# COMMUNITY KNOWLEDGE AND ATTITUDE ABOUT THE USE OF MEDICAL DEVICE AND HOUSEHOLD HEALTH PRODUCT IN BOGOR, WEST JAVA

**Anisa[1], Anhari Achadi[2]**

[1]Masters Program in Public Health, Faculty of Public Health, Universitas Indonesia
[2]Department of Health Policy Administration, Faculty of Public Health,
Universitas Indonesia

## ABSTRACT

**Background:** The improper use of medical device and household health product can lead to inaccurate measurement, poisoning, allergy, irritation, and unattainable usage goal. This study was aimed to determine community knowledge and attitude about the use of medical device and household health product in Bogor, West Java.

**Subjects and Method:** A cross-sectional study was conducted in Megamendung sub-district, Bogor Regency, West Java, from March to April 2019. The study subjects were 350 households. The dependent variable was the knowledge and attitude. The independent variable was demography characteristics. The data were collected by questionnaire. Data were analyzed using Pearson correlation.

**Results:** 312 of 350 households completed the questionnaire (81.9%). 51.3% strongly agreed to check the circular number of medical device and household health product before use. There was a positive correlation between knowledge and attitude score in the use of medical device and household health product (r= 0.36; p= 0.001). The knowledge scores increased with age under 26 years and higher education. The attitude scores increased with age above 55 years and higher education.

**Conclusion:** Households who have good knowledge show a positive attitude towards the use of medical device and household health product. Certain groups, such as people with low education, should be targeted for a health education program in terms of the appropriate use of medical device and household health product.

**Keywords:** knowledge, attitude, use, home, medical device, household health product

**Correspondence:**
Anisa. Masters Program in Public Health, Faculty of Public Health, Universitas Indonesia. Email: annisa.kurniadi@gmail.com. Mobile: 081310573854.

## BACKGROUND

Medical device is an important part of health services used to assist in the prevention, enforcement of diagnoses, treatment, and recovery of diseases (WHO, 2011). Medical device has a very broad scope, starting from the simplest medical devices with the lowest risk classes, such as bed pan, infusion pole, examination light, and manual hospital bed to complex medical devices with the highest level of risk, such as pacemaker, drug-eluting stent, and automatic external defibrillator (AED) (Ministry of Health, 2018). The use of medical devices is not always carried out in the health facilities, such as hospital, community health center, or doctor's clinic. Several types of medical devices can also be used by the community at home without the assistance of health workers. The examples are sanitary napkin, pregnancy test kit, body thermometer, body scale, and others.

According to its definition, medical device is an instrument, apparatus, machine and/ or implant that do not contain drugs that was used to prevent, diagnose, cure, and alleviate diseases, treat people who are sick, recover human health, and/ or build struc-

tures and improve bodily functions, block fertilization, do disinfection of medical devices, and carry out in vitro testing towards specimens from the human body, and can contain drugs that do not achieve main work on the human body through pharmacological, immunological, or metabolic processes to gain the expected function/ performance (Ministry of Health , 2017). In addition, there is also household health product. It is a tool, material, or a mixture of materials for maintenance and human health care. It intends to be used in households and public facilities.

Medical device is classified into 4 risk classes based on the risks that arise during use, starting from the medical devices with the lowest risk, namely class A such as surgical gloves to the medical devices with the highest risk, namely class D such as pacemaker. Household health product is also classified into 3 risk classes based on the risks that may arise during use, starting from the household health product with the lowest risk, namely class 1 such as cotton to the household health product with the highest risk, namely class 3 such as household pesticides (Ministry of Health, 2016; Ministry of Health, 2017).

The improper use of medical device and household health product can lead to inaccurate measurement, poisoning, allergy, irritation, and unattainable usage goal. The example is the improper use of pregnancy test kit can lead to an error test result (FDA, 2019). Another example is the wrong use of disposable baby diapers. Improper use of disposable baby diapers can be dangerous for the baby. A baby can experience diaper rashes at several points. If it is quite severe, it can affect the characteristic of skin barrier (Felter et al., 2017). This study aimed to analyze the correlation between community knowledge and attitude related to the use of medical device and household health product in Bogor, West Java.

