to measure the attachment of several variables used to find out the relation or difference of several groups' average (Singarimbun & Effendi, 1989). The statistical test used rank Spearman (Spearman  $r$ ) where the testing criteria were to reject the null hypothesis if the  $r$  value of calculation results was greater or equal to the value of  $r$  in the Critical Price Table at a certain level. In this research, the real level used was  $p = 0.05$  or a confidence level of 95% (Siegel, 1990). After knowing the correlation between X and Y variables, then they were elaborated by linear regression test to determine the strength of the joint or singular influence of X on Y variables.

In addition, a comparison test of observation group was also conducted. In this case, TIBSs were grouped based on the categories of opened and closed TIBS to communication technology (internet). This test was conducted by t-test of two independent groups, with a significance level of  $p = 0.05$ .

## **RESULTS**

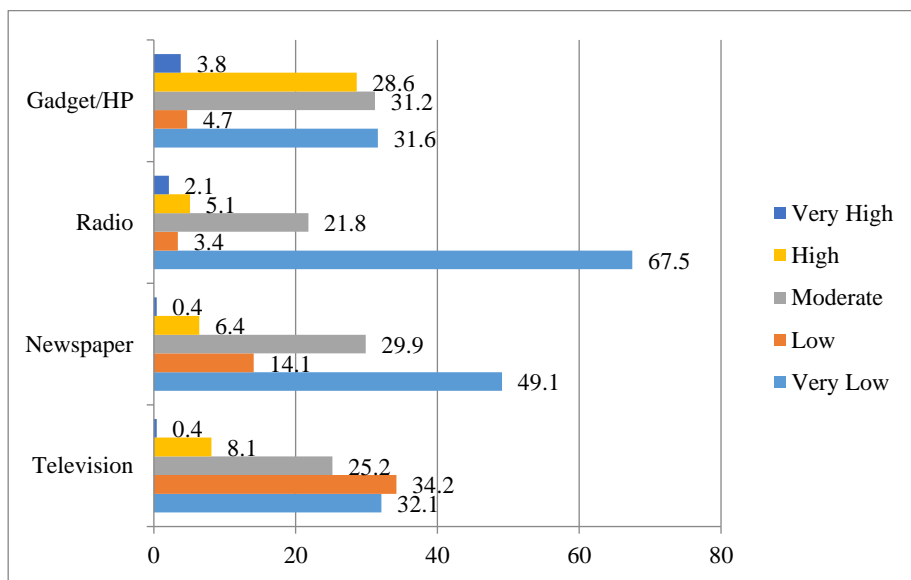
Data collection was conducted through the distribution of questionnaires in three areas with a high population of Islamic boarding schools, namely Bandung City, Karawang Regency, and Sukabumi Regency. The selected *Salafiyah* boarding schools in each district were Niayatul Amal and Annihiyah from Karawang Regency,

Madinatul U'lum (MUB) from Bandung City, and Darun Nadwa and Riyadusalaf from Sukabumi Regency.

The selected respondents to fill out questionnaires were 250 people. However, after being examined for completeness of their answers, only 234 people had filled in completely.

***The Use of Media (Newspaper, Radio, and TV) and Cell Phones (Internet) by Students in Islamic Boarding Schools Environment***

Figure 2 presents data on the use of media such as newspapers, radios, televisions, and gadgets or cell phones by students while in Islamic boarding school's environment. The comparison results of all media used by students from the aspects of time, intensity, and searching for the contents of health message (information) appeared that students were very limited in using the media. Most of percentage of media exposure to students was in moderate, low, and very low category.



**Figure 2. The Use of Media in Islamic Boarding Schools**

Radio has a very low use trend compared to other media. This can be seen from the percentage in the very low category in the use of media by students, which is

67.5%. Meanwhile, newspapers were 49.1%, television 32.1%, and gadgets and cell phones 31.6%. When compared to the use of media in the high and very high categories, the results of the use of internet through gadget or the use of gadget itself were better than other media. The results of data processing show that the use of gadget was higher than the other three media. From the data processed, only 31.60% of students had a very low intensity of internet use. Most of them had low to very high use categories. If it was combined, 32.4% of students who were studied had high and very high use categories.

