

From research to red tape - the challenges in implementing fit for duty programs amongst emergency management agencies

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ABSTRACT

Fit for duty programs are becoming increasingly prominent within the Australian and international emergency management sector. The physical fitness of workers in physically demanding roles is an important element within the broader occupational health and safety strategy. A growing body of evidence continues to mount on best-practice fit for duty practice. It is becoming increasingly apparent the value of robust methodologies and validation techniques to produce fit for duty tests which are legally defensible and specific to each organisation. However, despite increases in the knowledge of evidence-based strategies for fit for duty design and implementation, there remains a reluctance for organisations to utilise such knowledge. Here, we explore the reasons why such a reluctance exists and the current barriers to scientifically-backed fit for duty programs. Specifically, we explore the complications with the knowledge repositories, the effects of organisational structure, and the communication processes which currently exist between emergency management agencies and research bodies. Finally, we discuss the role of perceived organisational barriers, including: time, resources, capital, and obligations to meet ambiguous health and safety targets. With these issues explored, we expand on the role that individuals, departments and organisations can play in improving the utilization of fit for duty research. Concurrently, we critique the current limitations of research institutions and the dissemination of fit for duty knowledge. When all parties in the research continuum are properly aligned, organisations can implement fit for duty programs that will improve the health and safety of their workforce, assist with compliance obligations and boost workplace productivity.

INTRODUCTION

In the Australian emergency management sector, access to the right knowledge is critical in preventing and controlling natural hazard incidents. Beyond the internal knowledge generated from training and peer to peer communication, there is no shortage of external information for emergency personnel to access. This includes a host of online repositories such as the Australian Disaster Resilience Knowledge Hub, the Australasian Fire Authorities & Emergency Council (AFAC), the Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC), and the Australian Journal of Emergency Management and Emergency Management Victoria (EMV). The important question is not whether there exists sufficient knowledge to inform emergency management personnel, but whether this information is being effectively utilised. Knowledge utilisation is a growing field of research amongst academic institutions, government organisations, and industry end users. Increasingly, we are becoming aware of the gap that exists between research and practice. The Australian Government is currently investing considerable resources into knowledge utilisation through its flagship program, the National Innovation and Science Agenda (NISA, 2015). There are also many other governing bodies and research institutes that have addressed the issue of knowledge utilisation, providing an array of recommendations to bridge the research-practice divide. These include increased research-industry collaboration (Farand & Arocha, 2004), increased peer to peer interaction (Dawes & Sampson, 2003; Parboosing, 2002), greater investment into repositories (Nguyen & Pham, 2011), and developing appropriate 'knowledge adoption' frameworks (Ward et al., 2006).

The current paper discusses issues of knowledge utilisation in the context of fit for duty, an evolving field of research within the emergency management sector. We define fit for duty as the capacity of workers to meet the physical demands associated with occupational roles (Roberts et al., 2016). Fit for duty programs represent an occupational health & safety strategy, complimentary to other strategies such as workplace education, workplace design (ergonomics), manual handling training, drug and alcohol screening, health and wellness programs, rehabilitation, and return-to-work practices. Fit for duty presents an important and powerful resource for employers to make decisions regarding who to hire, discipline, or terminate; they are expressions of contractual freedom which influence workplace rules, policies, and working conditions (Adams, 2016). Subsequently, developing appropriate fit for duty tests is of great importance. The tests themselves are founded on a particular scientific process, owing to many of the physical sciences, including exercise physiology, ergonomics, functional anatomy, and biomechanics. Scientists have made considerable advancements in the methodologies relating to fit for duty procedures in the previous decade, where tests, and their associated standards, are now modelled on a number of frameworks developed by prominent researches in Australia and abroad (Jamnik et al., 2012; Payne and Harvey, 2010, Taylor & Groeller, 2003; Tipton et al., 2012).

There is no shortage of access to peer-reviewed information relating to fit for duty. There are several hundred journals, both open access and non-open access, which house research related to fit for duty. Prominent journals include the *European Journal of Applied Physiology*, *Applied Ergonomics*, *Ergonomics*, *Military Medicine*, *International Archives of Industrial Ergonomics*, *International Archives of Occupational and Environmental Health*, and *Applied Physiology, Nutrition and Metabolism*. Such is the scope of fit for duty research, there are often entire

journal issues dedicated to this field. Beyond peer reviewed journals, there are conference proceedings from a host of fit for duty specific international conferences which are held annually or biannually, including the *International Conference on Physical Employment Standards* and the *International Congress on Soldiers' Physical Performance*.

