Rural and Remote Health
MEDLINE listed
Impact factor 0.878
The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy
ISSN 1445-6354

PERSONAL VIEW

# Contribution of military psychology in supporting those in rural and remote work environments

**CL Deans[1], EL Little[2]**

[1]*Victoria University, Melbourne, Victoria, Australia*

[2]*Private practice, Melbourne, Victoria, Australia*

***Submitted:*** *2 August 2015;* ***Revised:*** *17 March 2016;* ***Accepted:*** *31 August 2016;* ***Published:*** *5 October 2016*

**DeansCL, Little EL**

**Contribution of military psychology in supporting those in rural and remote work environments**
***Rural and Remote Health*** **16: 3678. (Online) 2016**

**Available: http://www.rrh.org.au**

## ABSTRACT

**Context:** This article explores the relevance of the body of military psychology knowledge to the management and support of those living and working in rural/remote industries and locations, particularly within Australia.

**Issues:** For those who live and work in rural/remote settings, there are social, occupational, health and environmental challenges. Some of these are shared with families and individuals who are associated with military life. The published literature on the shared attributes between military and rural/remote work environments rarely makes a direct link. However, looking at both areas suggests opportunities for the application of psychological knowledge in the well-developed field of military psychology to the rural/remote setting. This article focuses on application of psychological knowledge in the areas of occupational performance, fatigue, mental health, family care and in the training of psychologists to work in rural/remote areas.

**Lessons learned:** The cross-pollination of knowledge between those working with military personnel and family and those working in rural/remote settings should allow practitioners greater opportunities to improve health and wellbeing outcomes in these communities.

**Key words:** Australia, clinical psychology, fly-in fly-out workers, high-risk occupations, mental health, military psychology, rural and remote psychology.

## Context

Approximately one-third (31%) of Australians face social and psychological challenges related to living and working in rural (29% of the population) or remote (2% of the population) environments[1]. People residing in sparsely populated or isolated environments can experience a contextually unique impact on mental health, and access to health care can be qualitatively or quantitatively reduced compared to urban

populations[2]. They and their families have lower social support from friends and family, as well as fewer opportunities for recreational pursuits[3]. Remote workers are more likely than the general population to work non-standard hours, under difficult environmental conditions, and to commute regularly. The health workers who support this population, therefore, have needs related to this context. Many of Australia's industries (eg mining) involve rural, remote, fly-in fly-out, or challenging work environments, a testament to the need to continue to support these client and helper groups[4].

Challenging occupational environments involve extreme physical conditions that also contain the potential for danger to life and traumatic exposure[5]. When at work in a remote environment, personnel are highly likely to work significantly longer hours, for more days in the week, than at home[6]. This means that the potential for workload and other occupational stressors increases. Locating into and out of a work-intensive environment also has an impact, something shared by the nation's now large population of fly-in fly-out workers. Relatively little research exists on this workforce[7,8]. Rapid changes in work–life environment disrupt a worker's motivation for the job, retention in the workplace and their mental health[9,10]. And while the level of sophistication in recruitment and the psychological training involved to maximise wellbeing in workers varies markedly[11], there is no selection criteria or training program for the families of rural/remote workers.

There should be a concerted effort to share information between professions that supports these types of living and working contexts. Sharing many attributes of a rural/remote lifestyle is the one imposed on members of the Australian military. Shared attributes include mobility of the job, varied and unpredictable working hours, and physically intense work, and the concomitant impact on physical and psychological wellbeing[12]. This article argues that the military client group and the health workers that support them face similar challenges and have developed interventions or approaches that it would be of benefit to share.

## Issue: how a military lifestyle compares and military research may help

With nearly 100 000 members of the Australian Defence Force[13], the force is a prominent and well-acknowledged 'challenging' or 'distance' work environment. For this reason, the military has a well-established reliance on psychologists to select, train and psychologically maintain its force. It is well known that the inception of psychological testing for job selection occurred within the military during the First World War[14]. For a time the transfer of military knowledge to the civilian field was rapid. We suggest that in the contemporary workforce, far less application of military psychological practice occurs in selection, performance, health, safety and lifestyle matters.