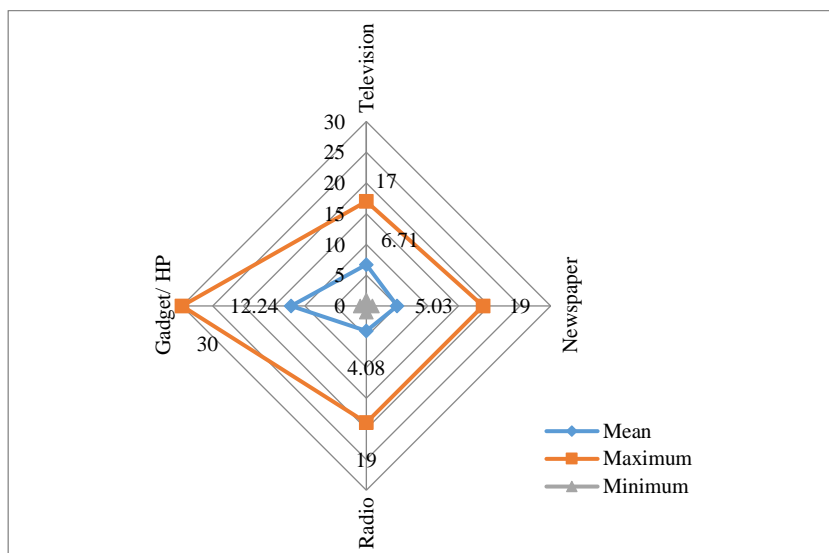
If the data presentation was processed based on the average of media use, the results appeared as presented in Figure 3. Televisions had an average score of 6.71 from a maximum score of 17, newspapers had an average score of 5.03 from a maximum score of 19, the average score of radio was 4.08 from a maximum score of 19, and cell phones or gadgets had an average score of 12.24 from a maximum score of 30. Of all the media measured, television and cell phones or gadgets had the best average score of four media use.

If the data on the use of internet and gadgets of students were explored further, the results of research would be obtained as in Table 1. Madinatul U'lum Islamic boarding school in Bandung City had a strict policy (prohibited) using a cell phone (gadget) or laptop. This was mentioned by 41 students from 42 students who became respondents to this research. Darun Nadwa Islamic boarding school in Sukabumui Regency had a fairly strict policy. In the use of gadget, 55.56% of students said that they had little opportunity to use gadgets, some of them said it was not possible to use gadget. Meanwhile, the other three boarding schools, namely Niyatul Amal, Anihyah, and Riyadusalaf had a loose to open policy around 66.67% to 100% of students got moderate to very high permission to use gadget.

**Table 1. The Opportunity of Using Gadgets in Islamic Boarding Schools based on *Santri*'s Opinion**

No	Categories	Madinatul 'Ulum Bandung	Darun Nadwa Sukabumi	Niayatul Amal Karawang	Anihayah Karawang	Riyadusalaf Sukabumi	Total	%
1	No chance	41	24	0	2	4	71	30.34
2	Little	0	1	0	4	12	17	7.26
3	Moderate	0	10	3	12	12	37	15.81
4	Large	1	3	39	17	10	70	29.91
5	Very large	0	7	8	14	10	39	16.67
	<b>Total</b>	<b>42</b>	<b>45</b>	<b>50</b>	<b>49</b>	<b>48</b>	<b>234</b>	<b>100.00</b>