## SUBJECTS AND METHODS

### 1. Study Design
This was an analytic observational study using cross-sectional approach. This study was conducted in Megamendung sub-district, Bogor Regency, West Java, Indonesia, from March to May 2019.

### 2. Population and Sample
There were 312 study subjects selected in this study. The data were collected from the public places (residence, association, and worship place).

### 3. Study Variables
The dependent variables were knowledge and attitude. The independent variable was demographic characteristics of the study subjects.

### 4. Study Instruments
The data were collected by using questionnaires. The questionnaire consisted of three parts. The first part consisted of questions of demographic characteristics of the respondents. The second part contained 10 statements about the respondents' knowledge related to the use of medical device and household health product. The third part contained 8 statements related to attitude towards the use of medical device and household health product.

### 5. Data Analysis
The data were analyzed by using Statistical Package for Social Studies (SPSS) version 23. The descriptive statistic in the form of frequency and percentage distributions were obtained for each characteristic and question related to knowledge and attitude in the use of medical device and household health product. Bivariate analysis was conducted by using independent t tests, ANOVA, and Pearson correlation test.

## RESULTS

The largest percentage was in the age group of 36 to 45 years (32.7%) which was almost

one third of the study respondents. The sample distribution showed a high percentage of male respondents (61.2%) compared to female respondents (38.8%). Most of the respondents of this study were unemployed (65.1%), as shown in table 1.

**Table 1. The characteristics of the community c (n= 312)**

| | Variable | Percentage (%) |
|---|---|---|
| Sex | Male | 61.2 |
| | Female | 38.8 |
| Age | <26 | 10.6 |
| | 26-35 | 27.9 |
| | 36-45 | 32.7 |
| | 46-55 | 25.3 |
| | >55 | 3.5 |
| Level of Education | Primary School | 25.0 |
| | Junior High School | 20.1 |
| | Senior High School | 27.9 |
| | College | 17.0 |
| Employment Status | Employed | 34.9 |
| | Unemployed | 65.1 |

Most of the respondents (66.0%) answered correctly the statement of the type of medical device used at home. However, only 28.8% of the respondents answered correctly the statement of household health product definition. 25.32% of the study subjects did not know the function of the website www.infoalkes.depkes.go.id, while more than half of the respondents (56.73%) knew that medical device could be purchased from online store. When they were asked about the statement that the body thermometer could also be used for the room thermometer, more than three-quarters of the respondents (76.92%) answered correctly.

Most of the respondents (89.74%) knew that baby diapers must be changed immediately after the baby defecated. There were only 8.33% of the respondents who did not know that they had to wash and dry their hands before using contact lenses. When it came to the statement of the sanitary napkin ideally replaced every 4-6 hours, most of the respondents (86.86%) answered correctly. Most of the respondents (90.38%) knew that medical device and household health product must be kept out of reach of children. Almost all of the respondents (90.71%) confirmed that baby bottles to be used were BPA free as shown in table 2.

Table 3 shows that the knowledge of the use of medical device and household health product was 7.04 and the standard deviation was 1.81, with the minimum value by 2 and the maximum value by 10. The average value of knowledge was very high in the respondents with education level up to college (Mean= 8.43; SD= 1.53) compared with the respondents with the education level only up to primary school (Mean= 6.42; SD= 1.40) and statistically significant (p= 0.001).

