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Lifting Moving Management with Role Play Method On Volunteers Mojokerto Tanggap Bencana (MTB)

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ABSTRACT

Lifting and moving disaster victim management skills are important competencies for volunteers. Incorrect techniques can aggravate the victim's injury, but it is also at high risk of causing back injury to volunteers. Mojokerto Tanggap Bencana (MTB) volunteers need effective training methods to ensure safe mastery of techniques. The Role Play method was chosen because it offers a simulation of real situations of hands-on practical learning. analyzes the effect of the application of the Role Play method on the improvement of the knowledge and skills of lifting moving victims in MTB volunteers. This study used a quasi-experimental design of One-Group Pretest-Posttest with a total sampling technique of 56 active MTB volunteers. The intervention provided was lifting moving training using the Role Play method. Knowledge was measured using an intervention pre-post test questionnaire . Skills were measured using a standard checklist on a score scale of 0-100. Data analysis was carried out by paired t-test. The implementation of lifting moving management by volunteers prior to role play training is still low, with nearly half of respondents (48%) rated "Not Appropriate." However, role play training succeeded in substantially improving the competence of volunteers, as shown by a significant surge in respondents who carried out according to the SOP to (86%). The results of paired t-test confirmed that there was a significant influence of the method with a p value of 0.000<α(0.05), this proves the effectiveness of the role play method in improving lifting moving management. Simulations that are close to field conditions, coupled with live feedback, allow volunteers to internalize safe lifting moving techniques and practice decision-making skills. The Role Play method is effective in increasing the knowledge and management skills of lifting moving victims in MTB volunteers.

Keywords

Lifting Moving, Role Play, Disaster Volunteer

INTRODUCTION

Geographically, Indonesia is a natural disaster-prone area, because it is located at the confluence of four tectonic plates (the Asian Continental Plate, the Australian Continent, the Indian Ocean, and the Pacific Ocean). Indonesia is also in the Pacific Ring of Fire area which causes high volcanic activity. There are 500 volcanoes spread across various regions, 127 of which have the status of active volcanoes, so Indonesia often experiences natural disasters in the form of erupting volcanoes and earthquakes which are a consequence of their geological conditions. In addition to geological vulnerability, Indonesia is also prone to floods. In the last 10 years, there have been 10,150 flood incidents. Other natural disasters are landslides, tsunamis, droughts, and forest fires. The high vulnerability to various types of disasters requires a responsive disaster management system and a strong and comprehensive institutional framework (Legislatif & Utama, 2025). Indonesia, as a country with a high level of disaster vulnerability, relies heavily on the active role of volunteers in the emergency response phase, including the Mojokerto Tanggap Bencana (MTB) team. The fast and precise performance of volunteers in evacuating victims, especially through Lifting and Moving techniques, is an important determinant in life-saving efforts.

Handling victims in the disaster emergency response phase is a crucial stage that determines the prognosis of survivors. Among the various rescue procedures, lifting and moving plays an important role (Huang et al., 2025). This technique must be performed appropriately and safely, especially for victims suspected of spinal injuries or fractures, to prevent secondary injury or permanent paralysis (Limmer, Danniel. F, 2016). Lifting Moving essentially refers to the systematic process of attempting to move an object or, in a professional context such as medical, a patient from one location to another, often with the aim of safety, the provision of care, or a change of position. Lifting is a key component of this process, which is the act of lifting or lifting an object/patient, which must be done with proper technique to protect the rescuer from back injury and ensure the comfort or safety of the patient. Meanwhile, Moving covers the entire move, from determining the method of moving (emergency, urgent, or non-urgent), the use of assistive devices such as stretchers or scoop stretchers, to final placement. Therefore, lifting has always been a precursor to moving, and both are basic operations in logistics, warehousing, and first aid that demand serious attention to ergonomics and safety (Hindson, 2016).

Volunteers Mojokerto Tanggap Bencana (MTB), as part of the rapid response team in the Mojokerto Regency area, it is required to have this competence. Preliminary observations suggest that the training that is commonly provided is often theoretical and lacks complex simulations, which has an impact on the lack of volunteer confidence and the potential for fatal errors in the field. Although the enthusiasm and initiative of MTB volunteers is high, initial observations show that of the 5 volunteers we met, 4 of them still have significant variations in the mastery and application of the correct Lifting Moving procedure . A technical error, such as not maintaining the victim's spinal alignment or using back strength instead of leg muscles, not only has the potential to aggravate the victim's injury (e.g., becoming permanently disabled) but is also highly susceptible to causing injury to the volunteer himself (such as Low Back Pain). The lack of intensive and realistic training is the root of the problem that must be addressed immediately to ensure the effectiveness and safety of the team's operations.

