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Wills, Thomas; Maupin, Daniel; Orr, Rob Marc; Schram, Ben; Robinson, Jeremy; Irving, Shane; Dawes, James

Published: 07/04/2018

Document Version:
Publisher's PDF, also known as Version of record

Recommended citation (APA):

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Fitness Profiles in Elite Tactical Units: A Critical Review

Thomas Wills, Danny Maupin, Robin Orr, Ben Schram, Jeremy Robinson, Shane Irving, Jay Dawes

Background

Elite tactical units (ETUs) are at the forefront of national security and service. These units require their personnel to routinely perform at the highest level; above and beyond the expectations of civilians and regular tactical members. Fitness profiles are a collection of physiological measures employed for task specific abilities that have been demonstrated to predict quality performance in sport.

The physiological measures take into account the physical demands of operational tasks, and have been shown to be useful in the design of programs that address specific weaknesses in the fitness attributes, as related to occupational requirements. Fitness profiles may aid in the ETU selection process. For these reasons, this critical literature review will endeavour to identify, critically appraise, and synthesise key findings from the current body of knowledge around fitness profiles within ETU populations.

Method

- A two-tiered approach was employed to identify and include relevant studies to inform this review.
- Search bias was limited via use of broad search terms to capture all studies, while duplication bias was limited during the first step of screening by removing all duplicates.
- Two reviewers (DM & TW) independently and separately screened and selected the studies to limit selector bias and ensure an objective selection.
- Lastly, inclusion and exclusion criteria were established prior to screening; except for the inclusion criteria 'each study must contain a fitness measure', which was implemented partway through screening. The PRISMA chart outlines the search process in its entirety (Figure 1).
- All included studies were then critically appraised using a modified Downs and Black checklist.
- The level of interrater agreement was then calculated via Cohen’s Kappa coefficient (κ).
- The Critical Appraisal Scores (CAS) were finalized, by using the qualitative ratings proposed by Kennelly.
- The Kennelly system converts to a percentage-based score to enable comparable grading of the modified Downs and Black, with < 45.4% signifying ‘poor’ methodological quality, between 45.4% and 61.0% showing ‘fair’ methodological quality, and >61.0% demonstrating ‘good’ methodological quality.

Results

Due to the high variance in the outcome scores and measurement tests, the ability to effectively compare across studies was limited.

- Methodological quality was fair quality overall (57.5%±6.3%: range 46% - 68%).
- Studies were consistently given lower scores in the area of internal validity. A total of 11 studies focused on various military special force units, whilst 3 studies specifically studied Special Weapons and Tactics police.
- Methodological quality was fair quality overall (57.5%±6.3%: range 46% - 68%). The most common measures examined were anthropometric and aerobic capacity, in 79% and 71% of studies, respectively.
- The least common measures were agility and speed, recorded in only 14% and 21% of studies, respectively.

Discussion, Conclusion & Recommendations

- Though fitness is a critical part of research and practice, there is no standardized measure or result for this population. Further research needs to be done in the development of a fitness profile which uses standardized outcome measures and covers the spectrum of the fitness requirements for this population. This is important for the development of selection criteria and return from injury.

Key References


Figure 1: PRISMA Flow Chart showing the review and screening process of all articles