**Table 2. The knowledge of the respondents of the study about the use of medical device and household health product (n= 312)**

| Question | Answer (%) | |
|---|---|---|
| | True | False |
| Do you know what is meant by medical device? | 66.03 | 33.97 |
| Do you know what is meant by household health product? | 28.85 | 71.15 |
| Do you know the function of the website www.infoalkes.depkes.go.id? | 25.32 | 74.68 |
| Medical device can be purchased from online store. | 56.73 | 43.27 |
| Body thermometer can also be used for room thermometer. | 76.92 | 23.08 |
| Baby diaper should be changed immediately after the baby defecates. | 89.74 | 10.26 |
| Wash and dry hands before using contact lenses. | 91.67 | 8.33 |
| The sanitary napkin should ideally be replaced every 4-6 hours. | 86.86 | 13.14 |
| Keep medical device and household health product out of the reach of children. | 90.38 | 9.62 |
| Make sure the baby bottles you are going to use are BPA free. | 90.71 | 9.29 |

There was a significant difference of the comparison of the average value of knowledge about the use of medical device and household health product on sex and age. The age group <26 years showed a significantly higher mean score of knowledge (Mean= 7.94; SD= 1.14) compared to other age groups.

The average value of knowledge about the use of medical device and household health product in women was much higher (Mean= 7.88; SD= 1.75) than the average value of knowledge in men. 98.08% of the respondents agreed to use medical device and household health product carefully. Almost all of the respondents (94.87%) agreed that they would check the distribution permit number of medical device and household health product before buying it. Most of the respondents (91.32%) agreed that if there were suspicious medical device and household health product, they would seek information through the website www.infoalkes.depkes.go.id.

93.91% of the respondents agreed to use medical device and household health product in accordance with the instructions listed on the package. Almost all of the respondents (94.87%) agreed that they would check the distribution permit number of medical device and household health product before buying it.

**Table 3. The comparison of average values of knowledge (n= 312)**

| | Variable | Mean | SD | p |
|---|---|---|---|---|
| Sex | Male | 6.50 | 1.75 | 0.720 |
| | Female | 7.88 | 1.58 | |
| Age | <26 | 7.94 | 1.14 | 0.012 |
| | 26-35 | 6.63 | 1.94 | |
| | 36-45 | 7.09 | 1.86 | |
| | 46-55 | 7.05 | 1.75 | |
| | >55 | 6.91 | 1.64 | |
| Level of Education | Primary School | 6.42 | 1.40 | 0.001 |
| | Junior High School | 6.63 | 1.66 | |
| | Senior High School | 7.17 | 2.00 | |
| | College | 8.43 | 1.53 | |
| Employment Status | Employed | 7.07 | 1.88 | 0.733 |
| | Unemployed | 6.96 | 1.68 | |

**Table 4. The attitude of the respondents of the study towards the use of medical device and household health product (n= 312)**

| Statement | Strongly Agree (%) | Agree (%) | Disagree (%) | Strongly Disagree (%) | Total Number for Agree (%) | Total Number for Disagree (%) |
|---|---|---|---|---|---|---|
| I will use medical device and household health product carefully. | 65.71 | 32.37 | 0.32 | 1.60 | 98.08 | 1.92 |
| Before buying medical device and health product, I will check the distribution permit number first. | 51.28 | 43.59 | 2.88 | 2.24 | 94.87 | 5.13 |
| If there are suspicious medical devices and household health product, I will seek information through the website www.infoalkes.depkes.go.id. | 39.42 | 51.60 | 1.28 | 7.37 | 91.32 | 8.68 |
| I will use medical device and household health product according to the instructions listed. | 144.87 | 49.04 | 1.92 | 4.17 | 93.91 | 6.09 |
| I will check the expiry of medical device and household health product before using them. | 47.76 | 35.90 | 4.49 | 11.86 | 83.65 | 16.35 |
| I can put medical device and household health product anywhere. | 7.69 | 13.78 | 47.44 | 31.09 | 21.47 | 78.53 |
| I will buy contact lenses from an online shop because the price is cheaper. | 7.69 | 13.46 | 47.76 | 31.09 | 21.15 | 78.85 |
| I can throw the used baby diapers anywhere. | 6.73 | 3.85 | 25.96 | 63.46 | 10.58 | 89.42 |

Most of the respondents (91.32%) agreed that if there were suspicious medical device and household health product, they would seek information through the website www.infoalkes.depkes.go.id. 93.91% of the respondents agreed to use medical device and household health product in accordance with the instructions listed on the package. More than three-quarters of the respondents (83.65%) agreed to check the expiry of medical device and household health product before using them. Almost 78.85% of the respondents did not agree to put medical device and household health product anywhere. More than half of the respondents (78.85%) did not agree to buy contact lenses from online stores because of the low prices. Most of the respondents (89.42%) did not agree with disposing of used baby diapers anywhere as shown in table 4.

