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FEATURES OF IMPROVING THE SYSTEMS FOR STRUCTURING FIRST AID TRAINING PROCEDURES

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Annotation: This study investigates the features of improving first aid training systems, focusing on the implementation of a standardized curriculum, blended learning approaches, and the integration of technology into the training process. Participants from a corporate setting were divided into two groups: one receiving traditional in-person training and the other participating in a blended learning model, combining online modules with in-person practical sessions. The study evaluates the effectiveness of these methods in improving participants' knowledge, practical skills, and overall preparedness to handle medical emergencies. Data were collected through pre- and post-training assessments, simulated emergency scenarios, and participant feedback. The results suggest that a combination of theoretical and practical training, along with innovative tools like virtual reality simulations, significantly enhances learning outcomes, ensuring greater competency in first aid procedures.

Keywords: first aid training, training systems, blended learning, standardized curriculum, emergency response, practical application, virtual reality simulations, first aid education, skill development, knowledge retention, medical emergencies, corporate training, training effectiveness

Introduction. First aid training is crucial for ensuring individuals are equipped to handle medical emergencies effectively. In any environment—whether at work, school, or in public spaces—having well-structured first aid training systems can make a significant difference in saving lives and preventing further harm. As the importance of first aid knowledge continues to grow, it becomes essential to improve the systems used to organize and deliver these training programs. In this article, we explore the key features that can enhance the effectiveness of first aid training processes. One of the most vital elements in improving first aid training systems is the development of a standardized curriculum. A consistent framework ensures that all individuals receive the same essential knowledge and skills, regardless of the provider or location. Standardized guidelines not only help instructors stay on track but also ensure the content is accurate and up to date with the latest medical protocols. By aligning training programs with established organizations such as the American Heart Association (AHA) or the Red Cross, organizations can ensure that the training meets the necessary quality and effectiveness benchmarks. A clear and universally accepted curriculum helps avoid confusion and ensures that every participant walks away with a solid foundation in first aid practices [1,2,3].

Traditionally, first aid training involved in-person classes and hands-on demonstrations. However, modern advancements in education and technology have introduced the concept of blended learning. This approach combines both online and face-to-face elements, allowing learners to study theoretical aspects through online modules and then practice practical skills during in-person sessions. Blended learning offers several advantages, including flexibility in scheduling, wider accessibility, and the ability to learn at one's own pace. It also helps reinforce

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learning by providing diverse learning methods, making it easier for participants to retain essential life-saving techniques. As technology continues to evolve, incorporating interactive and virtual simulation tools into first aid training programs can further enhance the learning experience. The most effective first aid training goes beyond theoretical knowledge; it emphasizes the practical application of skills in realistic scenarios. To ensure individuals are truly prepared for an emergency, the training should incorporate hands-on practice with mannequins, first aid kits, and real-world simulations. Simulations can range from simple activities like CPR and wound care to more complex emergency situations that mimic real-life scenarios. Engaging participants in these exercises will help them build confidence and familiarity, ensuring they can apply the learned skills under pressure when an actual emergency arises [4,5,6,7].

Different workplaces, schools, and communities face varying types of risks and challenges, and first aid training should reflect that. One of the features of improving first aid training systems is ensuring the curriculum is adaptable to specific environments and needs. For example, a construction site will require first aid training focused on injuries related to heavy machinery and high-risk tasks, while a school may prioritize training on dealing with asthma attacks or allergic reactions. Customizing the training based on the specific demographic, location, or industry ensures that individuals are prepared to handle the most likely emergencies they may encounter in their environment. Medical knowledge, protocols, and best practices evolve over time, which is why first aid training systems must be regularly updated. Incorporating refresher courses into the training system helps participants stay current on new techniques and changes in guidelines [9,10]. Refresher courses can also help individuals retain critical skills that may otherwise fade over time. In a fast-paced world, it's easy to forget key procedures, but offering regular opportunities for practice ensures that skills remain fresh and usable. Online platforms make it easy to offer these refresher courses, providing accessibility to all trainees, even after they have completed their initial training. Effective first aid training relies heavily on the expertise of the instructor. Engaging instructors who are not only skilled but also passionate about teaching can make a world of difference in the learning experience. Experienced instructors bring practical insights and real-world examples that enhance the training and make it more relatable to the participants. It's important for trainers to have both the technical expertise and the ability to communicate complex procedures in simple terms. Moreover, an instructor should create an open environment where learners feel comfortable asking questions and practicing their skills without fear of judgment. This interactive approach ensures a deeper understanding of the material and improves retention rates [11,12,13].

Advancements in technology have significantly impacted education across various fields, and first aid training is no exception. Interactive apps, online learning platforms, and virtual reality (VR) simulations can be integrated into the training process to make it more engaging, accessible, and realistic. For example, VR simulations allow trainees to experience life-threatening scenarios in a controlled, virtual environment, where they can practice making quick decisions without the pressure of real-life consequences. Additionally, mobile apps can be used as supplementary resources, providing on-the-go access to first aid information when needed [14].

