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## Evaluation of Community Empowerment in Hand Washing Use Soap (CTPS)

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**ABSTRACT:** Behavior Washing your hands with soap (CTPS) using running water can protect yourself and others from infectious diseases. The proportion of good and correct CTPS behavior in Indonesia is still low. Community empowerment is one strategy to improve community behavior in CTPS. The aim of the research is to evaluate the community empowerment program in CTPS. This type of research is descriptive with survey methods. The aspects evaluated include aspects *input*, *proses*, and *output* based on a societal perspective. The population is all managers of facility installation locations, namely 10 units and households who live in Baturraden District. The research sample was all facility installation site managers and 200 heads of households. Data collection techniques through observation and interviews. Observations were carried out on 10 installed facilities. Interviews with facility managers cover aspects of input, process and output from the results of the installation of facilities, while interviews with heads of households relate to the use of facilities. The collected data is then processed and displayed in the form of tables and narratives. Evaluation of community empowerment in CTPS in Baturraden District based on: 1) The input aspect shows that there is no budget and operational officers; 2) The process aspect shows that soap and soap are not available *tissue*/drying rags and the community has not been involved in maintaining/maintaining the facilities; 3) The output aspect shows that facilities that are still functioning well do not meet the requirements. Based on the perspective of the community using CTPS, it shows that most of the facilities are dirty, soap is not available *tissue*/clean rag. Budget limitations and the absence of operational officers have caused CTPS facilities to not function and not meet the requirements, resulting in the community not using the facilities optimally.

**KEYWORDS:** Evaluation, Community Empowerment, CTPS, Baturraden

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### 1. INTRODUCTION

Hands are parts of the human body that are always in contact with dirt and microorganisms. Washing your hands with soap and running water is the best and most effective way to clean both hands (palms, fingers and nails) with soap and running water which aims to clean dirt and reduce the number of germs<sup>1,2</sup>. The habit of washing hands with soap and running water must be practiced continuously so that it has an effective impact on preventing the transmission of diseases such as COVID-19 and others<sup>2,3,4</sup>. According to the CDC (*Centers For Diseases Control and Prevention*), CTPS is able to reduce diarrhea morbidity rates in general by 23-40% and 58% in people who have a weak immune system, reduce gastrointestinal morbidity which affects student absenteeism by 29-57%, and reduce ARI (Respiratory Tract Infection) morbidity rates. Top) by 16-21%<sup>5</sup>.

CTPS behavior with running water has been proven to prevent illness and is the best way to remove germs, avoid disease, and prevent the spread of germs to other people<sup>6</sup>. The practice of washing hands with soap and running water in both developing and developed countries is still a problem. One of the main factors is the lack of facilities for washing hands with soap at home. According to *United Nations Children's Fund* (UNICEF) states that three billion people or 40% of the world's population do not have a place to wash their hands with water and soap at home. Three-quarters of them live in the world's poorest countries and are among the most vulnerable: children and families living in informal settlements, migrant and refugee camps, or in areas of active conflict<sup>7</sup>. According to *Centers For Diseases Control and Prevention* (CDC) states that hand hygiene facilities are lacking even in several public places, such as: 1) Almost half of schools do not have hand washing facilities; 2) 43% of health facilities do not have hand hygiene facilities in care settings. This condition puts teachers, doctors, nurses, patients and all of us at risk<sup>5</sup>.