Military psychologists work within a specific climate and cultural context that challenges the application of psychological strategies and encourages innovation. The military is a team-intensive work environment, contains significant chronic stressors (interpersonal, environmental and psychological), requires a focus on psychological hardiness and a performance-based culture. Some other psychological factors include mobility of the job, varied and unpredictable working hours, and regular physically intense work. All of these ecological factors impact on mental health, performance, human factors, leadership and teamwork[15-17]. There are many areas of potential overlap and the following sections will describe three of the more well researched and most contextual: human factors in high-risk occupations; management of the fly-in fly-out work lifestyle and professional competence for remote health workers (in particular, psychologists).

### *Human factors*

The first area of commonality is in the field of human factors, the study of humans as components of complex systems made up of people and technology. Human factors research is now well established in some occupations, especially those at the highest risk end of the spectrum, such as mining[18]. Introduction of new technology and more stringent safety

procedures reduces risk, but recent researchers have pointed to the need to more thoroughly implement human factors or systems approaches to address the high rate of human factors associated with accidents[19].

The relationship between human operators and their weapons and communication systems is a critical one in the safe use of potentially lethal force[20]. The aviation and transport industries have seen the largest transfer of military knowledge into the civilian realm, particularly in the use of threat and error management (TEMS) and fatigue risk management systems[21]. More lateral application remains rare. Recently the author of TEMS has led a move to transfer a threat/error model into the medical profession. Other researchers have applied the Human Factors Analysis and Classification System, developed within the United States military, to mining operations[22]. Another contemporary research development is in the area of situation awareness, an operator's ability to hold in working memory a number of moving parts in a dynamic system[23]. In the military this may apply to the soldier on foot patrol or the pilot operating an aircraft. Situation awareness has been shown to be equally as useful in reducing accident rates in challenging civilian work environments, such as offshore drilling crews[24].

An obvious current focus, particularly for fly-in fly-out and roster-based workers, is the management of sleep cycles and fatigue due to environment and time factors. Recent military research makes use of physiological monitoring devices such as wrist-watch technology to monitor heart rate, skin and core body temperatures[25]. This allows for supervisors to manage and plan for hydration needs, work–rest cycles, work strain constraints, and reduce the likelihood of environmentally related injuries such as heat stroke. Monitoring technology appears to be a rapidly growing industry relevant to civilian shiftwork, fly-in fly-out and physically challenging work environments[26].

Finally, the care of personnel in high-risk environments suggests a preparedness to care for mental health in the case of critical or potentially traumatic incidents. Military psychologists necessarily prepare workers for exposure to trauma and work to build resilience[27]. Multiple models of critical incident support in a military environment exist, and acknowledge the often isolated nature of the workers involved. For example, some interventions make use of strong team cohesion (both task and social cohesion) to buffer against negative reactions[28,29]. Some make use of peers to provide both workplace and social adjustment to an unfamiliar living environment[30]. Much research has been conducted on the importance of leadership in remote work environments. Leadership has been proven to protect against mental health problems under traumatic conditions, and it reduces stigma in work environments that value hardiness (and thereby can tend to increase mental health stigma)[31,32]. Preparation, expectation and a sense of group effectiveness also increase resilience[33].