Despite the ease of access to evidence-based research, fit for duty testing amongst emergency management organisations often deviates from what is considered 'best practice'. A host of agencies still utilise inappropriate tests, which are not founded on evidence-based research. A salient example is the common use of the multistage run test, which assesses cardiorespiratory fitness (Ramsbottom et al., 1988). Research shows that the use of the multistage run test is inappropriate for many policing and firefighting organisations, since endurance tests performed in clean skin conditions are poor predictors of performance of tasks in which personnel wear external load (Bilzon et al., 2001). However, many Australian responder agencies continue to utilise the multistage run test for both recruitment and ongoing selection procedures (e.g., CFA, 2017; DFES, 2017; TFS, 2017). In this paper, we examine the research to practice nexus that exists for fit for duty, and why there is often a mismatch between evidence-based practices and real-world practices. We focus on the barriers presented by both research organisations and emergency management organisations, with special attention brought to responder agencies within Victoria, Australia. The barriers discussed are reflective of the experience of the authors, working in a host of industries which utilize fit for duty practices. We have contextualized these barriers with literature which supports cases where these barriers are prominent. In total, we have identified five key barriers, including: (1) information dissemination, (2) education (3) legislation complexities, (4) staff responsibilities, and (5) time and cost. A brief commentary is provided on each barrier.

BARRIER 1 - INFORMATION DISSEMINATION

In the context of applied research, information sharing is a complex and fluid process between researcher and end user. When simplified, this process of information sharing can be represented as push-pull dichotomy (Kerner et al., 2005) where each party has one primary responsibility. It is the responsibility of the researcher or practitioner to 'push' information to the end-user, and it is the responsibility of the end-user to 'pull' the information from the researcher or practitioner in return. One of the key features which inhibits information flow in the context of fit for duty is the prevailing medium in which researchers choose to 'push' their work: peer-reviewed journal articles. Owing to the 'publish or perish' culture within research institutes, research has shown that in many cases the main reason academics publish their work is to boost their research impact (Swan, 2006; Ware & Mabe, 2012). Researchers are motivated to produce peer-reviewed articles as a priority (when compared to other forms of publication), since funding and career progress are contingent upon it (Ware and Mabe, 2012). Although it is often anecdotally recognised that efforts need to be made to change the medium of communication (i.e. alternative formats to journal articles), academics are not incentivised to do so because this falls outside of the scope of their key performance indicators. Thus, researchers may not view knowledge sharing as part of their role, and may feel that they lack the skills to communicate their research to non-academics (Tsui et al., 2006).

Generally speaking, journal articles are a poor medium from which to communicate information to end users. It has been reported that half of academic papers are read only by their authors,

reviewers, and journal editors (Eveleth et al., 2014). In fact, the information contained in journal articles may actually deter many readers, as the articles impose large time periods to read, and often the reader doesn't have the necessary skills to appraise and understand the information (Grimshaw et al., 2012). Although efforts are being made in Australia to change career incentives pertaining to publication records (ARC, 2016; EIA, 2014), such changes are still a long way off becoming mainstream. Until a time where academics are rewarded for producing end-user-friendly mediums to communicate fit for duty research, the majority of communication will continue to reside within journal articles. In doing so, the divide between fit for duty knowledge and practice is likely to expand, unless intervening actions are taken to address the breakdown in communication via ineffective mediums.

BARRIER 2 - EDUCATION

Despite the developing body of knowledge relating to fit for duty, the issue itself is still poorly understood by many within the emergency management sector. Consequently, several misconceptions still exist, many of which relate to the breakdown in communication between researchers and end users previously noted. It is also true that poor education applies to the definition of fit for duty itself. In many professions, the term has much broader connotations than job-specific physical fitness, and for many employers and managers, their understanding of the term differs from the strict confines of what we refer to in the context of job fitness. From an agency perspective, it is important that staff become aware of the specific nature of fit for duty when discussed in the context of physical fitness. This aligns with the 'push' responsibility of researchers to ensure no ambiguity is inherent in the fit for duty terminology, and the need for ongoing communication between researcher and end user.

It is also the case that fit for duty has also been associated with more generic types of occupational screening. The most common example is the pre-employment medical test, in which medical staff assess employees on generic health measures such as blood pressure, blood sugar, cholesterol, body mass index, and lung function (Schaafsma et al., 2016). It should be understood by emergency management personnel that these measures differ from fit for duty tests, as they do not relate to the 'duty' itself. Instead, they provide holistic measures of employee health. While many organisations describe fit for duty in the context of pre-employment medical checks, such descriptions are inaccurate and should not be considered a true test of occupational fitness.