The results of the 2018 Basic Health Research stated that the proportion of correct hand washing behavior in Indonesia, especially in the age group >10 years, was 49.8%, Central Java Province was 53.57% and Banyumas Regency was 58.03%. This figure for population groups living in rural areas is lower than in urban areas<sup>8</sup>. There is still a low level of good and correct CTPS behavior in Indonesia, the Indonesian Ministry of Health is trying to improve community habits with the STBM (Community Based Total Sanitation) strategy by focusing on five pillars, one of which is the CTPS pillar through community empowerment which aims to change community behavior. The aim of implementing STBM, especially on the CTPS pillar, is to increase

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community behavior in CTPS independently and properly to achieve high public health status which is characterized by a decrease in the number of cases of environmental-based diseases.<sup>9</sup>

By cultivating CTPS properly and correctly, namely using soap and clean, flowing water and ensuring its availability, including maintaining and operating facilities in a sustainable manner, we can strengthen PHBS (Clean and Healthy Living Behavior) efforts as an effort to prevent disease. Although in its implementation there are influencing factors these habits are knowledge, attitudes and actions<sup>10</sup>. To support and maintain the CTPS habit, there are 2 aspects that must be fulfilled, namely the technical/hardware aspect (*hardware*) and non-technical/software (*software*). Technical/hardware aspects include the availability of soap, clean water and hand washing facilities, while non-technical/software aspects include knowledge, motivation and other social factors, especially those related to the use of materials for washing hands.<sup>11</sup> Related to aspects *hardware* and *software* accordingly, the strategy that can be implemented to change community behavior in CTPS properly and correctly is through community empowerment.

Community empowerment is an effort to convey information continuously and sustainably to accompany and help the community to change from not knowing to knowing/awareness (knowledge aspect), from knowing to being willing/desire (attitude aspect) and from wanting/wanting to being able to improve the environment, sanitation and other aspects that can affect the level of public health<sup>12</sup>. Community empowerment in the health sector is an effort to develop the behavior (knowledge, attitudes and actions) of the community so that they are more capable of overcoming the health problems they face<sup>13</sup>.

Community empowerment in CTPS in Baturraden District was carried out by the Environmental Health Department of the Health Polytechnic of the Ministry of Health in Semarang from March to June 2022. Activities were carried out through the installation of facilities as stimulus and counseling to increase knowledge and change CTPS behavior. Installation of facilities equipped with educational media (6 CTPS steps) totaling 10 units in public places including 3 units at Posyandu, 2 units at TPA (Alqur'an Education Park), 1 unit at Shop, 1 unit at Islamic Boarding School and 3 units at mosque. Direct outreach to the community and installation of CTPS posters at several points that can be seen by the public. Facilities for washing hands with soap and running water along with instructions are placed in places general so that people can practice hand hygiene before entering or leaving<sup>11</sup>. People's behavior will lead to healthy living if they are aware, motivated and supported by information as well as facilities and infrastructure<sup>14</sup>. Through the installation of these facilities, it is hoped that it can improve people's habits of using CTPS properly and correctly as an effort to protect themselves and others from disease transmission. To determine the success of these activities, research was carried out to evaluate the community empowerment program in CTPS covering aspects of input, process and output from the community perspective.

## 2. METHOD

This type of research is descriptive with a survey method. The aim of the research is to evaluate the community empowerment program in CTPS in Baturraden District. The aspects evaluated include aspects *input*, *proses*, and *output* based on a societal perspective. The population in this study were all managers of the locations where CTPS facilities were installed, namely 10 units and households living in Baturraden District. The research sample was all facility installation site managers and 200 heads of households using the collection technique *cluster random sampling*. Data collection techniques through observation and interviews using questionnaires. Observations were carried out on 10 installed facilities. Interviews with managers related to the input, process and output aspects of installing facilities, while interviews with heads of households related to the use of facilities. The collected data is then processed and displayed in the form of tables and narratives.

## 3. RESULTS AND DISCUSSION

### Evaluation of Installation of CTPS Facilities

The CTPS habit is one of the government strategies contained in the STBM program which aims to reduce infectious diseases. Semarang Ministry of Health Poltekkes is a vocational higher education institution in the health sector which has the functions of education, research and community service. In order to carry out the Tri Dharma pillars of Higher Education, especially in community service, the Department of Environmental Health has carried out community service activities regarding CTPS in Baturraden District. The aim of the activity is to improve CTPS habits through the installation of facilities and counseling. The level of success in implementing community empowerment can be determined through evaluation which includes input, process, output and outcome aspects<sup>15</sup>. Research evaluating community empowerment programs in CTPS in Baturraden District includes 3 aspects, namely input, process and output from the community perspective.

