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The Use of Fitness Testing to Predict Occupational Performance In Tactical Personnel: A Critical Review

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Abstract:

PURPOSE: To identify, analyse and synthesise research studies that examined the correlation between fitness tests and occupational task performance in tactical personnel (police, fire, military).

METHODS: Search terms were developed based on relevant keywords. A list of preliminary studies was identified through a search of key databases (Pubmed, EMBASE, and Ebscohost [CINAHL and SportDiscus]). Duplicates were removed during the screening process, and inclusion and exclusion criteria were applied. Three authors (JS, TS, JM) evaluated study quality using a Critical Appraisal Skills Program (CASP) Cohort Study Checklist and Krippendorff's Alpha was used to determine inter-rater reliability by a fourth author (RO).

RESULTS: From an initial 1378 studies, 15 studies were included and critically appraised with their relevant study characteristics extracted and analysed. The means critical appraisal score for all studies was 8.4±1.2/12 ranging from 6.33 to 10.0. The Krippendorff's Alpha analysis showed the level of agreement among three raters were 80% (κ alpha=0.797). The most common fitness measures used in the study were muscular strength and aerobic capacity, followed by muscular power, anaerobic capacity, flexibility, and agility. Aerobic capacity was the most correlated fitness attribute with various occupational measures in nine of the 11 studies that included the measure.

CONCLUSION: A wide range of fitness tests are required to predict occupational performance in tactical populations. Aerobic capacity was the most strongly correlated fitness attribute with occupational performance. Other appropriate fitness measures included: muscular strength, endurance, and power; agility; and anaerobic capacity. Further research of standardised fitness tests and their relationship to specific occupational performance will assist with employment standard and training protocols for tactical populations.