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Raising Occupational Safety and Health Awareness of Air Conditioner Technicians in Metro City

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ABSTRACT

The partners in this community service program are residents of Metro City who work as air conditioner (AC) technicians. The main problems faced by the partners are their low awareness of the importance of Occupational Safety and Health (OSH), which often leads to neglect of safety and ignorance of the high risks of workplace accidents in their profession. Another problem is the lack of understanding of Standard Operating Procedures (SOPs) related to their work, which can result in losses for themselves, customers, and the environment. These issues arise due to insufficient awareness and knowledge. The solutions implemented include raising awareness of the importance of OSH in AC work, providing counseling on workplace accident risks and their prevention, as well as delivering socialization and training on SOPs for AC installation, maintenance, and repair. The outcomes of the program show that the partners are now able to identify common problems in their work that were previously overlooked, have become more aware and knowledgeable about OSH, are better protected from workplace accidents, and are able to perform installation, maintenance, and repair of AC units according to established SOPs.

1. Introduction

Occupational Safety and Health (OSH) is a crucial aspect that must be considered in every line of work, including technical services such as air conditioner (AC) installation and maintenance. However, in daily practice, many workers still neglect safety measures, either due to lack of awareness or intentional disregard, which increases the risk of accidents. This is also evident among AC technicians, many of whom assume that their work carries little risk, leading them to perform tasks without using personal protective equipment (PPE) and without following established Standard Operating Procedures (SOPs).

Work accidents can occur due to both human factors, such as fatigue, boredom, and negligence, and environmental factors, including unsafe conditions like machines without proper safeguards, worn-out tools, inadequate lighting, improper workspace layout, weather, noise, and slippery floors [1]. National data reflect the seriousness of this issue. Based on Jamsostek records, workplace accidents in Indonesia increased between 2007 and 2010, reaching 98,711 cases in 2010, with 6,647 workers suffering permanent disability

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and 2,191 workers dying [2]. More broadly, the International Labour Organization (ILO) reported in 2013 that one worker in the world dies every 15 seconds due to workplace accidents or occupational diseases, with 2.3 million deaths each year [3].

In Indonesia, the trend is also alarming. The number of workplace accidents reached 24,910 cases in 2014 and sharply increased to 105,182 cases in 2015, showing an annual growth rate of 5–10% [4]. These conditions highlight the urgent need for OSH awareness and practice, particularly in professions with high risks, including AC technicians [5,6].

The lack of awareness and knowledge about OSH and SOPs among AC technicians in Metro City often leads to unsafe practices that endanger not only themselves but also customers and the surrounding environment. Therefore, this community service program was carried out with the aim of raising awareness, providing education on workplace risks and prevention, and delivering SOP-based training on AC installation, maintenance, and repair. Through these efforts, it is expected that technicians will become more aware of the importance of OSH, avoid workplace accidents, and be able to perform their work safely and professionally.

2. Method

The implementation of this community service program began with socialization and coordination activities conducted by the program leader together with AC technicians in Metro City as partners. The purpose of this initial stage was to introduce the objectives of the program, explain the planned work program, and build mutual understanding between the implementing team and the partners.

The methods applied in this program included:

2.1. Socialization and Coordination

The implementing team held discussions with the partner technicians to identify problems related to their low awareness of Occupational Safety and Health (OSH), the risks and hazards in AC work, and their limited understanding of Standard Operating Procedures (SOPs) for installation, maintenance, and repair.

2.2. Problem Identification

A joint analysis was carried out to map the key issues faced by the technicians, focusing on unsafe work practices and lack of compliance with OSH standards. This stage aimed to highlight the potential short-term and long-term consequences if AC work was performed without regard to OSH and SOP guidelines.

2.3. Counseling and Awareness Activities

Counseling sessions were delivered to improve partner awareness of OSH, including education on workplace risks, accident prevention, and the importance of adhering to safety standards.

2.4. Training and Assistance

Practical training sessions were provided on the application of SOPs in AC installation, maintenance, and repair. During these activities, partners were accompanied by the implementing team to ensure correct application of procedures.

2.5. Mentoring and Evaluation

Continuous mentoring was conducted to monitor partner progress and reinforce the implementation of OSH principles. At the end of the program, evaluations were carried out to assess improvements in awareness, knowledge, and skills related to OSH and SOP compliance.

Through these steps, the program sought to ensure that AC technicians in Metro City could work safely, avoid workplace accidents, and perform their tasks in accordance with established SOPs.

3. Result and Discussion

The implementation of this community service program produced several important outcomes. First, the partners, who are AC technicians in Metro City, were able to identify various problems in their work that had previously been overlooked, whether due to negligence or lack of knowledge. This self-

awareness became the first step toward improving their work practices.

Second, the partners gained a stronger understanding of the importance of OSH in every task that carries potential accident risks. This improved understanding increased their awareness of the need to apply OSH standards consistently in their daily work.