Table 5 shows attitude (Mean= 26.34; SD= 3.60) with the minimum value by 13 and the maximum value by 32. The average value of attitude was significantly higher in the female respondents (Mean= 27.36; SD= 3.52) compared to the male respondents (Mean= 25.68; SD= 3.52), but the result was statistically non-significant (p= 0.559).

**Table 5. The comparison of the average value of attitude among different groups (n= 312)**

|  | Variable | Mean | SD | p |
|---|---|---|---|---|
| Sex | Male | 25.68 | 3.51 | 0.559 |
|  | Female | 27.36 | 3.52 |  |
| Age | <26 | 27.53 | 2.74 | 0.064 |
|  | 26-35 | 25.78 | 3.79 |  |
|  | 36-45 | 25.96 | 3.69 |  |
|  | 46-55 | 26.77 | 3.55 |  |
|  | >55 | 27.18 | 2.82 |  |
| Level of Education | Primary School | 24.58 | 3.87 | 0.001 |
|  | Junior High School | 26.19 | 3.35 |  |
|  | Senior High School | 26.83 | 3.35 |  |
|  | College | 28.34 | 2.76 |  |
| Employment Status | Employed | 26.59 | 3.54 | 0.949 |
|  | Unemployed | 25.84 | 3.68 |  |

In the age group <26 years (Mean= 27.53; SD= 2.74), the average value of attitude about the use of medical device and household health product was higher than the respondents in other age groups. The college level (Mean= 28.34; SD= 2.76) had a high value of attitude regarding the use of medical device and household health product. The average value of attitude about the use of medical device and household health product in the respondents who employed (Mean= 26.59; SD= 3.54) was higher than the unemployed respondents (Mean= 25.84; SD= 3.68).

## DISCUSSION

Medical device is an instrument, apparatus, machine and/or implant that do not contain drugs used to prevent, diagnose, cure, and alleviate diseases, treat people who are sick, recover human health, and/or build structures, and improve bodily functions. Besides, household health product is a tool, material, or a mixture of materials for maintenance and human health care. It intends to be used in households and public facilities.

Based on the result of the data analyzed descriptively, the respondents with education level up to college level had a high average value of knowledge on the use of medical device and household health product compared to the respondents with education level only up to primary school; the result was statistically significant. This is in line with the theory of knowledge according to Notoadmodjo that the higher the education level of someone, the better the human capital stocks (knowledge, skills) (Notoatmodjo, 2003). Based on age, the average value of knowledge on the use of medical device and household health product was highest at age <26 years compared to other age ranges. This was not in line with the theory according to Notoadmodjo that as they get older, their knowledge increases (Notoatmodjo, 2003).

The average value of attitude towards the use of medical device and household health product was significantly higher in the respondents with college level compared with other lower levels of education, and in the respondents employed compared with the unemployed respondents. This is in line with the factors affecting attitude towards the object of attitude according to Azwar, namely: personal experience, effect of others that was considered important, effect of culture, mass media, educational and religious

institution, and emotional factors. Based on the theory of planned behavior, attitude is determined by the belief about the consequences of behavior called behavioral beliefs. In addition, attitude is also determined by the evaluation towards the object, namely the person's assessment on the results that appear in a behavior or lead to a positive or negative assessment of the individual on certain behaviors she/ he wants to do (Azwar, 2013).

The respondents who had good knowledge regarding the use of medical device and household health product showed a positive attitude towards the use of medical device and household health product. Certain groups must be targeted for education in terms of the proper use of medical device and household health product, such as people with low levels of education.

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