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Input

**Table 1. Evaluation of Installation of CTPS Facilities Based on Input Aspects in Baturraden District**

No	Variabel	CTPS Facilities	
		n	%
1	Availability of operational budget for CTPS facilities		
	Yes	0	0,0
	No	10	100,0
2	CTPS facility maintenance/operational officer		
	Yes	0	0,0
	No	10	100,0
3	Availability of KIE media (6 CTPS steps)		
	Yes	10	100,0
	No	0	0,0

The evaluation results from the input aspect show that 100% there is no budget, 100% there are no operational officers and 100% the facilities are available with KIE media (6 CTPS steps). The budget is used for maintenance costs as well as for the procurement of soap and *tissue*/clean dry rag. Budget limitations can affect the maintenance and operation of CTPS facilities<sup>16</sup>. Maintenance and operational facilities include the availability of clean water, the faucets working properly, the availability of soap and *tissue*/ rags and report the condition of the facilities to the manager who is responsible for the operation, such as damage to the system, lack of water, soap, *tissue*/rag, the presence of stagnant water, and so on<sup>11</sup>. TRegarding operations and maintenance, it is necessary to have an officer/person who is responsible for its implementation. The absence of officers/people appointed to operate or maintain CTPS facilities results in dirty, unkempt and damaged (not functioning) facilities. A sustainable maintenance system is very important to ensure the use of CTPS for public health<sup>17</sup>.

Media Communication, Education and Information (KIE) 6 CTPS steps installed in every facility. The message conveyed is in the form of a colored picture accompanied by writing to carry out CTPS according to the guidelines, namely implementing 6 steps, including: 1) rubbing the palms with soap; 2) the backs of the palms are rubbed alternately; 3) rub between fingers using soap; 4) wash fingertips thoroughly; 5) rub and rotate the thumb alternately and 6) Place all fingertips on the palm and clean them by rubbing gently with running water. According to WHO regulations, the 6-step CTPS activity lasts 40 to 60 seconds. With the IEC media, the community can implement CTPS according to existing guidelines.

Process

**Table 2. Evaluation of Installation of CTPS Facilities Based on Process Aspects in Baturraden District**

No	Variabel	CTPS facilities	
		n	%
1	There is sufficient clean water available		
	Yes	10	100,0
	No	0	0,0
2	Soap available		
	Yes	1	10,0
	No	9	90,0
3	Clean dry tissue/cloth available		

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	Yes		
	No	0	0,0
		10	100,0
4	CTPS counseling at points/locations		
	Yes	7	70,0
	No	3	30,0
5	Community involvement in maintaining CTPS facilities		
	Yes	0	0,0
	No	10	100,0

The evaluation results from the process aspect show that the CTPS facilities: 100% have sufficient clean water available (physically meet the requirements), 90% are not equipped with soap, 100% are not equipped *tissue*/ rags, 70% of the outreach has been carried out at the installation point and 100% of the community has not been involved in maintaining the facilities. Clean water is a vital requirement in CTPS which functions to rinse hands before and after using soap. Availability of clean water in facilities in sufficient quantities and physically meeting the requirements<sup>11</sup>. Most of the facilities do not have soap (liquid or bar). Soap is used as an ingredient to clean dirt and as a disinfectant to kill microorganisms. Without soap, people's hand washing activities become less effective, because the dirt and microorganisms on their hands are not completely removed. Using water alone to wash hands is not enough to protect people from disease-causing germs on their hands<sup>18</sup>. Using soap for hand washing is very important in killing germs and removing dirt, oil and grease on the palms of the hands<sup>19</sup>. *Tissue* or a clean dry cloth must be available at CTPS facilities to dry hands after hand washing activities. The good and correct CTPS technique is to use soap and clean running water and dry with a clean towel/rag *ortissue*<sup>20</sup>. Thus, the availability of these facilities is really needed so that the CTPS habit can run well, correctly and sustainably<sup>16</sup>.