As a result of this awareness, the partners were better able to avoid workplace accidents, both those caused by carelessness and those arising from ignorance of proper procedures.

Finally, through training and mentoring, the partners successfully learned to install, maintain, and repair AC units according to established Standard Operating Procedures (SOPs). This improvement not only ensured that AC units functioned properly but also made them more durable and safer for both users and the surrounding environment. Table 1 and Figure 1 present a comparison of partner conditions before and after the community service program, showing significant improvements in OSH awareness, workplace risk knowledge, SOP compliance, reduced accident risk, and overall work quality and safety.

Table 1. Comparison of Partner Conditions Before and After the Program

Aspect	**Before Program**	**After Program**
Awareness of OSH	Low awareness; safety often neglected	Increased awareness; partners understand and apply OSH in their daily work
Knowledge of Workplace Risks	Limited knowledge; accidents often seen as "normal"	Able to identify risks and understand accident prevention strategies
Compliance with SOPs	SOPs not understood or followed	Able to install, maintain, and repair AC according to established SOPs
Workplace Accident Risk	High risk due to negligence and lack of safety measures	Lower risk; partners more careful and protected through application of OSH
Work Quality and Safety	AC work often unsafe, less durable, and risky for users	AC units function properly, are durable, and safe for users and environment

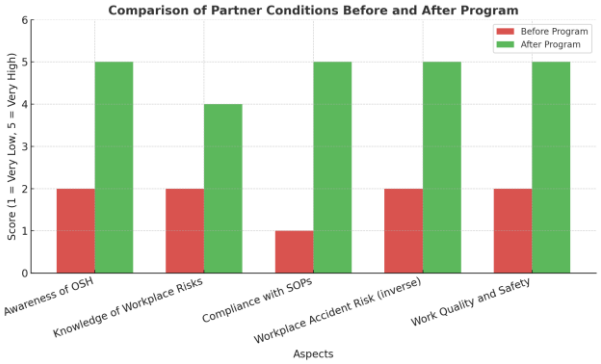

Figure 1. Comparison of partner conditions before and after the community service program.

The results of this community service program demonstrate that AC technicians in Metro City experienced significant improvements in awareness, knowledge, and skills related to Occupational Safety and Health (OSH). This is in line with findings by Waruwu [1], who reported that workplace accidents often occur due to negligence, fatigue, and unsafe working environments. Before the program, many partners overlooked safety procedures and underestimated risks; however, after receiving counseling and training, they became more aware of the dangers associated with their work and took preventive actions.

The outcomes also support the global perspective provided by the International

Labour Organization (ILO, 2013), which reported that one worker dies every 15 seconds worldwide due to occupational accidents or diseases, and millions suffer non-fatal injuries annually. Similar to ILO's findings, this program highlights how OSH neglect among AC technicians could have serious implications for both workers and users. By increasing OSH awareness, the technicians in this program reduced their vulnerability to such risks.

Furthermore, the improvement in SOP compliance among partners is consistent with national studies. Martalina showed that workplace accident cases in Indonesia increased from 24,910 in 2014 to 105,182 in 2015, largely due to a lack of safety standards and monitoring [4]. The progress achieved in this program, where technicians learned and applied SOPs in installation, maintenance, and repair, reflects the importance of structured training in reducing unsafe practices and accident rates.

Compared with industrial workers in larger companies, informal sector workers such as AC technicians are often more vulnerable, as they generally lack structured OSH education and supervision [2]. This program addressed that gap by providing targeted interventions, enabling technicians to better protect themselves, their customers, and the surrounding environment.

While the program outcomes are promising, challenges remain. Sustained mentoring and institutional support are necessary to maintain behavioral changes. Collaboration with local government and professional associations could also help scale the impact and ensure that OSH practices become a standard culture among AC technicians in Metro City.

Overall, this community service program confirms the findings of previous studies and contributes new evidence that OSH awareness and SOP-based training can effectively reduce workplace accident risks in the service sector, particularly among independent technicians. Figure 2 illustrates the OSH awareness activity for AC technicians in Metro City, while Figure 3 shows the socialization of SOPs along with practical training on AC installation, maintenance, and repair.

Figure 2. OSH awareness activity for AC technicians in Metro City.

Figure 3. Socialization of SOPs and practice of AC installation, maintenance, and repair.

4. Conclusion

This community service program has successfully increased the awareness, knowledge, and skills of AC technicians in Metro City regarding Occupational Safety and Health (OSH). Through socialization, counseling, and training, the partners were able to identify problems in their work practices, understand workplace risks, and realize the importance of applying OSH in every task. The technicians are now able to prevent workplace accidents, apply safety standards, and carry out AC installation, maintenance, and repair in accordance with Standard Operating Procedures (SOPs). The outcomes not only improve partner competence and safety but also contribute to safer services for users and a healthier work environment.

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