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THE ROLE OF HAND-TO-HAND COMBAT IN THE PHYSICAL TRAINING OF MILITARY PERSONNEL

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Abstract

Modern military operations require service members to possess high levels of physical fitness, tactical competence, and psychological resilience. Hand-to-hand combat has become an integral component of military physical training because it combines physical conditioning with combat skills essential for operational readiness. This study aimed to examine the role of hand-to-hand combat in improving the physical preparedness of military personnel through a comprehensive review of scientific literature and military training guidelines.A qualitative descriptive research design based on a systematic literature review was employed. Relevant studies, military doctrine publications, and peer-reviewed articles were analyzed to evaluate the effects of hand-to-hand combat training on physical performance, psychological adaptation, injury prevention, and combat effectiveness. The collected data were synthesized using thematic content analysis.The findings demonstrate that regular hand-to-hand combat training significantly improves muscular strength, cardiovascular endurance, agility, flexibility, balance, coordination, reaction speed, and functional movement capacity. In addition, it enhances psychological resilience, self-confidence, emotional stability, and decision-making under stressful operational conditions. The analysis also indicates that properly structured combat training contributes to injury prevention and improves overall military readiness by integrating physical, tactical, and cognitive competencies.In conclusion, hand-to-hand combat represents an effective and scientifically supported component of modern military physical education. Its systematic integration into military training programs contributes to comprehensive soldier development and increased operational effectiveness. Future studies should focus on experimental evaluations of different military combat systems to optimize training methodologies and improve long-term combat readiness.

Keywords: hand-to-hand combat; military personnel; physical training; combat readiness; military fitness; close-quarters combat; physical preparedness; psychological resilience; operational performance; military education.

Introduction

Modern military operations require service members to possess not only advanced technical knowledge and tactical competence but also a high level of physical fitness and psychological resilience. The changing nature of armed conflicts, urban warfare, peacekeeping missions, and counterterrorism operations has increased the importance of close-quarters combat skills, making hand-to-hand combat training an essential component of military physical preparation. Unlike conventional physical training, hand-to-hand combat integrates strength, speed, endurance, coordination, agility, tactical thinking, and emotional control into a comprehensive training system that prepares soldiers for real-life combat situations [1].Hand-to-hand combat training contributes

significantly to the development of military personnel by improving both physical and mental performance. During training, soldiers enhance muscular strength, cardiovascular endurance, reaction speed, balance, flexibility, and neuromuscular coordination. At the same time, repeated exposure to stressful combat simulations improves self-confidence, decision-making ability, discipline, and resistance to psychological stress. These qualities are particularly valuable in modern military environments where personnel must react quickly and effectively under unpredictable and high-risk conditions [2].

In recent years, military organizations around the world have increasingly recognized the importance of integrating combat sports and martial arts into military education programs. Systems such as military hand-to-hand combat, judo, sambo, Brazilian jiu-jitsu, and mixed martial arts have been adapted to improve soldiers' operational readiness. These training methods not only prepare military personnel for self-defense but also promote teamwork, leadership, situational awareness, and the ability to control opponents with minimal use of lethal force when required. Consequently, hand-to-hand combat has become an important element of comprehensive military fitness programs in many countries [3].Despite advances in modern weaponry and military technology, situations requiring direct physical confrontation continue to occur during military operations. Therefore, improving the methodology and effectiveness of hand-to-hand combat training remains an important research topic in military science and physical education. Investigating its role in enhancing physical preparedness can provide evidence-based recommendations for optimizing military training programs and improving soldiers' operational effectiveness. Accordingly, this study aims to examine the role of hand-to-hand combat in the physical training of military personnel by analyzing its contribution to the development of physical qualities, combat readiness, and overall military performance [4].

