The Integration of Environmental Health Engineering Training Scheme for Healthcare Workers

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Abstract. The indoor air quality of healthcare facilities has a very important role to play in improving health and protecting patients, visitors, and staff. This activity aims to determine the importance of air and water quality in the health centre, so that the health centre’s quality in providing services is increased. A participatory approach is used optimally in this activity. This counselling and training activity is specifically for Sarang 2 Health Centre cadres. This activity was held in March 2022 with the Sarang 2 Health Centre as a partner and participant. The Sarang 2 Health Centre conducted regular air quality standard checks. In a year, 2 inspections were carried out by the staff by checking and routinely cleaning the air conditioner. Officers checked and tested water quality annually by testing samples conducted at the LABKESDA. In waste management, waste is divided into medical and non-medical waste which have their own handling. Outreach activities related to health techniques in the environment to increase knowledge about good air and water quality at the Sarang 2 Health Centre were conducted.

Keywords: engineering, healthcare, worker

1 Introduction

1.1 Situation analysis

The indoor air quality of healthcare facilities has a very important role to play in improving health and protecting patients as well as visitors and staff. Good air quality is characterized by a low level of pollutants that could irritate, discomfort, or harm the occupants’ health [7]. Indoor air pollution can be a problem if it occurs in health facilities because there is risk of contracting infectious diseases. Likewise, patients or staff working in hospitals can spread nosocomial infections, which are called Healthcare Associated Infections (HAIs), if airborne pathogens cannot be reduced and eliminated properly [8]. Workers in the medical field might get sick building syndrome in facilities with poor air quality.

The quality of health services at the health centre and efforts to accelerate the success of UHC will be difficult to do if the basic infrastructure and cleanliness of the facilities are inadequate [10]. Groundwater, river water, rainwater, springs and other water sources are still used in areas that have not yet received clean water from local water company. The problem that arises is the quality of groundwater and rivers are often found that these do not

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meet the requirements for healthy drinking water, whereas the water is used for daily needs such as washing and bathing [11]. Water, sanitation, and water sanitation and hygiene (WASH) services in health centres are a risk factor in the ability of health facilities to provide safe and quality care [12]. Water sanitation and cleanliness are crucial for reducing infection rates in hospitals and other healthcare facilities.

1.a.1. Partner Problem

Based on the analysis that has been done, the service partner face the following problem:

<table>
<thead>
<tr>
<th>No</th>
<th>Problem</th>
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<tbody>
<tr>
<td>1</td>
<td>The difficulty to get clean water in Rembang Regency is because the facility area is close to the beach causing the water to be polluted with sea water and it becomes salty.</td>
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</tbody>
</table>

In general, the purpose and focus of this activity is to find out the importance of air and water quality in health facilities, especially in health centre to improve the quality of health centre in providing services.

1.a.2. Problem Solution

Based on the solutions agreed upon by the partners, the solutions to the existing problems are:

<table>
<thead>
<tr>
<th>No</th>
<th>Problem</th>
<th>Offered Solution</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The difficulty to get clean water in Rembang Regency is because the facility area is close to the beach causing the water to be polluted with sea water and becomes salty.</td>
<td>Health workers at the health centre will be given information and education related to good air and water quality at the health centre. In addition to counselling, this service will provide training on how to measure air and water properly and correctly.</td>
<td>After providing counselling and training, there is actual experience with measuring air and water quality.</td>
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2 Methodology

In this activity, counselling and training related to environmental health techniques to increase knowledge about good air and water quality at the Sarang 2 Health Centre were given. The activity was guided by experts with the aim of improving air and water quality at the Sarang 2 Health Centre. Participatory approach was used optimally in this activity. This counselling and training activity was specifically for employees who were at the Sarang 2 Health Centre. This activity was held in March 2022 with Sarang 2 Health Centre as a partner and service participant.

The stages of activities carried out in this counselling and training were; first, coordinating between the service team and partners to discuss the technical implementation,
schedule, and place of extension activities and determine the person in charge. Then the next stage was to prepare materials and supporting tools for counselling and training. After that, the Sarang 2 Health Centre executed service activities using PowerPoint presentations, with professionals demonstrating how the technology measures the quality of the air and water. Afterwards, the experts started a discussion with the participants. The next activity was evaluation and program follow-up plans. The final stage was compiling activity reports, publication articles, and mass media news.

3 Result and Discussion

Environmental health is one of the efforts in the health sector to achieve the highest degree of health. The environmental health of the health centre plays an important role in relation to the health status of the community in the working area of the health centre. The prevention and control of COVID-19 infection done in Sarang 2 Health Centre. The efforts made by the Sarang 2 Health Centre to prevent I were:

a. Routine sterilization of tools every 1 week
b. Routine inspection in 6 months with sanitation kit
c. Separation between medical and non-medical waste
d. Using PPE during work such as gloves, aprons, and masks
e. Disinfect the room
f. Clean the floor everyday
g. Provision of hand washing stations & hand sanitizers

In addition to environmental health concerns, indoor air quality and health care facilities are critical to improving patient health and protecting the health of visitors and staff. Good indoor air quality means that the air does not contain pollutants that cause irritation, discomfort or health problems for the occupants. Poor air quality in health facilities can cause sick building syndrome to health workers. Indoor air quality has been identified by the Environmental Protection Agency's as one of the five most pressing environmental risks to public health [5]. Thus, the Sarang 2 Health Centre conducted regular air quality standard checks. Within a year, 2 environmental health officers conducted inspections by carrying out routine inspections and cleaning of air conditioners at the Sarang 2 Health Centre using a sanitation kit. In addition, an air quality standard measuring instrument was used at the Sarang 2 Health Centre.

Clean water is a quality water-based resource that is often used by the community for consumption or daily activities, including sanitation. Water sanitation and hygiene (WASH) services in health centres are a risk factor in the ability of health facilities to provide safe and quality care [12]. Cleanliness and sanitation of water are very important to reduce the occurrence of infections in health facilities, especially in health centres. At the Sarang 2 Health Centre, water quality is checked and tested once a year by environmental health officers by testing water samples conducted at the Regional Health Lab.

Waste management in work units, especially in health facilities such as health centre is very important to avoid transmission or infection that occurs due to lack of cleanliness in health centre. The waste management of the Sarang 2 Health Centre was carried out by a 3rd party who has collaborated with the Sarang 2 Health Centre. In waste management, there was a separation of medical and non-medical waste. Medical waste was separated in its own room and non-medical waste was made into a waste bank. Then, medical waste was transported once a month, and non-medical waste was transported by garbage trucks every day.
4 Conclusion

Service activities regarding counselling and training related to health techniques in the environment are to increase knowledge about good air and water quality at the Sarang 2 Health Centre. The counselling and training provided have been carried out and show results in the form of the ability of Sarang 2 Health Centre employees to carry out quality standard tests of air by using an air gauge given to the Sarang 2 Health Centre.

With this activity, it is hoped that employees of the Sarang 2 Health Centre can understand the procedures for measuring air properly and correctly, and can maintain air and water quality in the health centre.

References