So far, the training provided to volunteers is often one-way (lectures) or limited demonstrations. The lack of simulation based on real scenarios makes knowledge transfer passive and difficult to apply under the pressures of real emergency situations. The urgent need today is to change the approach to training from a purely theoretical one to a deep experience-based practice. In response to this, this study proposes the Role Play Method as an innovative training intervention solution. The Role Play method allows volunteers to

directly practice realistic disaster scenarios, taking on the role of helper and victim, thus encouraging active learning, critical decision-making, and the formation of correct muscle memory (Lavanya et al., 2024). It is hoped that the application of Lifting Moving Management with the Role Play Method on MTB Volunteers will not only significantly improve their technical competence, but also instill awareness of the importance of volunteers' personal safety and victim safety in every disaster response action.

The Role Play method is a learner-centered educational strategy, in which volunteers play a specific role in scenarios designed to be close to reality. This method is ideal for training psychomotor skills and attitudes, as it promotes experiential learning, problem-solving, and teamwork. This study aims to analyze the management of lifting moving before and after being given training with the role play method on MTB volunteers, as well as empirically test how much influence the Role Play method has in improving the theoretical knowledge and lifting skills of MTB volunteers so as to ensure the safety of victims and volunteers themselves.

METHOD

This study uses a quasi-experimental design with *the One-Group Pretest-Posttest Design* approach which aims to compare the value of the subject's knowledge and skills before and after the intervention (Nuzulia, 2018) in the form of Role Play training. The research was conducted at the MTB Base Camp in Mojokerto Regency. The population is all active MTB volunteers involved in field activities. The sample of this study was all volunteers who were registered as MTB volunteers and were willing to participate amounting to 56 respondents. The research was carried out on October 17-18, 2025. Data collection techniques and procedures using questionnaires and observation sheets before intervention. The instruments used are questionnaires and observation sheets with AHA 2020 guidline. The procedure for data collection and analysis was carried out in a structured manner by filling out a questionnaire followed by a paired t-test statistical test analysis. In this study, all respondents were given Informed Consent and the confidentiality of their data was guaranteed.

RESULTS

1. General Data

Table 1 Characteristics of Respondents in Lifting Moving Management Research with Role Play Method in Volunteers Mojokerto Tanggap Bencana (MTB)

No	Criterion	Sum	Percentage
1	**Gender**		
	Male	36	64,3%
	Woman	20	35,7%
2	**Final Education**		
	SD	8	14,3%
	SMP	13	23,2%
	SMA	35	62,5%
3	**Experience/Training**		
	Experienced	30	53,6%
	Never	26	46,4%
4	**Work**		
	Housewives	13	23,2%
	Swasta	15	26,7%
	Not Working	15	26,7%
	Student	13	23,2%
5	**Age**		

	Young (23-34 years old)	21	37,5%
	Middle-aged (35-49 years old)	19	33,9%
	Old (23-59 years old)	16	28,6%
	Total Number of Respondents	**56**	**100%**

From the table above, it can be concluded that the respondents are dominated by men (64.3%). The majority of respondents (62.5%) had a high school education, while the least elementary education (14.3%). More than half of the respondents (53.6%) have done training. Of the 56 respondents, 15 private respondents (26.7%) and 15 volunteer respondents (26.7%), the most respondents were in the Young group (23–34 years).

2. Specific data

Table 2 Characteristics of respondents based on the suitability of the implementation of lifting moving before and after being given role play method training to volunteers Mojokerto Tanggap Bencana (MTB)

No	Suitability of Lifting Moving Implementation with SOP	Before Role Play Method Training		After Role Play Method Training	
		Jumlah	Prosentase	Jumlah	Prosentase
1	Appropriate	29	52 %	48	86 %
2	Inappropriate	27	48 %	8	14 %
	Total Number of Respondents	**56**	**100 %**	**56**	**100 %**

Based on the results presented in table 2, it shows that the role play method training provided has a positive impact on the suitability of the implementation of Lifting Moving with SOP by volunteers. Prior to the role play method training, the level of implementation suitability was still relatively low, with only 29 respondents (52%) rated "Suitable," while the majority, namely 27 respondents (48%), were still categorized as "Not Suitable" out of a total of 56 respondents. However, after the role play method training, there was a drastic increase in the competence of volunteers, where the number of respondents who carried out according to the SOP jumped significantly to 48 people (86%), and only 8 respondents (14%) remained who were still considered "Not Suitable," indicating that the training method succeeded in substantially improving the management of Lifting Moving in volunteers. The results of the analysis based on *the paired t-test* showed that there was a significant influence on the management of lifting moving with the role play method with a p value of 0.000 < α (0.05). The average post-training score is much higher than the average pre-training compliance score.