### *Managing an itinerant workforce*

The second area of commonality is related to the domain of psychological adjustment to the chosen lifestyle. Military exercise and deployment is a time of physical, social, emotional and psychological change for a member. Whilst deployment may be for extended periods, many military personnel engage in continuous short exercises, courses and temporary assignments away from their home location. Such work schedules therefore resemble a fly-in fly-out workforce in many ways. A number of theoretically driven psychological processes commonly occur. There are considered to be four basic stages of adaptation to a different long-term work environment and each stage carries different levels of risk in regards to error rate, safety and psychological wellness[34]. Moving in and out of this cycle is something for which relatively little research exists, but now applies to a large section of the population. This disruption impacts the worker's happiness with the job, their retention in the workplace[35], and potentially their mental health[8,36]. The literature on the deployment cycle suggests that cognitive flexibility is the key indicator of a person's ability to manage the culture shock cycle appropriately[37]. Recent military research along with civilian research provides substantiation to that claim[38,39]. Military research also suggests that a sense that the organisation has the worker's wellbeing in mind can

impact a person's ability to deal with a home–away adjustment cycle[6].

### *Training the remote healthcare profession*

There is a government focus on the development of higher levels of health care in the rural/remote areas of Australia[40], and much research demonstrates the barriers to physical and mental healthcare provision in those areas[41-43]. The focus on telehealth and other internet-based options is strong in both civilian and military research[44,45]. Less research looks at the barriers to working in remote settings for the health profession. Some recent research looked at the knowledge, skills and attitudes required of remote and rural psychologists[46]. They considered the following rural-specific competencies:

- a diverse knowledge base as well as a good knowledge of one's limitations of practice. They refer to this as being a 'generalist-specialist'
- technology, networking and multidisciplinary relationship building skills, including the ability to treat the community as a whole as well as individuals.
- ability to set boundaries, strategies for managing boundary crossings, and an ability to compartmentalise
- a higher emphasis on self-care skills.

Other Australian and international researchers concur that the issue of ethics and boundaries is prevalent, and more prominent, in rural settings[47-49]. In small communities, a healthcare provider interacts with workers as professional, friend and community member[50].

A number of these issues have been addressed in the military healthcare training model, particularly in the supervision and training of military psychologists. Dual relationships and boundary crossings are par for the course in a small, deployed unit with only one doctor, psychologist or nurse. The health provider has two clients – the organisation and the individual – each with sometimes competing demands, and clients who often refer under coercion[51]. Military health workers sometimes report greater pressure than civilian workers to engage in dual relationships[52]. The development of models of practice based on boundary crossings versus boundary violations and of navigation of the dual-client workload[53] would help the rural workforce.

## Lessons learned

In the rural/remote workforce in Australia, particularly in the fly-in fly-out work environment, the application of psychology to manage worker wellbeing, improve human systems performance and support work–life balance is yet to be fully exploited. Training leaders in a proactive approach to the management of human systems may result in lower rates of separation from such environments. In the fields of clinical, organisational and human systems psychology, military research has much to offer outside of its current application.

## References

**1**. Australian Bureau of Statistics. *Australian demographic statistics, June 2010.* Cat. no. 3101.0. Canberra: ABS, 2010.

**2**. Paliadelis PS, Parmenter G, Parker V, Giles M, Higgins I. The challenges confronting clinicians in rural acute care settings: a participatory research project. *Rural and Remote Health* (Internet) 2012; **12:** 2017. Available: www.rrh.org.au (Accessed 23 September 2016).

**3**. Lovell J, Critchley J. Women living in a remote Australian mining community: exploring their psychological well-being. *Australian Journal of Rural Health* 2010; **18(3)**: 125-130. http://dx.doi.org/10.1111/j.1440-1584.2010.01143.x

**4**. Connell J, Duffy-Jones R. Twenty-first century rural Australia. In R Duffy-Jones, J Connell (Eds). *Rural change in Australia: population, economy, environment*. Farnham, England: Ashgate Publishing, 2014.

**5**. Adler AB, Keane TM, Bliese PD. Measurement of posttraumatic stress disorder in an occupational health context. In RR Sinclair, M Wang, LE Tetrick (Eds). *Research methods in occupational health psychology: measurement, design, and data analysis.* New York: Routledge/Taylor & Francis Group, 2013; 122-137.