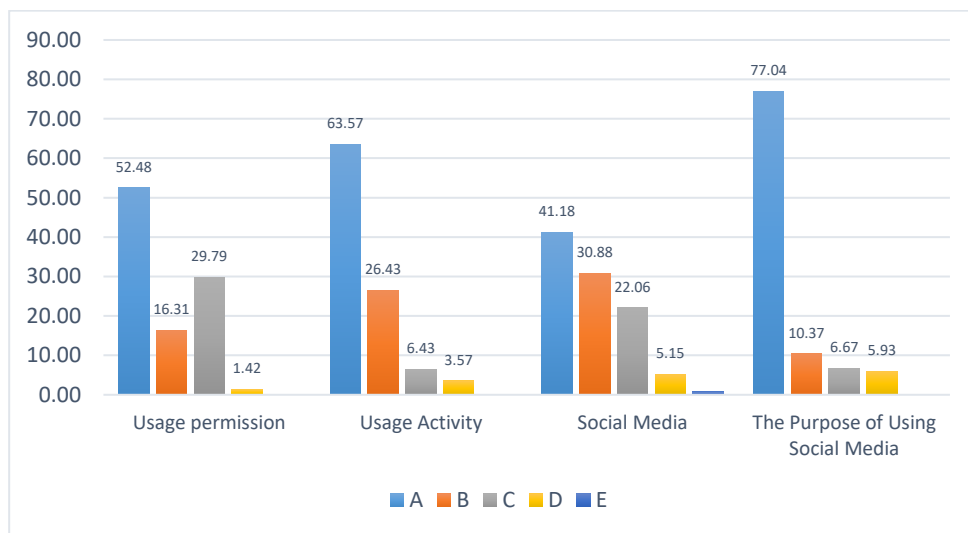
Figure 3 presents the activities of internet use by students either through their owned cell phones and desktops or PCs provided by Islamic boarding schools. Data were obtained from three Islamic boarding schools that gave permission to use internet and cell phones in Islamic boarding schools. A total of 147 students from those three Islamic boarding schools were observed. According to students, those three Islamic boarding schools gave loose permission to use internet where 52.48% of students said that the permission to use internet was 24 hours a day. Furthermore, 16.31% said that the schedule was valid at certain hours every day, 29.79% of those hours only applied on Saturdays or Sundays, and 1.42% of them explained that boarding schools actually did not give permission.



**Figure 3. The Average Score of Media Use in Islamic Boarding Schools**

Students said that when opening the internet via cell phone or desktop, they conducted various activities such as opening social media, browsing, and blogging. In Figure 4, it appears that 63.57% of them only did one activity, then 26.43% of them did two activities, 6.43% of them did three activities, and 3.57% of them did four to more activities. Of all the conducted activities, opening social media was the most chosen by students. When they used social media, there were categorized into five types of users, namely 41.18% students used one social media, 30.88% students used two social media, 22.06% students used three social media, 5.15% students used four social media and 0.47% students used five social media. When the question was continued with the aim at using social media, they were also categorized into four types of users, namely to find out new friends, greet friends, discover information about friends, chat in groups/jokes/group assignments, and find out new information about school assignments. Most students (77.04%) only had one goal, 10.37% students had two goals, 6.67% students had three goals, and 5.93% students had four goals.





**Figure 4. The Utilization of Internet Networks and the Use of Social Media by Santri**

***The Accuracy and Conformity of Health Information from Teacher based on Students' Opinion***

Students obtained health information from various sources. *Kyai* is the main source of students in studying health based on a religious perspective. The implementation was by believing in the teaching of *hadith* which mention cleanliness of part of faith, courtesy or procedure for maintaining cleanliness and purity through ablution, procedure for self-cleansing from unclean and knowing the types of unclean (filth) that cancel ablution, and courtesy or procedure for entering the bathroom, setting a mandatory bath, and regular bathing.

The measurement results of health information accuracy are presented in Table 2. The accuracy of health information was measured by the level of confidence owned by students about health, especially from the point of view of religious teachings. The results showed that the majority of students answered the information source they used were very appropriate 47.9%, appropriate 33.8%, and moderate 11.1%.