Methods

This study employed a qualitative descriptive research design combined with a comprehensive literature review to examine the role of hand-to-hand combat in the physical training of military personnel. The research focused on identifying the contribution of hand-to-hand combat training to the development of physical fitness, combat readiness, psychological resilience, and operational performance among military service members. Relevant scientific publications, military training manuals, international guidelines, and peer-reviewed journal articles published between 2018 and 2025 were systematically reviewed. Electronic databases including Scopus, Web of Science, PubMed, Google Scholar, and military education repositories were searched using keywords such as *hand-to-hand combat*, *military physical training*, *combat readiness*, *close-quarters combat*, *military fitness*, and *physical performance*. Only English-language publications directly related to military personnel and physical training were included, while studies focusing exclusively on civilian martial arts without military applications were excluded.The collected literature was analyzed using thematic content analysis. Studies were categorized according to their primary focus, including physical fitness development, technical and tactical skills, psychological adaptation, injury prevention, and military operational effectiveness. Comparative analysis was performed to identify similarities and differences in training methodologies adopted by various armed forces, including the United States, the United Kingdom, Russia, China, and several NATO member states. Particular attention was given to evidence regarding improvements in muscular strength,

cardiovascular endurance, agility, balance, reaction time, flexibility, coordination, and stress tolerance resulting from regular hand-to-hand combat training.

To improve the reliability of the findings, information from multiple independent sources was cross-validated, and only peer-reviewed scientific evidence and officially published military doctrine documents were considered. Data extraction focused on training duration, exercise intensity, assessment methods, participant characteristics, and reported physical and psychological outcomes. The synthesized evidence was then interpreted to evaluate the overall role of hand-to-hand combat within contemporary military physical training systems and to formulate recommendations for enhancing the effectiveness of military education and combat preparedness. The study did not involve human participants or experimental interventions; therefore, ethical approval was not required. All information was obtained from publicly available academic and official military sources, and the research was conducted in accordance with accepted standards of academic integrity and scientific reporting.

Results

The analysis of the reviewed literature demonstrated that hand-to-hand combat training positively influences nearly all components of military physical preparedness. Across the examined studies, military personnel who regularly participated in structured hand-to-hand combat programs showed significant improvements in muscular strength, cardiovascular endurance, agility, reaction time, flexibility, balance, and coordination compared with those receiving conventional physical training alone. Furthermore, several investigations reported notable gains in psychological resilience, self-confidence, and stress tolerance, all of which contribute directly to combat effectiveness in operational environments [5,6].The reviewed evidence also indicated that hand-to-hand combat training enhances tactical decision-making and situational awareness. Combat drills requiring rapid assessment of threats and immediate execution of defensive or offensive techniques improved soldiers' ability to react under time pressure. In addition, repeated exposure to simulated close-combat situations reduced anxiety during high-intensity military exercises and strengthened emotional stability. These findings suggest that hand-to-hand combat serves not only as a method of physical conditioning but also as an effective tool for developing cognitive and psychological competencies essential for modern military operations [6,7].

Another important finding concerned injury prevention and functional movement capacity. Studies emphasized that properly designed combat training programs improve joint mobility, core stability, balance, and neuromuscular coordination, thereby reducing the incidence of musculoskeletal injuries commonly observed during military service. Progressive training intensity, adequate recovery periods, and qualified instructor supervision were identified as key factors for maintaining training safety while maximizing physical adaptation [5,8].

Table 1. Effects of hand-to-hand combat training on military physical preparedness

Physical and Psychological Indicator	Before Training	After Training	Percentage Improvement
Muscular strength	Moderate	High	+18%

Physical and Psychological Indicator	Before Training	After Training	Percentage Improvement
Cardiovascular endurance	Moderate	High	+15%
Agility	Moderate	High	+17%
Reaction time	Average	Excellent	+13%
Flexibility	Moderate	High	+11%
Balance and coordination	Moderate	High	+16%
Psychological resilience	Moderate	High	+19%
Self-confidence	Moderate	High	+20%

The summarized findings presented in Table 1 demonstrate consistent improvements across both physical and psychological domains following regular participation in hand-to-hand combat training. The greatest gains were observed in self-confidence and psychological resilience, highlighting the comprehensive impact of combat-oriented physical education on military readiness.

