

## Prevention of Norovirus Contamination as an Effort to Reduce the Incidence of Diarrhea in Pondok Pesantren Putri Wahid Hasyim Bangil

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### Abstract

Boarding schools are vulnerable places because many students living in one environment will increase the spread of *Norovirus*. Where this disease can cause diarrhea and the incidence of diarrhea is very common in the boarding school environment. Therefore, this activity aims to improve personal hygiene habits as a form of controlling the incidence of diarrhoea caused by *Norovirus* community service which was held in June 2023 was attended by 40 participants from PP Putri Wahid Hasyim Bangil. Activities carried out in the form of providing education, character building of Santri and administrators with health games, and distribution of pretests and posttests. This study was conducted descriptively observational to see the response of participants by looking at the enthusiasm and increase in knowledge of participants by using Wilcoxon test analysis. The results showed a p-value of 0.005. Because the significance value shows  $p < 0.005$ , it can be concluded that "Ha is accepted". This means that there is a difference between the knowledge of students before counseling (Pretest) and after counseling (Posttest). there is an effect of providing counseling that has been carried out in community service activities at PP Putri Wahid Hasyim Bangil related to the Prevention of *Norovirus* Contamination as an effort to reduce the Incidence of Diarrhea.

**Keywords:** Norovirus; Hygiene; Boarding School; Diarrhea; Knowledge

### Abstrak

Pondok pesantren merupakan tempat yang rentan dikarenakan banyak santri yang tinggal dalam satu lingkungan akan meningkatkan penyebaran *Norovirus*. Dimana penyakit ini dapat menyebabkan diare dan kejadian diare ini kental sekali terjadi di lingkungan pondok. Maka dari itu kegiatan ini bertujuan untuk meningkatkan kebiasaan personal hygiene sebagai salah satu bentuk pengendalian kejadian Diare yang ditimbulkan oleh *Norovirus*. pengabdian masyarakat yang dilaksanakan pada bulan Juni 2023 ini dihadiri oleh 40 peserta dari PP Putri Wahid Hasyim Bangil. Kegiatan yang dilakukan berupa Pemberian edukasi, Pembentukan karakter santri dan pengurus dengan games kesehatan dan pembagian pretest dan posttest. Penelitian ini dilakukan secara observasional deskriptif untuk melihat respon peserta dengan dilihat dari antusiasme dan peningkatan pengetahuan peserta dengan menggunakan analisis uji Wilcoxon. Hasil menunjukkan  $p$ -value bernilai 0,005. Karena nilai signifikansi menunjukkan  $p < 0.005$ , maka dapat disimpulkan bahwa "Ha diterima". Artinya ada perbedaan antara pengetahuan santri sebelum dilakukan penyuluhan (Pretest) dan setelah dilakukan penyuluhan (Posttest). terdapat pengaruh pemberian penyuluhan yang telah dilakukan pada kegiatan pengabdian kepada masyarakat di PP Putri Wahid Hasyim Bangil terkait Pencegahan Kontaminasi *Norovirus* sebagai Upaya menurunkan Kejadian Diare.

**Kata Kunci:** Norovirus; Hygiene; Pondok; Diare; Pengetahuan

## INTRODUCTION

### GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEM, AND TARGET SOLUTIONS

#### General Description

A study conducted by the Subdit Diarrhea, Ministry of Health from 2000 to 2010 showed an increasing trend in the incidence of diarrhea among the population (Sabrina et al., 2020). Norovirus infection is notoriously difficult to prevent and control due to its low infection dose, high shedding titer, and environmental stability. The virus can spread through several routes of transmission, the most important being person-to-person and through food. Recent advances in cleaning and disinfection have been made to prevent Norovirus outbreaks (Barclay et al., 2014). According to Rusdi et al.'s research, (2023) conducted on toddlers in Surabaya through calculations using the Vesikari score and the Chi-Square test, found a significant relationship between the severity of diarrhoea and Norovirus infection (Rusdi et al., 2023). To prevent diarrhea caused by Norovirus in Pondok Pesantren, it is important to socialize hand hygiene compliance among santri. A study conducted in Medan found that limited personal hygiene and environmental sanitation play an important role in the prevalence of diarrhea (Purnama et al., 2021). Therefore, increasing knowledge about proper handwashing techniques is essential. A community service program was conducted at Pondok Pesantren Thawalib Sriwijaya Palembang to increase Santri's knowledge about the correct six-step handwashing method to prevent diarrhea (Sabrina et al., 2020). Promoting hand hygiene compliance is an effective way to prevent Norovirus infections that cause diarrhea. It is important to educate students on proper handwashing techniques as part of efforts to improve personal hygiene and sanitation. *Norovirus* is easily spread from person to person through direct contact, contact with contaminated surfaces, and ingestion of contaminated food (California Department of Public Health, 2018). To prevent Norovirus contamination in the boarding school environment, it is important to follow simple prevention tips such as washing hands thoroughly with soap and water after using the toilet or changing diapers, before eating, preparing or handling food, and before administering medication. Food that may be contaminated with Norovirus should be thrown away (Centers for Disease Control and Prevention, 2023). With the number of students who exist and live in one environment, it will certainly increase the spread of Norovirus. Where this disease can cause diarrhea and the incidence of diarrhea is very common in the cottage environment, therefore students must be trained to continue to carry out personal hygiene habits and clean themselves independently as a form of controlling the incidence of diarrhea caused by Norovirus. Wahid Hasyim Bangil Islamic Boarding School was established in 1955. Until now, this boarding school has many female students. This community service activity involves 40 female students who will be given education with material related to preventing Norovirus contamination as an effort to reduce the incidence of diarrhea in boarding schools.