**Table 2. The Accuracy of Health Information based on Some Sources in  
according to *Santri***

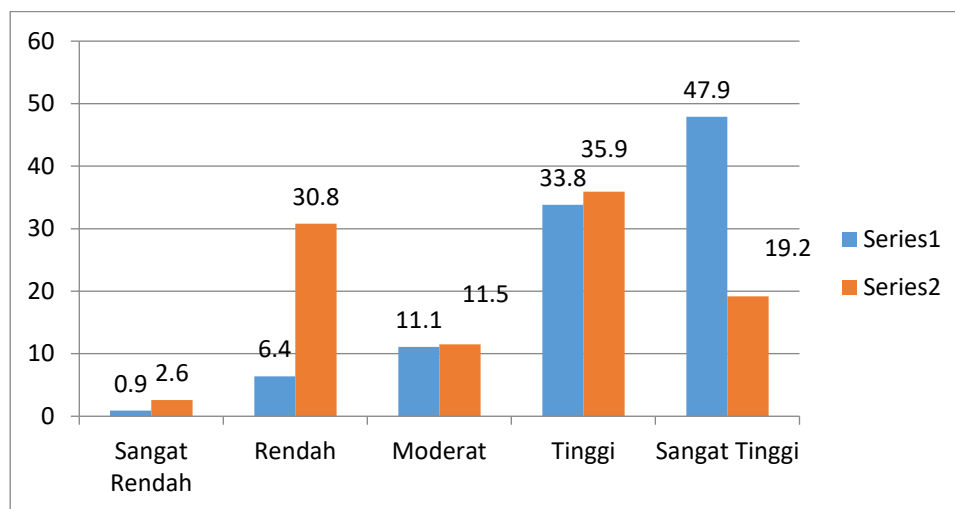
No	Categories	Frequency	%
1	Not very appropriate	2	0.9
2	Not appropriate	15	6.4
3	Moderate	26	11.1
4	Appropriate	79	33.8
5	Very appropriate	112	47.9
	Total	234	100.0

The next analysis is the level of information conformity with students needs in making a clean and healthy life. The results of data processing can be seen in Table 3. Students had a positive perception of health information conformity they received. Most students mentioned that information that was received from teachers, media, and gadgets had a high degree of conformity with daily needs (35.90%). However, it is also interesting to note that 30.80% of students felt that the information received was of a lack of conformity.

**Table 3. The Conformity of Health Information with the Behavior of Healthy  
Life of *Santri***

No	Categories	Frequency	%
1	Very low	6	2.6
2	Low	72	30.8
3	Moderate	27	11.5
4	High	84	35.9
5	Very high	45	19.2
	Total	234	100.0

Figure 5 compares the value of accuracy with the conformity of health information received by students. There was still a gap between the value of accuracy and conformity, especially in the low and very high categories. For example, 6.4% students said that the value of accuracy was low, but 30.80% students said that the value of conformity is high. Likewise, the score in the category was very high. The results show that the value of information accuracy was stated by 47.90% of the total students, but the very high value of conformity was only delivered by 19.20% of the total students.



**Figure 5. The Comparison of Dimensions of Health Information Accuracy and Conformity in Clean and Healthy Life Behavior of *Santri***

The data show a situation where the presented information from the source in content or substance was considered to be the right content. However, if it is associated with their needs, it is not in accordance with what they need. However, after being analyzed correlatively using the correlation test (Table 4), it was found that both two data had a significant relationship. This means that the presented information presented from source was considered correct and precisely correlates with their needs for that information.