Perhaps the greatest misconception relating to fit for duty testing is the misnomer that tests discriminate against certain populations, such as women, older personnel, or smaller individuals. A common strategy amongst military and emergency service organisations is to scale the cut-scores on physical tests to accommodate sex, age, and sometimes rank (Kenny et al., 2016). A recent commentary by Petersen and colleagues (Petersen et al., 2016) utilised a series of empirical studies to reject the notion that agencies should scale fit for duty standards based on the age or sex of the person undertaking the test. Such procedures are considered inappropriate and would be contentious in many jurisdictions. As commented by the authors, "assuming that the force application and energy demands of a task are sex-neutral, the logic of lower physical fitness for work standards for females is untenable." (Petersen et al., 2015). The same principle applies to workers of different ages and ranks.

Another misconception with fit for duty testing is the notion that organisations with similar job roles can use the same tests. A common example amongst policing and firefighting agencies is the adoption of physical testing procedures from other agencies that have implemented a validated fit for duty test. The Physical Aptitude Test (PAT) developed by Fire and Rescue New South Wales, in conjunction with the University of Wollongong (Groeller et al., 2015), is a prominent example of test adoption in Australia. Since the PAT was endorsed as a valid fit for duty test in 2015, other firefighting agencies, both within New South Wales and other states / territories, have adopted the test (or components of the test) on the premise that the test is valid for their firefighting population (e.g., MFB, 2017; QFES, 2017). Such adoption is inappropriate, as tests need to be validated for each organisation individually, regardless of similarities between job roles (Petersen et al., 2016). Recycling of tests can only occur with the appropriate comparison of job tasks and the necessary analyses which liken the adopted tests to new job roles (Petersen et al., 2016). Even though job roles may share common traits, often there are individual tasks which are unique to each organisation. Such tasks need to be considered in relation to test development, which is why testing adoption does not always align with organisations' precise job roles. Misconceptions around the discriminatory nature and test adoption, in addition to many other misconceptions, may result from poor education relating to fit for duty programs. Improving the education of end users would eliminate some of the resistance which is often associated with such programs.

BARRIER 3 - LEGISLATION COMPLEXITIES

Fit for duty testing, when attentive to human rights and diversity, plays an important role in the creation of safe, just, and equitable workplaces (Adams, 2016). However, how these programs relate to human rights and diversity laws can be complicated. Within Australia, fit for duty testing is governed by several Commonwealth and state / territory legislations. The Commonwealth legislation includes the *Fair Work Act 2009* (Cth) (Fair Work Act) and any industrial agreements made pursuant to the Fair Work Act. The state / territory legislation includes a mix of general workplace legislations as well as local organisational Acts. In Victoria for example, the legislation includes the *Equal Opportunity Act 2010* (Equal Opportunity Act) and the *Occupational Health and Safety (OHS) Act 2004*, in addition to responder agency legislation (e.g. *Metropolitan Fire Brigade Act 1958*, *Victoria State Emergency Service Act 2005* and *Country Fire Authority Act 1958*). Further to each respective legislation, enterprise agreements govern the provisions around workplace health and safety initiatives such as fit for duty. The interplay between the relevant legislation makes for a complex and often confusing system. To use another Victorian example, The Fair Work Act does not prevail over the Victorian OHS Act or the Equal Opportunity Act; any enterprise agreement established under the Fair Work Act is subject to the OHS Act and Equal Opportunity Act. At the same time, when in conflict with a clause in an enterprise agreement, most Victorian responder agency and emergency management legislation will be subordinate to the enterprise agreement.

Without validated fit for duty tests, agencies are potentially liable under anti-discrimination and OHS legislation. If there is a demonstrated need to introduce fit for duty policies to mitigate significant OHS risks, a responder agency would be able to do so under the OHS Act. However, in Australia, fit for duty tests have not figured prominently in discrimination case law to date. This lack of legal challenge may add to the uncertainty surrounding fit for duty policy implementation. Differences in how legislation is interpreted, and opinions on strategies to

mitigate OHS risks, may lead to internal organisational disputes which could delay fit for duty policy implementation. Disputes may also escalate into legal challenges, which further impose time barriers to implementation. The precedent has, however, been set in other common law jurisdictions such as Canada (see for example, British Columbia [Meorin Greivance case], 1996), which demonstrate the largescale changes that have ensued from legal challenges to invalid fit for duty programs. In the recent commentary by Adams (2016), the author suggests that there is no reason to think that fit for duty testing will not be the subject of future legal challenge in Australia.