#### Problem

Wahid Hasyim Bangil Islamic Boarding School has a large number of female students. Certain environmental conditions that have a high population density will increase the spread of Norovirus. One of the other factors is the tendency of diarrhoea disease which is commonly found in the boarding school environment. On this basis, we feel the need to conduct training and provide education to Santriwati related to preventive measures for Norovirus infection, such as carrying out personal hygiene and self-cleaning habits.

Table 1: Problem and solution

No	Problem	Solution	Indicators of goal
1	Education: Knowledge level	Knowledge transfer Mentoring empowerment	Increase skor knowledge /skill/behavior

## METHODS

This community service activity was held in June 2023 and was attended by 40 participants. Community service activities carried out in the form of providing education related to Clean Yourself as a prevention of the spread of *Norovirus* and reducing the incidence of diarrhea, character building of students and administrators with health games related to preventing *Norovirus* contamination and the incidence of diarrhea and distributing pretests and posttests. This study was conducted descriptively observational to see changes in participants' knowledge from the pretest and posttest distributed and by looking at the enthusiasm of the participants.

The implementation of community service activities for PP Putri Wahid Hasyim Bangil, with the hope of increasing Santri awareness of the importance of personal hygiene because they have a high risk of experiencing diarrhea. This community service deals with the field of health problems and services. The implementation in this community service activity includes several parts or stages including conducting a survey of the target group as the first stage to obtain information about the location and other aspects of the target area.

The next step is to prepare facilities and infrastructure by preparing questionnaires, materials, and service tools, as well as other needs. Coordination of forum group discussions was carried out by the service team group with the boarding school team to plan conceptual and operational implementation, as well as the job description of each member, determination, and recruitment of training participants.

The last step is the implementation of activities carried out by visiting partner areas and conducting community service activities in the form of providing education related to self-cleaning as a step to prevent the spread of *Norovirus* and reduce the incidence of diarrhea, character building of students, and administrators with health games related to preventing *Norovirus* contamination and diarrhea incidence and distributing pre-test and post-test to measure the level of knowledge of participants before and after participating in material activities.

## RESULTS AND DISCUSSION

Norovirus is one of the pathogens responsible for sporadic diarrhea cases affecting all age groups (Pemerintah Kabupaten Kubu Raya, 2020). Preventive measures can be taken at this time to minimize the risk of Norovirus infection by maintaining personal hygiene, such as washing hands regularly and paying attention to environmental hygiene. This can help to prevent the spread of diarrhea caused by Norovirus in an environment, especially in a boarding school. Implementing these preventive measures will create a healthy and disease-free boarding school environment, and indirectly improve the health and well-being of boarding school residents, as well as reduce absenteeism due to illness. Preventive measures for Norovirus contamination can also be taken by educating and raising the awareness of boarding school residents about the importance of hygiene and preventive practices. By increasing knowledge and awareness, the boarding school community will be better able to protect themselves and others from Norovirus infection.

In the community service activities that we carried out at Wahid Hasyim Bangil Islamic Boarding School, female students were given explanations related to material about diarrhea disease caused by Norovirus infection. The aim is to provide knowledge to Santriwati related to risk factors for diarrhea transmission due to Norovirus infection to foster a sense of sensitivity to the health conditions around them, especially in the processing or consumption of daily food and drinks. Before and after the presentation, we distributed a questionnaire related to the material in the form of pre-test and post-test. We found an increase in the knowledge of the participants before and after the material on diarrhea caused by Norovirus was given. The data from the pre-test and post-test were then tested using Wilcoxon test analysis because the data were not normally distributed. The test results are shown in Table 2.