**Table. 4. The Value of Health Information Accuracy and Conformity**

	<i>Accuracy</i>	<i>Conformity</i>
<i>Accuracy</i>	1.000	
<i>Conformity</i>	0.521	1.000

234 sample size

± .128	critical value .05 (two-tail)
± .168	critical value .01 (two-tail)

***The Policy Differences on the Use of Media by Islamic Boarding Schools’ Leaders and the Behavior Differences in Healthy Life of Students***

Entering the Islamic boarding school’s environment under the study (five boarding schools), it can be concluded at a glance that there were significant differences in the attitudes and behavior of Islamic boarding school’s members in accordance with procedures and life policies of their Islamic boarding schools. Riyadusalaf Islamic boarding school from Sukabumi Regency and Niayatul Amal and Annihayah from Karawang Regency had changed or shifted characteristic of Islamic boarding schools in the vision and management of education. They still taught yellow

books (*Salafiyah* boarding schools), but their environmental management of boarding schools and learning was very open to changes in the outside world. They had good Islamic boarding school's infrastructure, complete instructional technology and information, and openness of *Kyai* in using new technology (instructional) in teaching the yellow books and applying classical or conventional methods.

On the other hand, Darun Nadwa Islamic boarding school from Sukabumi Regency and Madinatul U'lum Islamic boarding school from Bandung City had the characteristics of pure *Salafiyah* boarding school. The educational process of male and female students still used traditional education. These two boarding schools were really closed to information and communication technology. *Kyai* forbade students from knowing and using mass media, similarly for information technology such as smart phones, android, or other gadgets. *Kyai* did not allow the use of these technologies, unless they returned to the village, every student was permitted to use gadgets or cell phones.

The comparison of these qualitative data emerged two classifications of Islamic boarding schools based on the policy of using internet-based media and communication and information technology. First, Islamic boarding schools were open with the presence of technology and tried to build infrastructure properly and completely. Second, Islamic boarding schools strictly prohibited the use of media, including internet networks or gadget. In Islamic boarding schools which were included in both classifications, *Kyai* assumed that technology had an adverse impact on the growth of students and technology greatly disrupted the time and concentration of students in studying the religious knowledge.

This research obtained four test results generated by comparing statistically through the differences of average groups between opened Islamic boarding schools and closed Islamic boarding schools to information technology, on the aspects of information volume received, the procedures for clean and healthy life, and perceptions of health information accuracy and conformity. Based on the results of the test, those Islamic boarding schools did not have a significant difference of average on the dimensions of procedures for clean and healthy life and perceptions about the health information accuracy. The results of comparison test of two groups used different units of analysis, Group 1 with 147 respondents and Group 2 with 87 respondents, and generated two different averages on the score of procedures for clean and healthy living in Islamic boarding schools. The t-test for the two groups was not balanced, indicating that the difference in the average of two groups was not significant, where the coefficient t was 0.495 and the significance value was  $p = 0.62$ .

Likewise, the results of testing two unbalanced groups on the variables of perceived conformity of healthy and clean life information received from various sources between the two groups based on the openness to media and information-communication technology. The average difference between the two groups, after being tested using the t-test, shows that the average difference between two groups were not significant, where the coefficient  $t = -0.282$  and  $p = 0.7782$ .

Meanwhile, the test results differed significantly in a dimension of knowledge or volume of health information received by students and the information conformity on clean and healthy life with their needs. Based on the results of statistical test with the t-test, those two Islamic boarding school's groups were differentiated based on the openness information that had significant average differences. The test results were t-test = 4.865 and significant  $p = 0.001$ . Likewise, the differences in perceptions about

the information conformity with their needs indicated that the results of t-test obtained t-test of 4.398 and significant  $p = 0.01$ .

The test results with t-test were analyzed more deeply by testing the correlation between variables using the Correlation Spearman  $r$  test. This was conducted by considering the fact that students were secretly seeking various ways to access and use conventional and convergent media, even though *Kyai* or Islamic boarding school's leaders made strict rules.

Table 5 presents the correlation matrix of TV, newspapers, radio, internet, and the role of *Kyai* with the information volume and procedures for healthy living. The results show that the use of TV ( $r = 0.178$ ), newspapers ( $r = 0.202$ ), and internet ( $0.204$ ) correlated with the procedures for healthy behavior of students in Islamic boarding schools. In addition, the role of *Kyai* was still big enough to regulate the healthy life of students, where there was a correlation between the role of *Kyai* and procedures for healthy living of students ( $r = 0.219$ ).