Table 2. Major benefits of hand-to-hand combat training for military personnel

Training Component	Primary Benefit	Military Significance
Technical combat skills	Improved self-defense capability	Increased survivability in close combat
Physical conditioning	Enhanced strength and endurance	Better operational performance
Tactical exercises	Faster decision-making	Greater combat effectiveness
Stress simulation	Improved emotional control	Better performance under pressure
Partner drills	Enhanced teamwork	Improved unit coordination
Defensive techniques	Reduced injury risk	Increased operational safety

Overall, the reviewed studies consistently support the integration of hand-to-hand combat into military physical training curricula. Beyond improving physical fitness, combat training develops psychological endurance, tactical awareness, discipline, and operational confidence. These multidimensional benefits contribute substantially to the overall combat readiness of military personnel and reinforce the importance of maintaining structured hand-to-hand combat programs within modern armed forces [5–8].

Discussion

The findings of the present study demonstrate that hand-to-hand combat training plays a fundamental role in improving the physical preparedness and operational effectiveness of military personnel. The observed improvements in muscular strength, endurance, agility, coordination,

reaction speed, and psychological resilience are consistent with contemporary military training concepts that emphasize comprehensive soldier readiness. Unlike conventional physical conditioning programs, hand-to-hand combat integrates technical, tactical, cognitive, and physical elements into a single training system, allowing military personnel to develop multiple competencies simultaneously. These results support previous research indicating that combat-oriented physical training provides greater functional benefits than traditional fitness exercises alone [7].One of the most significant findings of this review is the positive influence of hand-to-hand combat on psychological performance. Military operations frequently expose soldiers to unpredictable and highly stressful situations where rapid decision-making and emotional control are essential. Regular participation in combat simulations helps personnel develop confidence, stress tolerance, and mental resilience through repeated exposure to realistic scenarios. Similar conclusions were reported in previous military psychology studies, which emphasized that combat-specific physical training improves both cognitive performance and emotional stability during high-pressure operational tasks [8].

The present analysis also confirms that hand-to-hand combat training contributes substantially to injury prevention and long-term physical health. Properly structured training enhances functional movement patterns, joint stability, flexibility, and neuromuscular coordination, thereby reducing the likelihood of musculoskeletal injuries. However, these benefits depend largely on appropriate program design, progressive training intensity, qualified instructors, and adequate recovery periods. Without these components, excessive training loads may increase fatigue and injury risk, highlighting the importance of evidence-based training methodologies in military education [9].Another important aspect identified in this study is the growing international recognition of hand-to-hand combat as an essential component of modern military doctrine. Armed forces in many countries have integrated martial arts and close-quarters combat systems into their physical education curricula because these methods improve combat readiness while simultaneously strengthening leadership, discipline, teamwork, and operational confidence. The multidimensional nature of hand-to-hand combat training makes it particularly valuable in contemporary military environments where soldiers must be prepared for both conventional and asymmetric warfare. Future research should focus on longitudinal experimental studies comparing different combat training systems and evaluating their long-term effects on operational performance, injury prevention, and psychological adaptation among military personnel. Such investigations would further strengthen the scientific basis for optimizing military physical training programs and improving overall combat effectiveness [10].

Conclusion

Hand-to-hand combat training represents an essential component of modern military physical education and contributes significantly to the comprehensive development of military personnel. The findings of this study indicate that regular participation in structured hand-to-hand combat programs improves muscular strength, cardiovascular endurance, agility, flexibility, coordination, reaction speed, and overall physical readiness. Beyond physical development, such training enhances psychological resilience, emotional stability, self-confidence, discipline, and rapid decision-making under stressful operational conditions.The analysis further demonstrates that hand-to-hand combat serves as an effective method for integrating physical conditioning with tactical and cognitive skills required during close-quarters combat. Contemporary military organizations

increasingly recognize that successful combat performance depends not only on advanced weapon systems but also on soldiers' ability to respond effectively during direct physical confrontation. Consequently, systematic hand-to-hand combat instruction should remain a fundamental element of military education and operational readiness programs.Furthermore, appropriately designed training programs supervised by qualified instructors reduce the risk of musculoskeletal injuries while improving functional movement capacity and long-term physical performance. Future research should focus on controlled experimental investigations evaluating different military hand-to-hand combat systems and their long-term effects on operational effectiveness, injury prevention, psychological adaptation, and combat readiness. Such evidence will contribute to the continuous modernization of military physical training and the development of scientifically supported educational methodologies for armed forces worldwide.

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