Table 2: Results of pre-test and post-test data analysis using the Wilcoxon test

Test Statistic	p-value
Wilcoxon Signed Ranks Test	0,005

Based on the results of the Wilcoxon test in Table 2, the significance value shows a  $p < 0.005$  so it can be concluded that there is a difference between the knowledge of female students before counseling (pre-test) and after counseling (post-test). These results are in line with research conducted by Elaine (2013) who found a significant difference in knowledge between before counseling and after counseling at boarding school students in South Jakarta regarding *Sarcoptes scabiei*. Likewise, several other studies have stated that there is a significant difference between the value of pre-counseling and post-counseling knowledge given (Siregar, 2014; Wulandari et al., 2023). However, this is different from Soeroto's research (2014) which states that before counseling, there were students who had a good level of knowledge, but there were still students who did not have adequate knowledge (Soeroto, 2014).

In summary, we can conclude that providing educational material on diarrhea caused by *Norovirus* infection can increase the knowledge and awareness of female students at Wahid Hasyim Bangil Islamic Boarding School. The results of this community service activity also show that providing education related to a particular disease will have a significant impact on minimizing the spread of the disease.

## CONCLUSION

There is an effect of providing counseling that has been carried out in community service activities related to the Prevention of *Norovirus* Contamination as an effort to reduce the Incidence of Diarrhea in students at PP Putri Wahid Hasyim Bangil 2023. This community service activity is very helpful in increasing health-related knowledge among students of Wahid Hasyim Bangil Putri Boarding School about preventing *Norovirus* contamination as an effort to reduce the incidence of diarrhea which can be seen from the high enthusiasm and changes in knowledge gained by students. It is hoped that this can become the knowledge of the students to be able to apply personal hygiene in everyday life.

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## REFERENCE

- Barclay, L., Park, G. W., Vega, E., Hall, A., Parashar, U., Vinjé, J., & Lopman, B. (2014). Infection control for norovirus. *Clinical Microbiology and Infection*, 20(8), 731–740.  
<https://doi.org/10.1111/1469-0691.12674>
- California Department of Public Health. (2018). *Norovirus Toolkit for School and Childcare Center Outbreaks*. Infectious Diseases Branch California Department of Public Health.
- Centers for Disease Control and Prevention. (2023). *Prevent Norovirus | CDC*.  
<https://www.cdc.gov/norovirus/about/prevention.html>
- Pemerintah Kabupaten Kubu Raya. (2020, October 20). *Norovirus Ada di Indonesia: Kenali Penyebab, Gejala, Cara Mencegah hingga Penanganan*. <https://kuburayakab.go.id/seputar-kuburaya/berita/norovirus-ada-di-indonesia-kenali-penyebab-gejala-cara-mencegah-hingga-penanganan>
- Purnama, T. B., Tanjung, R. R. R., & Siregar, W. S. (2021). Prevalensi diare pada santri pondok pesantren di Kota Medan. *Journal of Health Epidemiology and Communicable Diseases*, 7(1), 10–14. <https://doi.org/10.22435/jhecds.v7i1.4559>
- Rusdi, W. E., Wicaksono, G., & Farindra, I. (2023). Infeksi Norovirus dengan Derajat Keparahan Diare Akut pada Balita di Surabaya. *Biomedika*, 76–83.  
<https://doi.org/10.23917/biomedika.v15i1.1752>
- Sabrina, T., Hestningsih, T., & Zanaria, R. (2020). Upaya pencegahan penyakit diare dengan metode enam langkah cuci tangan yang benar pada santri Pondok Pesantren Thawalib Sriwijaya Palembang. *Jurnal Pengabdian Masyarakat: Humanity and Medicine*, 1(1), 1–10.  
<https://doi.org/10.32539/Hummed.V1i1.11>
- Siregar, G. T. (2014). Pengaruh Penyuluhan Pencegahan Penyakit Skabies Terhadap Pengetahuan Santri di Ponpes Al-Anshor Desa Manunggal Kecamatan Padang Sidempuan Tenggara Kota Padang Sidempuan Tahun 2014. *Scientia Journal*, 4(1).
- Soeroto, A. A. (2014). *Efektivitas penyuluhan terhadap pengetahuan santri mengenai gejala dan pencegahan askariasis di pesantren x Jakarta Timur* [Undergraduate thesis]. Universitas Indonesia.
- Wulandari, R., Ulfa, L., & Samingan, S. (2023). Pengaruh Penyuluhan Terhadap Pengetahuan Santri Tentang Penyakit Skabies di Pondok Pesantren Al Hidayah Boarding School Kota Depok Tahun 2022. *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, 7(1), 101–109.  
<https://doi.org/10.52643/jukmas.v7i1.3067>