**Table 5. The Correlation Matrix of Media and Internet Use with Clean and Healthy Living Variables of *Santri***

Correlation between Variables	TV	Newspaper	Radio	Internet or Social Media	<i>Kyai</i> or Ustaz	Information Volume	Procedures for Healthy Living
TV	1.000						
Newspaper	.636	1.000					
Radio	.349	.414	1.000				
Internet or Social media	.560	.637	.374	1.000			
<i>Kyai</i> or Ustaz	.042	-.023	.019	-.081	1.000		
Information Volume	-.130	-.096	-.079	-.087	.171	1.000	
Procedures for Healthy Living	.178	.202	.075	.204	.219	.171	1.000

234 sample size

± .128	critical value .05 (two-tail)
± .168	critical value .01 (two-tail)

Table 6 presents the analysis results of the influence of the joint use of media and internet (social media) and the role of *Kyai* in the procedures for healthy life of students. This analysis was conducted to follow up in depth from the results of correlation analysis results between variables and summarized in table 4. The test results show that the three variables X had an influence on the clean and healthy behavior of students (variable Y) with  $F = 6.73$  and  $p = 3.90E-05$ . However, if it is viewed partially or separately, the significant influence was only given by the role of *Kyai* ( $t = 3.684$  and  $p = 0.0003$ ).

**Table 6. The Summary of Regression Analysis Results of Media and Internet Use and the Role of *Kyai* towards Procedures for Clean and Healthy Living of *Santri***

Regression Analysis						
	R <sup>2</sup>	0.105				
	Adjusted R <sup>2</sup>	0.090	n	234		
	R	0.324	k	4		
	Std. Error	2.843	Dep. Var.	Y		
<i>Source</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>		
Regression	217.5027	4	54.3757	6.73		
Residual	1,850.9973	229	8.0830			
Total	2,068.5000	233				
Regression output					confidence interval	
<i>variables</i>	<i>coefficients</i>	<i>std. error</i>	<i>t (df=229)</i>	<i>p-value</i>	<i>95% lower</i>	<i>95% upper</i>
Intercept	23.0331	1.1585	19.881	8.94E-52	20.7504	25.3159
X1	0.0154	0.0574	0.268	.7892	-0.0977	0.1285
X2	0.0695	0.0631	1.102	.2716	-0.0548	0.1939
X3	0.0539	0.0309	1.745	.0823	-0.0070	0.1147
X4	0.1412	0.0383	3.684	.0003	0.0657	0.2168



## DISCUSSION

The results show that the use of media and internet through gadgets (cell phones) or PCs by students in terms of time, intensity, and searching for health message content (information) were not too high. The frequency of media exposure to students lied in the moderate to very low. Among the media studied, radio was the lowest media use compared to TV, newspapers, and internet (gadgets). This was related to the management policy of Islamic boarding schools, which prohibited the use of media while studying in Islamic boarding schools. The results of interviews with leaders of Islamic boarding school show that communication and media technology would interfere with the concentration of students in learning religion and memorizing *Alqur'an* and *Hadiths*, which were adequate heavy accompanied by other practices that required full concentration. They believed more and prioritized the *Kyai*-students' relationship compared to media, students, and *Kyai*. The simplest Islamic boarding school only consisted of *Kyai* and students (Rahardjo, 1988). Therefore, the teaching method of *Salafiyah* boarding schools was more face to face directly through *sorogan* and *balaghan* (Dhofier, 2015).