**6**. Deans CL, Byrne DG. A scale to measure nontraumatic military operational stress. *Stress and Health* 2009; **25:** 53-62. http://dx.doi.org/10.1002/smi.1223

**7**. Meredith V, Rush P, Robinson E. *Fly-in fly-out workforce practices in Australia: the effects on children and family relationships.* Canberra: Australian Institute of Family Studies, 2014.

**8**. Jacobs GG. *The impact of FIFO work practices on mental health*. Parliament of Western Australia, Education and Health Standing Committee, report no. 5. Perth: Parliament of Western Australia, 2015.

**9**. Torkington AM, Larkins S, Gupta TS. The psychosocial impacts of fly-in fly-out and drive-in drive-out mining on mining employees: a qualitative study. *Australian Journal of Rural Health* 2011; **19(3):** 135-141. http://dx.doi.org/10.1111/j.1440-1584.2011.01205.x

**10**. Mclean KN. Mental health and wellbeing in resident mine workers: out of the fly-in fly-out box. *Australian Journal of Rural Health* 2012; **20(3):** 126-130. http://dx.doi.org/10.1111/j.1440-1584.2012.01267.x

**11**. Friedland N, Keinan G. Training effective performance in stressful situations: three approaches and implications for combat training. *Military Psychology* 1992; **4:** 157-174. http://dx.doi.org/10.1207/s15327876mp0403_3

**12**. Orme GJ, Kehoe EJ. Psychological adjustment and retention of Australian Army reservists following a stability operation. *Military Medicine* 2011; **176:** 1223-1231. http://dx.doi.org/10.7205/MILMED-D-11-00162

**13**. Australian Government. *Portfolio budget statements 2014–15*. Budget related paper no. 1.4A: Defence Portfolio. Canberra: Australian Government, 2014; 24.

**14**. McGuire F. Army alpha and beta tests of intelligence. In RJ Sternberg (Ed). *Encyclopedia of intelligence.* New York: Macmillan, 1994; 125-129.

**15**. Bartone PT. Hardiness protects against war-related stress in army reserve forces. *Consulting Psychology Journal* 1999; **51:** 72-82. http://dx.doi.org/10.1037/1061-4087.51.2.72

**16**. Bartone PT, Snook SA. *Cognitive and personality factors predict leader development in U.S. Army cadets.* Paper presented at 35th International Applied Military Psychology Symposium (IAMPS), Florence, Italy, May 1999.

**17**. Orme G, Kehoe EJ. Hardiness as a predictor of mental health and well being of Australian Army Reservists on and after stability operations. *Military Medicine* 2015; **179(4):** 404-12. http://dx.doi.org/10.7205/MILMED-D-13-00390

**18**. Coleman PJ, Kerkering JC. Measuring mining safety with injury statistics: lost workdays as indicator of risks. *Journal of Safety Research* 2007; **38:** 523-533. http://dx.doi.org/10.1016/j.jsr.2007.06.005

**19**. Patterson JM, Shappell SA. Operator error and system deficiencies: analysis of 508 mining incidents and accidents from Queensland, Australia using HFACS. *Accident Analysis and Prevention* 2010; **42(4):** 1379-1385. http://dx.doi.org/10.1016/j.aap. 2010.02.018

**20**. Krueger GP. Military engineering psychology: setting the pace for exceptional performance. In JH Laurence, MD Matthews (Eds). *The Oxford handbook of military psychology*. New York: Oxford University Press, 2012; 232-240. http://dx.doi.org/10.1093/oxfordhb/9780195399325.013.0077

**21**. Gander P, Hartley L, Powell D, Cabon P, Hitchcock E, Mills A, et al. Fatigue risk management: organisational factors at the regulatory and industry/company level. *Accident Analysis and Prevention* 2011; **43:** 573-590. http://dx.doi.org/10.1016/j.aap.2009.11.007

 

**22**. Helmreich RL. On error management: lessons from aviation. *British Medical Journal* 2000; **320:** 781-785. http://dx.doi.org/10.1136/bmj.320.7237.781