Education about CTPS by health officers and cadres to the community has been carried out at 10 installation locations. The outreach that has been carried out includes direct (lectures) and using poster media to familiarize CTPS with local regional languages that are easy for the public to understand. Health education is a preventative effort by providing warning messages to the public to always protect/maintain their health, both individuals, families, groups and the wider community<sup>21</sup>. Apart from this, health education activities play a role in supporting the right to health information literacy for individuals and society<sup>22</sup>. Thus, through health education both directly and using media (posters/videos/cheerful pictures) we can increase people's knowledge and understanding to get used to CTPS<sup>23,24,25</sup>.

The absence of community involvement (managers and users) in management, especially in care/maintenance and operations, results in damaged facilities and affects the sustainability of facility use. The community, both managers and users, must have a sense of responsibility for CTPS facilities, especially in care/maintenance and operations, including providing soap and clean *tissue*/rags. CTPS facilities are handed over to the management which then become public facilities, so that operational continuity is the responsibility of the user and manager both physically and functionally by carrying out care/maintenance including providing other facilities periodically and using the facilities in a reasonable manner<sup>26</sup>.

### Output

**Table 3. . Evaluation of Installation of CTPS Facilities Based on Output Aspects in Baturraden District**

No	Variabel	Sarana CTPS	
		n	%
	Condition of CTPS Facilities		
1	Good	6	60,0
	Not Good	4	40,0
	CTPS Facilities Requirements		
2	Good	0	0,0
	Not Good	6	100,0

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The evaluation results on the output aspect show that the condition of the 10 CTPS facilities installed, there are 6 facilities (60.0%) in good condition/still in use, including 3 units at the Posyandu, 1 unit at the shop, 1 unit at the TPA and 1 unit at the Islamic boarding school, while 4 facilities (40.0%) are in a damaged/unused condition including 1 unit at the landfill and 3 units at the mosque. The damage to the facilities was caused by the lack of maintenance from the management and the lack of awareness of visitors/community to maintain and care for the CTPS facilities. Providing facilities is not only about the fulfillment and existence of the facilities, but to ensure the sustainability of these facilities, a maintenance process needs to be carried out<sup>11</sup>. The success of washing hands with soap is not only supported by hand washing behavior, but also by the condition of the facilities to maintain the continuity of hand washing activities<sup>27</sup>. Based on this, maintenance is not only carried out by the management, but requires participation and cooperation from the community as users. The public/visitors must play a role in maintaining the hand washing facilities that have been provided<sup>28</sup>.

Observation results on the 6 CTPS facilities that are still in use show that 6 facilities (100%) do not meet the requirements. Facilities that do not meet the requirements indicate that soap and dryer are not available (*tissue* or a clean rag). Limited access to clean water, soap and *tissue*/clean rags are the reason people do not implement hand washing guidelines according to WHO<sup>29</sup>. Apart from this, the unavailability of complete facilities can influence behavior and hinder people from getting used to CTPS<sup>30</sup>. The main elements in providing hand washing facilities are the availability of clean, running water that meets physical requirements, there is soap as a disinfectant to kill disease-causing microorganisms and *tissue*/a clean washcloth as a hand dryer<sup>30,11</sup>. Soap functions to clean dirt as well as microorganisms (bacteria and viruses) contained in the dirt. Rub your hands with soap until foamy, then rinse with running water, the dirt on your hands will disappear<sup>31</sup>. Hands that are clean and free from germs must be dried with *tissue*/clean rag. Not available *tissue*/clean rags, people's habit of using clothes to dry can cause their hands to become contaminated with germs again. Thus, through the use of CTPS facilities that meet the requirements, hand washing activities can protect the public from germs that cause disease. The research results show that CTPS is more effective at killing bacteria and destroying viruses from a person's hands than just using water. CTPS can kill as many as 73% of germs and is more effective at killing disease germs than using *hand sanitizer* which only kills 60% of germs<sup>32</sup>.

