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## Strengthening Occupational Health and Safety Knowledge among Mineral Water Delivery Drivers

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### Abstract

Mineral water delivery drivers face various occupational risks, including fatigue, accidents, and musculoskeletal disorders due to long working hours and repetitive tasks. However, awareness of Occupational Safety and Health (OSH) in this informal sector remains low. This community service program aimed to improve drivers' knowledge and awareness of OSH through interactive education, demonstrations, and ergonomic simulations. The activity involved 33 drivers and included a pre-test and post-test to assess knowledge improvement in four areas: risk awareness, PPE usage, ergonomic practices, and general OSH concepts. Results showed a significant increase in average scores—from 53.2 (pre-test) to 79.2 (post-test), with a gain of 26 points. The program proved effective in enhancing OSH understanding among participants. By using participatory and practical approaches, the initiative successfully raised awareness of workplace safety and encouraged safer work behavior. This effort highlights the importance of extending OSH education to informal workers to support a safer and healthier work environment

**Keywords:** Occupational Health and Safety, Informal Sector Workers, Community Service Program, Ergonomic Education

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## INTRODUCTION

The job of delivering mineral water presents a high level of occupational health and safety risks. These risks include fatigue due to long working hours, the potential for workplace accidents, and musculoskeletal disorders caused by prolonged static sitting positions and repetitive physical activities (Arnita et al., 2020). These conditions affect not only physical health but can also lead to stress and mental health problems. Therefore, it is important to identify and understand these potential risks in order to implement appropriate preventive measures.

However, understanding of Occupational Health and Safety (OHS) in the informal sector, particularly among mineral water delivery drivers, remains low. Most drivers do not have adequate knowledge regarding potential hazards in the work environment and appropriate self-protection measures. Limited access to information and education on OHS exacerbates this issue. Informal sector workers are generally not the primary target of OHS training programs, resulting in low awareness of the importance of applying OHS principles.

In this context, OHS education and socialization are crucial interventions. Through a well-targeted educational approach, drivers can gain a basic understanding of OHS concepts and practices as well as how to stay safe and healthy while working. Several studies have shown that effective education can lead to changes in work behavior towards safer and healthier practices and reduce the risk of workplace accidents (Arnita et al., 2020). With improved understanding and awareness of the importance of OHS, it is expected that working conditions

for drivers will become safer and their productivity will increase.

This program focused on two main issues. First, it was important to identify in detail the occupational health and safety risks experienced by mineral water delivery drivers. Second, an analysis was needed to assess how far the OHS socialization program could improve drivers' knowledge and lead to more preventive work behavior. Understanding these two aspects would serve as the basis for designing effective intervention strategies to enhance OHS implementation among the target group.

The main goal of this community service program was to provide comprehensive education on the basic principles of OHS to mineral water delivery drivers. With sufficient knowledge, drivers are expected to apply safer work behaviors and manage work-related risks more effectively. Additionally, this program aimed to raise drivers' awareness of the importance of protecting themselves from occupational hazards to minimize the risk of accidents or occupational diseases.

Faced with the various challenges inherent in the work of mineral water delivery drivers, the implementation of OHS socialization becomes a relevant and important strategy. This program was not only aimed at improving individual health and safety but also at fostering a culture of safe, healthy, and productive work, especially in informal work environments that have so far received little attention in the implementation of OHS.

## **RESEARCH METHODS**

This community service activity was carried out through several stages designed to provide practical understanding of Occupational Health and Safety (OHS) to mineral water delivery drivers. The implementation method included educational and participatory approaches so that participants could actively engage in the entire series of activities.

The activities included OHS socialization through interactive lectures combined with group discussions to enhance understanding and foster critical awareness among participants. Demonstrations were also conducted on the use of simple personal protective equipment (PPE) appropriate for the drivers' work, such as back supports, gloves, and work shoes.

The activity was conducted at UD Virginia, Walian Sub-district, South Tomohon District, Minahasa Regency, which was chosen based on accessibility and community willingness to participate. The activities were carried out in the morning before work began.