DISCUSSION

1. Identifying Lifting Moving Management Before Being Provided Role Play Method Training to Volunteers Mojokerto Tanggap Bencana (MTB)

Based on the results presented in table 2, it shows that before the role play method training, the level of implementation suitability was still relatively low, with only 29 respondents (52%) rated "Suitable," while the majority, namely 27 respondents (48%), were still categorized as "Not Suitable" out of a total of 56 respondents.

Based on learning theory, especially cognitive theory, the limitation of basic knowledge and skills (cognitive theory) in the implementation of activities before being given the role play method is often rooted in a lack of knowledge or misconception of the correct basic principles. Among them are; (a) The correct principles of Lifting Moving Management Biomechanics are highly dependent on the understanding of body biomechanics (such as using the legs as supports, keeping the back straight, and moving the load close to the center of gravity). Inconsistencies in volunteer

practices are most likely to occur because they have not fully understood or applied these principles. If volunteers don't understand the risk of injury to themselves and their victims, they tend to use intuitive but unsafe techniques. (b) Exposure to Formal Training is a high number of nonconformities indicating that previous training or socialization of Lifting Moving procedures (if any) may be inadequate or not well internalized. Motor skills such as lifting victims require intensive repetitive training (practice), not just the provision of theoretical material (Alahmad, 2020).

Judging from the context of the environment and field practice (volunteers' opinions and realities), procedural inconsistencies are often compounded by pressures and conditions on the ground. Time Pressure and Stress In disaster situations, volunteers are under high pressure and time urgency. This condition can lead to a decrease in focus and a tendency to use fast methods (*cut corners*) (Wandani et al., 2023) rather than following SOP that require longer time and good team coordination. The 48% mismatch may reflect an unsafe adaptation to emergency conditions. The variety of team skills also has an effect, Safe Lifting Moving Operations usually involve a team of at least two people. This suggests that the wrong practices of one team member can harm all involved.

Judging from the context of justifying the need for training in the role play method (social learning theory), the urgency of providing training with the role play method is seen as more effective. According to Bandura's Social Learning Theory, the most effective learning occurs through observation, imitation, and real practice in a safe environment. The Role Play method allows volunteers to live out the role (as helper and victim), practice the technique repeatedly, and receive instant feedback (Risal, Debi Irama Sutarto, 2023). Increased self-efficacy: Lifting moving skills require high self-efficacy. By practicing the scenario repeatedly through role play, volunteers will build confidence that they are capable of performing the procedure correctly and safely, which will ultimately improve the consistency of execution (from 52% to a higher number).

Based on the analysis above, the researcher can conclude that the results of this study can be caused by a lack of feedback and supervision in the field. Without regular evaluation and correction, wrong practices can become bad habits that are difficult to change. the low level of conformity (48% "non-conform") in MTB volunteers is a critical indicator that demonstrates the need for training interventions that focus on the practice of motor skills and an understanding of safety principles. The role play method was appropriately chosen to address this problem, as it can bridge theoretical knowledge with practical skills in situations that resemble field realities.

2. Identification of Moving Lifting Management After Being Provided with Role Play Method Training for Volunteers Mojokerto Tanggap Bencana (MTB)

Based on the results presented in table 2, it shows that, after the role play method training, there was a drastic increase in volunteer competence, where the number of respondents who carried out according to the SOP jumped significantly to 48 people (86%), and only 8 respondents (14%) remained who were still considered "Not Suitable," indicating that the training method succeeded in substantially improving the management of Lifting Moving in volunteers.

The most prominent result was a drastic increase in the level of conformity of the implementation of Lifting Moving with SOPs after respondents were given role play method training. The increase from 52% to 86% shows that the role play method is very effective in improving respondents' understanding, skills, and compliance with Lifting Moving SOPs. Practical Learning The role play method allows respondents to directly practice correct procedures (psychomotor) and receive immediate feedback. This is much more effective than the usual lecture or discussion method, especially for procedures that require physical skills such as Lifting Moving (moving and lifting). Empathy and

Cognitive Experience not only understands the SOP (cognitive) measures, but also feels the importance of safety and the risks that may occur if procedures are not followed, thereby increasing safety awareness (affective).

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The significant increase in compliance after role play training can be explained by considering the composition of the respondents. Based on age criteria, it shows that Youth and Higher Education in the majority of respondents are in the Young Age group (23-34 years) (37.5%) and have the last high school education (62.5%). This young and middle-to-upper educated age group tends to have a higher level of adaptability, is more open to new learning methods such as role play, and has good cognitive abilities to absorb complex procedural information. In the context of Social Learning Theory, they are effective observers and quick imitators.

Based on the Balance of Experience of respondents who have been (53.6%) and never (46.4%) have participated in the training almost balanced. For those who have never been before, *role play* training serves as a crucial first mastery experience, instantly increasing their Self-Efficacy as they successfully practice the correct procedures. For those who have been, *role play* serves as a correction to old habits that may not be in accordance with the SOP, because they see the correct model, supported by vicarious reinforcement (see others succeed) and immediately practice the correction of the behavior (Lavanya et al., 2024).