**23**. Chiappe D, Vu K-PL, Strybel T. Situation awareness in the NextGen air traffic management system. *International Journal of Human-Computer Interaction* 2012; **28(2):** 140-151. http://dx.doi.org/10.1080/10447318.2012.634768

**24**. Sneddon A, Mearns K, Flin R. Situation awareness and safety in offshore drill crews. *Cognition, Technology & Work* 2006; **8:** 255?267. http://dx.doi.org/10.1007/s10111-006-0040-1

**25**. Pfingst K, Nalivaiko E, Baurmert M, Lawrence-Wood E. *Enhancing resilience and performance in military through biofeedback based skills training*. Poster presented at Defence Human Sciences Symposium, Melbourne, 2015.

**26**. NATO Research and Technology Organisation. *Real-time physiological and psycho-physiological status monitoring*. RTO technical report TR-HFM-132. (Internet) 2010. Available: http://ftp.rta.nato.int/public/PubFullText/RTO/TR/RTO-TR-HFM-132/$$TR-HFM-132-ALL.pdf (Accessed 23 September 2016).

**27**. Freeman A, Moore BA. Theoretical base for treatment of military personnel. In S Morgillo Freeman, BA Moore, A Freeman (Eds). *Living and surviving in harm's way*. London: Routledge, 2009.

**28**. Brailey K, Vasterling J, Proctor S, Constans J, Friedman M. PTSD symptoms, life events, and unit cohesion in U.S. soldiers: baseline findings from the neurocognition deployment health study. *Journal of Traumatic Stress* 2007; **20(4):** 495-503. http://dx.doi.org/10.1002/jts.20234

**29**. Jones N, Seddon R, Fear NT, McAllister P, Wessely S, Greenberg N. Leadership, cohesion, morale, and the mental health of UK Armed Forces in Afghanistan. *Psychiatry: Interpersonal and Biological Processes* 2012; **75(1):** 49-59. http://dx.doi.org/10.1521/psyc.2012.75.1.49

**30**. Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychological Bulletin* 2003; **129(1)**: 3-4. http://dx.doi.org/10.1037/0033-2909.129.1.52

**31**. Bartone P. Resilience under military operational stress: can leaders influence hardiness? *Military Psychology* 2006; **18(Suppl.):** S131-S148. http://dx.doi.org/10.1207/s15327876mp1803s_10

**32**. Castro C. McGurk D. MHAT IV commentary. *Traumatology* 2007; **13:** 59-60. http://dx.doi.org/10.1177/1534765607309949

**33**. Deans CL, Heffernan KM. Supporting mental health on operations. *In Psych* 2010; **32(2):** 14-15.

**34**. Plank T, Scheff S, Sebok A. Capturing insights to reduce future warfighter fatalities. *Proceedings of the Human Factors and Ergonomics Society 54th Annual Meeting*. Santa Monica: Human Factors and Ergonomics Society, 2010; 2299-2301. http://dx.doi.org/10.1177/154193121005402717

**35**. Beach R, Cliff D. Workplace turnover in FIFO mining operations in Australia: an exploratory study. *AusIMM Bulletin* 2003; Sept/Oct. Centre for Social Responsibility in Mining, Sustainable Minerals Institute, University of Queensland, Brisbane, Queensland.

**36**. Maes M, Delmeire L, Mylle J, Altamura C. Risk and preventive factors of post-traumatic stress disorder (PTSD): alcohol consumption and intoxication prior to a traumatic event diminishes the relative risk to develop PTSD in response to that trauma. *Journal of Affective Disorders,* 2001; **63(1-3):** 113-121. http://dx.doi.org/10.1016/S0165-0327(00)00173-7

**37**. Ward CA, Bochner S, Furnham A. *The psychology of culture shock*. Philadelphia: Taylor & Francis, 2001.

**38**. Keats PA. Soldiers working internationally: impacts of masculinity, military culture, and operational stress on cross-cultural adaptation. *International Journal for the Advancement of Counselling* 2010; **32(4):** 290-303. http://dx.doi.org/10.1007/s10447-010-9107-z

 

**39**. Peng LL, Ming Guo L. Executive functions of the top soldiers with excellent military skills. *Chinese Journal of Clinical Psychology,* 2008; **16(4):** 387-388.