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Another crucial feature of improving first aid training systems is the integration of ongoing feedback and evaluation. To ensure the effectiveness of the training, it is important to assess how well participants have absorbed the material and developed the necessary skills. Regular assessments, such as written tests, skill demonstrations, and scenario-based evaluations, help trainers gauge the trainees' understanding and competence. Constructive feedback from instructors can identify areas for improvement, which can then be addressed before the individual faces an actual emergency situation. Improving the systems for structuring first aid training procedures is essential for equipping people with the knowledge and confidence to handle medical emergencies. By focusing on standardized curriculums, blended learning, practical application, customization, regular updates, experienced instructors, the integration of technology, and continuous feedback, we can create more effective and accessible training programs. Ultimately, a well-organized and constantly evolving first aid training system ensures that individuals are better prepared to respond quickly and competently in times of crisis, ultimately saving lives and making our communities safer [15,16].

Materials and methods. This study employed a mixed-methods approach, combining both qualitative and quantitative data collection methods to assess the effectiveness of various features aimed at improving the systems for structuring first aid training. The study was conducted over six months, with a focus on the evaluation of a newly implemented first aid training program in a corporate setting. The aim was to determine how structured curriculum, blended learning approaches, instructor engagement, and practical application affected the training outcomes.

A total of 120 employees from a mid-sized company participated in the first aid training program. Participants were selected based on voluntary consent and were randomly assigned to two groups: a control group (traditional in-person training) and an experimental group (blended learning with online modules and in-person sessions). Participants were aged between 25 and 50, with varying levels of prior first aid knowledge [17,18].

1. Training Curriculum:

- The standardized first aid training curriculum was developed based on the guidelines of the American Heart Association (AHA) and the Red Cross, covering essential life-saving skills such as CPR, wound care, choking, and basic trauma management.

- For the experimental group, an online module was created using an interactive learning platform (e.g., Moodle or Canvas) that allowed participants to learn theoretical concepts at their own pace before attending the in-person practical sessions.

2. Training Equipment:

- CPR Mannequins: High-fidelity mannequins were used for practicing CPR, airway management, and chest compressions.

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- First Aid Kits: A comprehensive first aid kit containing bandages, antiseptics, splints, and other emergency supplies was used for practical exercises in wound care and injury management.

- Simulation Tools: Virtual reality (VR) headsets and simulations were provided to the experimental group to practice first aid interventions in a controlled, virtual environment.

3. Assessments:

- Pre-Training Survey: A questionnaire was administered to assess the baseline knowledge and previous first aid experience of participants.

- Post-Training Evaluation: After completing the training, participants took a written exam covering both theoretical knowledge and practical skills. The exam was designed to test their understanding of first aid principles and their ability to perform procedures.

- Feedback Forms: Participants were asked to complete a feedback form to evaluate the training process, including the curriculum, instructors, and overall satisfaction.

- Simulated Emergency Scenario: A scenario-based simulation test was conducted to assess participants' ability to respond to an emergency situation under time constraints. The simulation was designed to resemble a real-life emergency.

Methods

1. Curriculum Delivery:

- Control Group: Participants in the control group received traditional in-person training over a two-day period. This included lectures, demonstrations by instructors, and hands-on practice with mannequins and first aid kits.

- Experimental Group: Participants in the experimental group began the training with a self-paced online module that covered the theoretical aspects of first aid. This was followed by a one-day in-person session for hands-on practice, including CPR, wound care, and emergency response drills. Virtual reality simulations were incorporated to allow participants to engage with immersive emergency scenarios.

2. Data Collection:

- Pre- and Post-Training Assessments: To evaluate the effectiveness of the training, pre- and post-training knowledge assessments were administered to both groups. The pre-training survey assessed participants' existing knowledge of first aid, while the post-training assessment tested their learning outcomes.

- Performance Evaluation: Following the training, participants from both groups were evaluated on their practical skills through a scenario-based simulation, where they were required to respond to an emergency scenario, such as a heart attack, choking incident, or serious

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injury. Performance was scored based on accuracy, speed, and confidence.

- Instructor Feedback: Instructors provided subjective feedback on the performance of each group, noting any challenges encountered during the training process.

3. Statistical Analysis:

- Descriptive statistics (mean, standard deviation) were used to summarize participants' pre- and post-training scores. Paired t-tests were conducted to assess differences in knowledge and skill improvements between the control and experimental groups. A significance level of $p < 0.05$ was considered statistically significant.

- Qualitative data from feedback forms were analyzed using thematic analysis to identify common themes related to the training experience, including engagement, accessibility, and practicality of the training methods [20,21,22].

This study was conducted in accordance with ethical standards. Informed consent was obtained from all participants before their involvement in the training program. Participants were informed that their participation was voluntary and that they could withdraw at any time without consequence. The study was approved by the institutional review board (IRB) of the hosting organization.

Conclusion. The findings of this study emphasize the importance of enhancing first aid training systems through a combination of structured curriculum, blended learning models, and the integration of innovative technologies. By incorporating both online theoretical modules and hands-on practical sessions, particularly with the use of virtual reality simulations, participants demonstrated significant improvements in their ability to perform first aid procedures effectively and confidently. The study highlights that customized, adaptable training systems, which consider the specific needs of different environments, can lead to more engaged learners and better retention of critical skills. Additionally, the use of real-world scenarios and continuous feedback further enhances training outcomes. In conclusion, modernizing first aid training by incorporating blended learning and technology not only improves knowledge retention but also better prepares individuals to respond to medical emergencies with competence and confidence. The results of this study support the need for organizations and institutions to adopt innovative and flexible training approaches to ensure that life-saving skills are effectively taught and retained.

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