There were 33 participants, all of whom were mineral water gallon delivery drivers working in the designated community service area. They represented a target group with limited access to OHS information and who had never received similar training. The activity was implemented by a team of lecturers from the Faculty of Public Health, Sam Ratulangi University. To evaluate the effectiveness of the activity, pre-tests and post-tests were conducted to measure participants' knowledge improvement on OHS before and after the activities.

## **RESULTS AND DISCUSSION**

The OHS awareness program aimed to improve knowledge and consciousness among mineral water delivery drivers regarding the importance of applying OHS principles in their daily work. Throughout the sessions, participants demonstrated enthusiasm and active

participation during lectures, group discussions, PPE demonstrations, and ergonomic posture simulations.

To evaluate the program's effectiveness, all participants completed a pre-test and post-test. These assessments were used to measure changes in knowledge before and after the OHS socialization. The results were analyzed and presented as average score comparisons along key knowledge indicators.



Gambar 1. Kegiatan Sosialisasi



Gambar 2. Keaktifan Peserta

Tabel 1. Hasil Pre Tes dan Post Test

No.	Indicator	Pre-test (Avg.)	Post-test (Avg.)	Increase ( $\Delta$ )	Description
1	Knowledge of work-related risks	52,3	78,5	+26,2	Significantly increased
2	Understanding of PPE and its use penggunaannya	54,1	80,2	+26,1	Significantly increased
3	Understanding of ergonomic principles	51,7	77,6	+25,9	Significantly increased
4	General knowledge of OHS	54,5	80,3	+25,8	Significantly increased
<b>Total Average</b>		<b>53,2</b>	<b>79,2</b>	<b>+26,0</b>	<b>Significantly increased</b>

The pre-test and post-test results indicated a significant improvement in participants' understanding of OHS. The average score increased from 53.2 (pre-test) to 79.2 (post-test). This increase was observed across all measured indicators: awareness of workplace risks, proper PPE usage, ergonomic principles, and general OHS knowledge

These findings underscore the effectiveness of the OHS education program in enhancing knowledge and awareness, particularly among informal sector workers. The notable improvement in risk awareness (from 52.3 to 78.5) shows that participants gained a better understanding of hazards such as physical fatigue, accidents, and musculoskeletal injuries (Yamin, 2020; Yuantari & Nadia, 2018; Fauzan & Salianto, 2021)

Similarly, the improvement in understanding PPE usage (from 54.1 to 80.2) reflects increased awareness of personal safety measures—an area often overlooked in informal employment settings (Alias & Serang, 2018; Fauzan & Salianto, 2021).

Understanding of ergonomic principles also improved significantly, rising from 51.7 to 77.6. This demonstrates the program's success in educating drivers on safer postures and physical techniques to minimize repetitive strain and musculoskeletal disorders (Patricia & Yani, 2023; Citerawati et al., 2023)

General OHS knowledge also increased from 54.5 to 80.3, suggesting that participants not only absorbed theoretical concepts but also recognized their practical relevance in daily work routines (Prasetyowati et al., 2019; Citerawati et al., 2023).

Overall, this program contributed to shaping safer work behavior among mineral water delivery drivers. The significant increase in knowledge is expected to foster a greater sense of responsibility and commitment to safety practices, ultimately enhancing both individual wellbeing and workplace safety culture (Amira et al., 2022; Iqbal et al., 2020).

## CONCLUSION

Based on the outcomes of this community service initiative, it can be concluded that the OHS socialization program for mineral water delivery drivers had a substantial positive impact. Participants demonstrated improved knowledge across all key indicators: risk

awareness, use of PPE, ergonomic work principles, and general understanding of OHS. The post-test scores increased by an average of 26 points compared to the pre-test, affirming the success of the educational and participatory approach in effectively delivering OHS material.\

This activity also highlighted the importance of providing OHS education to informal sector workers—an often overlooked group in formal safety programs. By enhancing participants' understanding, the program is expected to encourage behavioral shifts toward safer and healthier work practices. Furthermore, this initiative contributes to fostering collective awareness on the importance of workplace safety culture, which in turn supports long-term improvements in productivity and wellbeing among drivers.

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