RESEARCH SUMMARY

Physical Fitness Standards to Support Readiness and Deployability

An Examination of Department of the Air Force Policies and Culture

MIRIAM MATTHEWS, CARRA S. SIMS, SEAN ROBSON, MATTHEW WALSH, STEPHANIE RENNANE, JOSHUA SNOKE

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ISSUE

To ensure military personnel have the requisite physical fitness to serve, the Department of the Air Force (DAF) has established a variety of medical and physical standards. For example, the Tier 1 fitness assessment (FA) is intended to minimize health risks among airmen and support an "active lifestyle." It includes four component fitness scores: a 1.5-mile run or 2.0-kilometer walk, designed to measure cardiorespiratory fitness; an abdominal circumference (AC) measurement for body composition; and push-ups and sit-ups, which assess muscular fitness. This study focused on evaluating data relevant to the Tier 1 FA to determine whether FA components meet their intended purpose to minimize health risks and maximize readiness of airmen.

APPROACH

To examine fitness, we analyzed extracts from the Air Force Fitness Management System that contained complete data from all U.S. Air Force (AF) FAs completed by active duty officers and enlisted personnel from fiscal year (FY) 2005 to FY 2018. To explore the relationship between component fitness scores and career outcomes, we derived variables from the Military Personnel Data System and other Air Force Personnel Center data sources (i.e., administrative data sources routinely collected and used for unit and service member accountability and promotion management). To explore the relationship between component fitness scores and health outcomes, we integrated Defense Health Agency databases from the Military Health System Data Repository to create an analytic file of health outcomes that provides a picture of all health care received in inpatient and outpatient settings at both military treatment facilities (MTFs) and outside of MTFs (derived from TRICARE claims data). We also examined perceptions of the DAF's culture of fitness by conducting 35 semi-structured telephone interviews with DAF active duty officers and enlisted personnel in squadron types of interest to the sponsor.

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CONCLUSIONS

AF-FA Components Are Associated with Positive Effects for Career and Health

Looking at the relationship between AF-FA components and career outcomes, we found the following:

- Although the average body mass index (BMI) of airmen has increased from FY 2005 to FY 2018, waist-to-height ratio, a different measure of body composition that may be more suitable for fit populations, has decreased. Additionally, the average aerobic and muscular fitness of airmen have increased. These results suggest that airmen fitness has improved over time.
- Multiple fitness components are positively associated with annual retention and physical eligibility for deployment, and the strength of association is greatest for aerobic fitness, as assessed by the 1.5-mile run.
- Likewise, multiple fitness components are positively associated with early- and mid-career outcomes, and the strength of association is again greatest for aerobic fitness.
- These associations span multiple years: Fitness in the very first year of service (YOS) predicted annual and career outcomes over the first ten YOS.

Next, in terms of the relationship between AF-FA components and health outcomes, our results showed that

- AC and the 1.5-mile run are important components for reducing the risk of different health diagnoses.
- Sit-ups and push-ups were also associated with health outcomes, but they were not as strong or consistent as that of the 1.5-mile run.
- The relationship between fitness and injury diagnoses was inconsistent.

Perceptions of the Fitness Assessment and the Broader Culture of Fitness Are Mixed

We also sought to examine airmen's perceptions of current fitness policies and the culture of fitness across the DAF. Overall, our interview results suggest that

- Interviewees do not understand why they must complete the AF-FA or why any of the AF-FA components have been included in the assessment.
- There is a great deal of variability in perceptions of the AF-FA and its components, with some perceiving the standards as too strict and others perceiving them as too lenient.
- Interviewees indicated that finding time to exercise is a barrier to fitness, and they proposed that providing time during the duty day to work out and regular unit physical training could assist with addressing this barrier.

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RECOMMENDATIONS

Drawing from our results, we provide several recommendations to improve the rationale for and the validity and acceptance of the AF-FA:

- Ensure airmen understand why they are required to complete the AF-FA and the purpose of each of its components.
  - Consider whether and how to provide information to airmen and guardians about their predicted health-related risks based on their AF-FA scores.
- Continue measuring, recording, and reporting AC data.
- Promote a culture of fitness through leadership support for physical fitness activities during the workday (i.e., physical training duty hours).
  - Consider rewarding units that regularly engage in physical activity, rather than focusing on providing incentives that are based on AF-FA scores.

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