### Evaluation of the Utilization of CTPS Facilities from a community perspective

No	Variable	n	%
1	See the CTPS facility		
	Yes	156	78,0
	No	44	22,0
2	Location to see CTPS facilities		
	Shops		
	Integrated		
	Mosque	134	67,0
	TPQ	87	43,5
	Boarding School	35	17,5
3	Utilization of CTPS Facilities		
	Yes	97	48,5
	No	103	51,5

The results of interviews with 200 heads of households regarding the use of CTPS facilities at 10 installation points showed that 156 respondents (78.0%) saw CTPS facilities. Placing CTPS facilities that are visible and easily accessible is one of the success factors in the CTPS program. Compliance with CTPS is influenced, among other things, by the placement or installation of appropriate facilities<sup>33</sup>. The highest number of CTPS locations seen by respondents was in shopping areas, namely 134 respondents (67.0%). Shops are one of the locations visited by many people to carry out buying and selling activities. The strategy for installing CTPS facilities at this location is quite effective. Visitors can implement CTPS directly at the location after carrying out activities.

Respondents who utilized CTPS facilities were 97 respondents (48.5%). Many factors cause people not to take advantage of existing CTPS. The research results show that there are 2 factors that hinder the community from using CTPS, namely: 1) internal

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factors including behavior (knowledge, attitudes and actions) and 2) external factors including the availability of CTPS facilities<sup>34</sup>. Other research states that a good level of knowledge and attitude can encourage someone to want to take action which of course must be supported by the availability of facilities to facilitate behavior for CTPS<sup>35</sup>. Knowledge and attitudes are not enough for behavior to occur, because facilities are needed that enable/support this behavior to occur<sup>10</sup>.

Table 6. Evaluation of the Use of CTPS Facilities from a Community Perspective

No	CTPS facilities	n	%
<b>Condition of Facilities</b>			
Works fine			
1	Yes	63	61,1
	No	34	38,9
Clean			
2	Yes	31	36,0
	No	66	64,0
<b>Availability of supporting facilities</b>			
Sufficient & flowing			
water is available			
1	Yes	97	100,0
	No	0	0,0
Soap available			
2	Yes	14	13,6
	No	83	86,4
Clean tissue/rags are			
3	available		
	Yes	0	0,0
	No	97	100,0

Based on the perspective of the community using CTPS, it shows that 1) Condition of facilities: there are CTPS facilities that are not functioning well (38.9%) and are dirty (64.0%). This condition can cause people not to utilize existing CTPS facilities. The availability of CTPS facilities in good/functional condition can increase people's habits of washing their hands properly<sup>11</sup>; 2) Availability of supporting facilities for CTPS: most of the facilities do not provide soap (86.4%) and are not available tissue/clean rag (100%). This condition can cause people not to implement CTPS correctly. Soap as a medium for cleaning hands and killing germs, meanwhile tissue/cloth as a medium for drying hands to ensure cleanliness and freedom from germs. Hands are re-contaminated by germs if you don't dry your hands using a clean tissue/rag<sup>35</sup>.

## 4. CONCLUSIONS AND SUGGESTIONS

### Conclusion

Evaluation of community empowerment in CTPS in Baturraden District based on 1) The input aspect shows that there is no budget and operational officers; 2) The process aspect shows that soap and soap are not available tissue/drying rags and the community has not been involved in maintaining/maintaining the facilities; 3) The output aspect shows that facilities that are still functioning well do not meet the requirements. Based on the perspective of the community using CTPS, it shows that most of the facilities are dirty, soap is not available and is not available tissue/clean rag.

### Suggestion

The need for maintenance and procurement of supporting facilities such as soap and tissue/clean rags for the sustainability of the CTPS program in Baturraden District using a budget sourced from community self-help.

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