However, Islamic boarding schools tried to build openness to the changing times. In addition to studying the religious knowledge, they adopted general and modern subjects, (Suradi, 2018). They developed a curriculum that was equipped with *takhashush* Arabic and English language support (Hasan, 2015; Rifa, 2017). Islamic boarding schools included 30% religious education and 70% general knowledge. However, there are also Islamic boarding schools that included the opposite style, namely 70% religion and the remaining 30% general subjects. According to Haidar (Hasan, 2015), the characteristics of this shift were also characterized by (1) shifting

methods from *sorogan* and *wetonan* method to classical method. Sorogan can be defined as a teaching methods where students offer material they want to learn and then get guidance individually or specifically. *Wetonan* is a one-way teaching process in which the *Kyai* or teacher reads the book, translates and explains, while the students listen and record the material presented; (2) contents of material that begin with adapting new materials in addition to maintaining the yellow book study; and (3) management from the single leadership of *Kyai* to democratizing collective leadership.

The closure of Islamic boarding schools had an adverse impact on Islamic boarding schools. General knowledge including health information was difficult to obtain, so Islamic boarding schools were frequently considered not aware of the health importance. The environment of Islamic boarding schools was dirty and the development of skin diseases was a stigma attached to Islamic boarding school's environment. Islamic education like Islamic boarding schools required change and modernization, and openness in learning methods (Hasan, 2015).

The results of research show that knowledge about health was mostly obtained from *Teacher* and *Kyai*, and few from media and health agents. Furthermore, the results of relationship elaboration between the role of media and *Kyai* on clean and healthy behavior, the data show that although the media had an influence on the procedures for clean and healthy living, the regression coefficient and correlation of *Kyai* variables were greater and significantly single. The role of *Kyai* was very strong even though students had used media and internet. As Zulfiqar (2015)said, many Islamic boarding schools relied on *Kyai* as their main source of learning. *Kyai* had a prominent position in Islamic boarding schools because he will determine the learning model and the success of learning.

In teaching health, *Kyai and Teachers* refers to the wealth of Al-Qur'an and *hadiths*, which discusses the law and procedures for maintaining cleanliness. However, in practice, it is not easy. Seeing the big role of *Kyai* and teacher in instilling a healthy and clean life and the difficulty of media and health workers entering Islamic boarding school's environment, the approach to build clean and healthy behavior is the responsibility of *Kyai*. They become a principle and legal source in maintaining a clean and healthy life, even though medical and medication services continue to be run by health workers, and media are a source of increasing health literacy in Islamic boarding schools.

On the other hand, *Kyai* can also act as an information gatekeeper. He has received information from outside and then filtered for the benefit of students. The contents of media are selected before being given to other parties. In Selective Openness Theory, Littlejohn and Foss, (2011) discusses the relativity of media influence, where media (mass) did not directly affect audiences, but they were mediated by other variables. Therefore, media were a supporting reason. In this case, the mediating factors include the selective process, group process, and group norms as well as leadership opinion (Severin & Tankard, 1991).

In this case, *Kyai* provides himself with knowledge outside of religious knowledge such as health. He is considered to have credibility in the health sector. Thus, the credibility of *Kyai* in Islamic boarding school's environment is not only related to the religion knowledge. He is considered capable of teaching health. Some *Kyai* are even known to have the ability to treat and cure physical and psychological ailments through their prayers. This treatment is known as supernatural or *rukayah* healing services among Islamic boarding schools.

Referring to the results, it can be assumed that Islamic boarding schools had experienced some shifts. However, the position of *Kyai* remained irreplaceable, especially in *Salafiyah* boarding schools. This strategic role placed position as a gatekeeper in the communication chain (Wulandari, 2012). Whatever information and material for preaching and learning, *Kyai* still held full authority in controlling information. In the context of gatekeeper, someone worked to eliminate, summarize, and add back the contents of news or information so that the delivered message could be presented better (Vivian, 2008). In communication for social change, the role of gatekeeper was also as a change agent. The gatekeepers were the decision makers who were letting the whole social system. They were having its own influence like social, cultural, ethical, and political on the environment, (Shoemaker & Vos, 2009). In the diffusion of innovation, change agents played key roles in the evaluation and trial stages (Severin & Tankard, 1991).

