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Effect of Core Strength Training on Technical Skill Performance of Combat Sport Players: A Systematic Review

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 December 2023 and was last updated on 26 December 2023.

INTRODUCTION

Review question / Objective The purpose of this systematic review is to synthesize and analyze the existing literature, confirm whether core strength training has an impact on the technical performance of combat sports athletes, and provide suggestions and recommendations for future research directions for coaches and researchers.

Condition being studied The purpose of this systematic review is to synthesize and analyze the existing literature, confirm whether core strength training has an impact on the technical performance of combat sports athletes, and provide suggestions and recommendations for future research directions for coaches and researchers。A short description of the condition should be included in this section to help the readers to understand what is the health condition, disease of interest, etc.

METHODS

Search strategy By November 2023, consider using well-known academic databases to search for relevant literature, Includes SCOPUS, PubMed, Web of Science, EBSCO, Google Scholar(via EBSCOhost) databases and CNKI (note: Only core academic journals were searched) Strategic search queries by title and abstract for each individual database. The main keywords of relevant studies collected are :("Core Strength Training" OR "core-muscle Training" OR "Core training" OR" core-stability Exercise" OR "Core Exercise") AND("Athletic performance" OR "Technical skill*" OR "Skill*" OR "Technique" OR "Performance")AND("Combat sport" OR "Mixed martial arts" OR "MMA" OR "Boxing" OR "Kickboxing" OR "Judo" OR "Judoka" OR "Karate" OR "Taekwondo" OR "Wrestling" OR "Sanda" OR "Muay Thai" OR "Sambo" OR "Savate").

Participant or population Summarizes the characteristics of the 8 study participants who met

the inclusion criteria, as shown below. 1) Classification of fighting events. Of these 8 articles, two are about karate athletes and two are about boxers at the professional level (Zhang, Yinkai et al., 2023; Brown, Lee,2021); Two articles are about professional karate athlete Kamal, Omaima,2015; Amateur karate athletes (Kabadayi, M. et al.2022); The other four are about martial arts athletes (Hai Fan, Pang, 2023); Taekwondo athlete (Martins, Heloisa Schroeder,2019); Sanda athletes (Han Dong et al., 2013); Muay Thai Athletes (Benjamin Lee& Stuart McGill, 2017).

Intervention Shows several basic components of the intervention characteristics of this study, including intervention type, duration, and frequency. In the intervention mode, the core strength training is the main intervention means.

Comparator Random comparison.

Study designs to be included The data collected included: 1) the name of the author and the year of publication; 2) demographic characteristics such as the number of participants, their gender, age, and type; 3) details about the intervention, including its type, measurement index, frequency, and duration; 4) research findings.

Eligibility criteria PICOS model was used for literature retrieval. The acronym PICOS stands for the following concepts :1) population, 2) intervention, 3) comparison, 4) outcome, and 5) study design. The study used each PICOS factor as an inclusion criterion for retrieving publications. Studies must meet each of the following inclusion requirements: Table 1.1) The study population must include healthy athletes, regardless of gender or age.2) Core training should be isolated and clearly discussed, and the training period should be at least 5 weeks.3) The comparison in the study can be a single group trial or a multi-group trial.4) The findings must include the effect of at least one core training on skill performance in combat sport palyer.5) The article must be an experimental study, including a single-group trial or a randomized controlled trial.

Information sources Electronic databases.

Main outcome(s) Core training has significantly improved the technical performance of karate athletes, taekwondo athletes, Muay Thai athletes and female sanda athletes.

Quality assessment / Risk of bias analysis Two researchers extracted information from each study using a Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, United States), while a third researcher cross-checked the data for accuracy. The data collected included: 1) the name of the author and the year of publication; 2) demographic characteristics such as the number of participants, their gender, age, and type; 3) details about the intervention, including its type, measurement index, frequency, and duration; 4) research findings.

Strategy of data synthesis Two authors used the EndNote citation Management system to eliminate duplication when selecting articles suitable for inclusion in the criteria. They evaluated the titles and abstracts of the papers to determine which papers were likely to be included in the study. If two authors disagree on the selection of an article, they consult a third author to analyze the entire article and make a final decision. In order to ensure the originality of the article, they made revisions strictly in accordance with the real manual way, and controlled the length of the rewritten article within the error range of the original.

Subgroup analysis None.

Sensitivity analysis None.

Language restriction Only Chinese and English literature is included.

Country(ies) involved Malaysia (Faculty of Educational Studies, Department of Sports Studies, Universiti Putra Malaysia, Selangor, Malaysia).

Keywords "Core Strength Training" OR "core-muscle Training"...and"Athletic performance" OR "Technical skill*...and"Combat sport" OR "Mixed martial arts".

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