BARRIER 4 - STAFF RESPONSIBILITIES

Emergency management agencies are large, complex systems containing a diverse mix of staff roles, units, divisions, and working groups. Fit for duty programs can be the responsibility of various staff from health and safety divisions, human resources divisions, legal divisions, capability divisions, training and deployment divisions, and accounting / finance divisions. For staff tasked with implementing a fit for duty program, there is often limited full time employment (FTE) allocated to such projects. Consider, for example, staff involved in health and safety roles, who are often charged with the development and administration of fit for duty programs. To these staff, fit for duty only constitutes a small portion of their broader health and safety remit, which includes a host of programs related to workplace design, hazard identification, workplace injury analysis, return-to-work strategies, health check programs, exercise programs, and nutrition programs. Using the State Emergency Services (SES) as an example, the health and safety staff are responsible for: (i) workplace safety, (ii) risk and hazard assessment, (iii) building resilience, (iv) clinical support, early intervention, health checks, compliance and reporting, and health and wellbeing (SES 2015-2016 Annual Report). When fit for duty is then added to the workload, it is reasonable to assume that little time is left to ensure that appropriate resources are allocated to these programs.

The dilution of staff resources can compromise the quality of each project and inhibit communication between units / divisions within an organisation, as well as between the organisation and external providers (i.e. research partners). If only small portions of FTE are allocated to fit for duty projects, the projects are drawn out over a longer time period than necessary. As a result, projects such as fit for duty can lose their momentum, resulting in wasted time, money, and human capital. It is incumbent on employers to ensure that fit for duty programs are allocated the necessary staff, time, and resources to enable their effective delivery and implementation.

BARRIER 5 - TIME AND COST

To implement scientifically robust tests, practitioners and end users need to adhere to a strict research process, which can take months or years to complete. As demonstrated by the implementation of successful fit for duty programs within the Australian Army (Australian Army, 2015) and Fire and Rescue New South Wales in 2015 (Groeller et al., 2015), tests can take up to five years from inception to full implementation. Such a timescale is understandably unattractive to many employers. To ensure faster delivery of fit for duty programs, organisations may place unrealistic, arbitrary deadlines on projects (e.g. completion within 6 months, 12 months or by December 31st). When projects are performed under these confines

and not allowed to occur organically, the research process may be compromised and quality, evidence-based fit for duty tests may not eventuate.

Much like time, money is considered another barrier to the implementation of adequate fit for duty programs. Employers want to know that investment into these programs will yield financial returns. When considering the economic value of health programs, there is no shortage of research demonstrating the benefits on work performance, productivity, absenteeism, and employee health risk (Mills et al., 2007; Østerås & Hammer, 2006; Pronk et al., 2014; van Dongen et al., 2011). Previously, the return on investment from health programs has varied from \$1.40 to \$10.10 for every dollar invested (Aldana, 2001; Goetzel et al., 1999; van Dongen et al., 2011). The problem, however, is that these numbers result from more generic forms of health programs, such as pre-employment screening, health checks, and functional movement screening. When considering fit for duty specifically, there are far fewer cases reported on the economic returns. Longitudinal studies have yet to formally document the economic benefits within the Australian, or indeed the international, emergency management sectors. Although economic benefits have been reported amongst alternative industries (Harbin & Olsin, 2005; Kalkan and Bunch, 2006), there remains a void in the emergency management sector. Consequently, employers may be reluctant to invest in fit for duty programs as there remains uncertainty in the precise long term fiscal benefits.

CONCLUSIONS

Knowledge utilisation is an important tenet of effective emergency management operations. Efforts need to be made to ensure that personnel within the industry are utilising the most effective and up to date knowledge arising from research institutions. Fit for duty is a prime example of the mismatch between evidence-based practice and real-life practice. If developed properly, fit for duty tests can create a healthier and safer working population, whilst improving business compliance and safeguarding organisations against litigation. In Australia however, many responder agencies are utilising fit for duty programs, or components of programs, which do not reflect best practice. This review provides a brief commentary on some of the possible causes as to why this situation exists. The inherent barriers within the research-to-practice nexus have been explored, including information dissemination, education, legislation complexities, staff responsibilities, and time/cost. By understanding these barriers, researchers, practitioners, policy makers and end users can explore options in order to minimise the effect of each barrier, thus promoting a more evidence-based fit for duty culture within the emergency management sector.

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