**40**. Greenhill JA, Walker J, Playford D. Outcomes of Australian rural clinical schools: a decade of success building the rural medical workforce through the education and training continuum. *Rural and Remote Health* (Internet) 2015; **15:** 2991. Available: www.rrh.org.au (Accessed 23 September 2016).

**41**. Rickwood D, Deane FP, Wilson CJ. Ciarrochi J. Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health* 2005; **4(3)**: 1-34. http://dx.doi.org/10.5172/jamh.4.3.218

**42**. Aisbett DL, Boyd CP, Francis KJ, Newnham K, Newnham, K. Understanding barriers to mental health service utilization for adolescents in rural Australia. *Rural and Remote Health* (Internet) 2007 **7:** 624-627. Available: www.rrh.org.au (Accessed 23 September 2016).

**43**. Gulliver A, Griffiths KM, Christensen H. Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry* 2010; **10:** 110-113. http://dx.doi.org/10.1186/1471-244X-10-113

**44**. Wilson NW, Couper ID, de Vries E, Reid S, Fish T, Marais BJ. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. *Rural and Remote Health* (Internet) 2009; **9:** 1060. Available: www.rrh.org.au (Accessed 23 September 2016).

**45**. McLean CP, Steenkamp MM, Levy HC, Litz BT. Posttraumatic stress disorder. In MA Cucciare, KR Weingardt (Eds). *Using technology to support evidence-based behavioral health practices: a clinician's guide.* New York: Routledge/Taylor & Francis, 2010; 45-68.

**46**. Sutherland CR, Chur-Hansen A. Knowledge, skills and attitudes of rural and remote psychologists. *Australian Journal of Rural Health* 2014; **22:** 273-279. http://dx.doi.org/10.1111/ajr.12152

**47**. Bhar S, Hodgins G, Eaton S. Three-year retrospective case study of a clinical psychology intern program within a rural mental health service. *Australian Psychologist* 2006; **41(1):** 23-27. http://dx.doi.org/10.1080/00050060500421626

**48**. Malone JL, Dyck KG. Professional ethics in rural and northern Canadian psychology. *Canadian Psychology* 2011; **52(3):** 206-214. http://dx.doi.org/10.1037/a0024505

**49**. McIlwraith RD, Dyck KG, Holms VL, Carlson TE, Prober NG. Manitoba's rural and northern community-based training program for psychology interns and residents. *Professional Psychology: Research and Practice* 2005; **36(2):** 164-172. http://dx.doi.org/10.1037/0735-7028.36.2.164

**50**. Ellis MV. Bridging the science and practice of clinical supervision: some discoveries, some misconceptions. *The Clinical Supervisor* 2010; **29(1):** 95-116. http://dx.doi.org/10.1080/07325221003741910

**51**. Zur O, Gonzalez S. Multiple relationships in military psychology. In AA Lazarus, O Zur (Eds). *Dual relationships and psychotherapy*. New York: Springer, 2002; 315-328.

**52**. Hines AH, Ader DN, Chang AS, Rundell JR. Dual agency, dual relationships, boundary crossings and associated boundary violations: a survey of military and civilian psychiatrists. *Military Medicine* 1998; **163(12)**: 826-833.

**53**. Johnson WB, Kennedy CH. Preparing psychologists for high-risk jobs: key ethical considerations for military clinical supervisors. *Professional Psychology: Research and Practice* 2010; **41(4):** 298-304. http://dx.doi.org/10.1037/a0019899

 