Based on Employment (Private) The proportion of respondents who work in the private sector (26.7%) may be more aware of the professional demands and safety of work in the work environment. This awareness creates a higher intrinsic motivation to learn and comply with SOPs (Personal Factors in Triadic Reciprocal Causation Bandura), so they are more responsive to practice-based training interventions that can be directly applied in the workplace (Legislatif & Utama, 2025). Overall, the demographic characteristics of respondents who are relatively young, educated, and diverse in experience create an environment conducive to the success of *the role play* method in building Self-Efficacy and transferring skills, which

ultimately results in a very high increase in SOP compliance.

Based on the above analysis, the results of this study clearly show that Training with the Role Play Method has a positive and significant influence in increasing compliance and suitability of the implementation of Lifting Moving procedures with Standard Operating Procedures (SOP). A 34% increase in suitability (from 52% to 86%) proves that practical, experience-based simulations are highly recommended approaches for procedural skills training.

3. Analysis of Lifting Moving Management Role Play Method in Volunteers Mojokerto Tanggap Bencana (MTB)

The results of the analysis based on the paired t-test showed that there was a significant influence on the management of lifting moving with the role play method with a p value of 0.000 < α (0,05). The average score after training is much higher than the average score before training.

The results of the study showed a significant improvement in compliance scores after the intervention in line with and strengthened the Social Learning Theory by Albert Bandura. That learning through observation of the role play method allows MTB volunteers to directly observe (observe) and practice (imitate) correct behaviors or procedures in Lifting Moving Management (Guo et al., 2025). In the context of a disaster, seeing the demonstrations of right and wrong during role play serves as an effective model of behavior (Emaliyawati & Ibrahim, 2025). The role play method also allows to cultivate Self-Efficacy, where the increase in compliance scores indicates that the volunteers not only know the correct procedures, but also feel capable (have high self-efficacy) to do so. Role play provides an opportunity for them to practice skills in a safe environment and get hands-on feedback, which directly increases their self-confidence in real-life situations (Ozata, 2025).

The Role Play method proves to be a very effective instrument, especially for psychomotor skills such as *lifting moving*. Direct application (Application) in the application of learning Unlike lectures or discussions, *role play* forces volunteers to immediately apply theoretical knowledge of the principles of biomechanics, ergonomics, and patient safety into real actions. Experiential learning in this method facilitates Experiential Learning where participants learn through experience and reflection. Volunteers will identify their own mistakes while acting as helpers or victims, making for deeper learning and better long-term skill memory retention. In addition to technical skills (*lifting moving*), *role play* also trains crucial non-technical skills in disaster teams, such as effective communication (Azfar et al., 2025), teamwork, and quick decision-making under pressure. Compliance with procedures often also involves adherence to team communication protocols (Bezzina et al., 2025).

The results of the analysis show significant improvements and have strong and urgent practical implications for Volunteers Mojokerto Tanggap Bencana (MTB). The increase in the average score indicates success in standardizing lifting moving techniques among volunteer members. Therefore, the opinion that can be expressed is that the Role Play method must be immediately integrated and made a mandatory, regular, and repetitive component in the MTB training curriculum. This consistent application of the correct lifting moving procedure is at the core of double safety: the safety of the victim from potential secondary injuries (especially spinal trauma) and the safety of the volunteers from musculoskeletal injuries (such as back pain) which are high occupational risks. In addition, MTB are advised to consider the development of other training modules (e.g., field triage, emergency communication) by adapting this proven role play format, to ensure that all volunteers' critical competencies are at a uniform and high level of efficacy and compliance.

The role play method successfully increased MTB volunteers' compliance with the Lifting Moving Management procedure.

These results provide strong empirical evidence to support the use of role play methods as a key strategy in the continuing education of disaster volunteers, ensuring they have high competence and confidence to act safely and effectively during disaster management operations. Managerially, role play interventions for MTB Volunteers are a successful, efficient, and crucial training investment in improving safety, performance standardization, and operational readiness of the team in the face of disasters.

CONCLUSIONS

The Role Play method has proven to be effective and significant in improving the knowledge and management skills of Lifting and Moving victims in MTB volunteers. Improvement in practical skills is the most prominent, suggesting that Role Play is a superior method for psychomotor learning in the context of disaster preparedness. It is recommended that the Role Play method be permanently integrated into the lifting and moving training curriculum, with an emphasis on diverse and complex scenarios. For further research, it is necessary to conduct further research with a true experiment design (using a control group) to compare the effectiveness of Role Play with conventional training methods. In addition, it is necessary to research the long-term impact of Role Play training (evaluation 3-6 months post-training).

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