In addition, the presence of media and internet or information technology in Islamic boarding schools had a significant impact even though it was low. Of the five boarding schools observed, three Islamic boarding schools had openness to media. They had computer laboratories with internet networks, used LCDs for learning, subscribed to newspapers, provided radios and newspapers, and allowed students to use mobile phones on certain days. Meanwhile, the other two Islamic boarding schools had policies that did not allow the use of media and cell phones. This research tried to compare differences in policies or regulations against media use and differences in health behavior of students in various sub-variables. The results show that students studying in Islamic boarding schools with regulations allowing the use of media had a good average number in terms of owned health information volume, the average

perception of health information conformity with the reality they experienced daily, and the average score of needs to their health information.

This difference provided an assumption that media had a good role in shaping health information literacy and increasing their need for health information. The statement of Heinich (1996), Aggarwal and Prasad(1998) and Thambu and Rahman (2017)is in line with the views that media are capable in supporting the improvement of learning or instructional outcomes. The most common use of media in an instructional situation is for supplemental support of the instructor in the class room to enhance learning (Heinich, 1996). Thambu and Rahman (2017) state that media like a theater forum, push the students to be actively involved in the process of writing the script, and the dialogue, and be involved in the forum, acting and expressing ideas. Furthermore, teachers should be innovative enough and ready to venture out to experiment so as to improve teaching and enhance learning (Agarwal, R. & Prasad, 1998). Meanwhile, convergent media such as the internet provide good learning acceleration. Zhang (2009), states that blogs are not only a journal tool that used for communication but they are teaching strategy in and of themselves that can be used in a variety of pedagogical methods.

Thus, the awareness of Islamic boarding school's management in general is needed to utilize media. Furthermore, cell phones are the most preferred media to use by looking at a higher average number than other media. Based on these results, cellular media has a good opportunity to provide useful features or applications to build the health information literacy of students. For example, the presence of android and web-based health applications can provide a variety of health information and become a means of discussion and question-answer with *Kyai* and health workers

around health and religious issues and various links to authoritative and useful health pages for student's users.

Further thinking that needs to be considered is the rapid use of technology and information and the media opening up students to accept various other issues that are not constructive such as radicalism (terrorism). Islamic boarding schools are supposed to be a source of radicalism teachings. It is because the openness of students in obtaining sources of information is a phenomenon related to the presence of internet, social media, and internet-based on-line media that is difficult to control. If it is seen at the results of research that shows the influence of technology presence, it is time for the institutions of Islamic boarding schools and the government to consider efforts to develop internet-based communication and information technology as a media that fights the radicalism notions or teachings.

## **CONCLUSION**

Most students stated that they did not use the three mass media in fulfilling health information needs. Students obtained more information about health from teachers or *ustadz* who teach in their Islamic Boarding Schools. The use of internet was included in Islamic boarding school's environment even though the number of students was balanced with those who did not use it. The internet had a better opportunity to be used as a learning support tool for the three conventional media because some Islamic boarding schools had allowed the use of gadgets or cell phones.

Two of five Islamic boarding schools had strict policies (not allowed) in using cell phones (gadgets) and laptops in daily life in Islamic boarding schools. Meanwhile, the other three Islamic boarding schools gave the opportunity or did not forbid the students from using internet media.

The opened and closed media use policies yielded differences in the use of TV, newspapers, and internet. The difference of those two policies resulted in differences in the average knowledge or volume of health information received by students and the perception of information conformity on clean and healthy living with their needs. Whereas, if it was tested by correlation between media exposure (all media) and information volume, procedures for clean living, and the used information conformity, the results show that the use of TV, newspapers, and internet correlated with healthy procedures or behavior of students while in Islamic boarding school.

Furthermore, most of students answered that the sources of information they used had provided very appropriate information about clean and healthy life, in which *Kyai* is someone who has high credibility or trustworthiness in teaching clean and healthy living behaviors. Most students mentioned that information about health received so far had a high conformity with everyday problems. They felt that the health information obtained from *teacher* or *Kyai* was not correct (right), it was also useful for knowledge and guidance on how to maintain health while in Islamic boarding schools.

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