

A study of alcohol consumption in a cohort of military nurses

Maree Sheard¹, Annette Huntington², Jean Gilmour²

Abstract

Background: Alcohol consumption in defence populations exceeds those of civilians across all age groups with stress associated with operational deployments thought to be a contributing factor. Civilian nurses drinking patterns mirror those of the general population, however alcohol consumption in military nurses as a discrete group has yet to be studied.

Purpose: This investigation aimed to examine alcohol consumption in a cohort of military nurses.

Material and methods: A cross-sectional study of a sample of 44 defence nurses from the United Kingdom, Australia and New Zealand extracted from a large electronic longitudinal survey.

Results: Over 20% of respondents consumed more than the recommended daily limit for their gender with over 24% of females exceeding safe daily consumption rates. Fifteen per cent drank more than their recommended weekly limit. Defence nurses in their fifties and sixties drank every day more often and consumed more drinks over a week than younger nurses.

Conclusion: Many respondents drank more than is recommended with older nurses engaged in higher alcohol consumption. Older nurses have been exposed to military drinking cultures for longer and are more likely to have deployed and experienced the stressors associated with this. Loss or impairment of individuals in this select group has the potential to impact disproportionately upon health capability. The study results highlight the need for further research with this population given the small sample size.

Key words: military, defence, nurses, alcohol, drinking

Introduction

Alcohol consumption in military populations

There is a long tradition of drinking in military forces. Alcohol has been used to motivate soldiers and manage stress throughout history with many of today's rituals and ceremonies having their foundation in that past. Ritual and ceremony are an important part of defence cultures providing context and motivation for operational success. Values such as comradeship and commitment contribute to the military culture as does a focus on the importance of team cohesion. Social activities provide the opportunity for the development of team cohesion and allow for debriefing with colleagues in a semi-work environment. Military messes and clubs have been established for these purposes and traditional rituals and behaviours involving heavy drinking in mess environments continue despite official policy in many defence forces banning them^{1,2,3}.

Research confirms that heavy drinking is endemic in western militaries. In the UK and the USA alcohol consumption rates in military personnel exceed those of civilian populations across all age groups^{1,4}. Military leaders are aware of the negative impact

that excessive drinking has on the health of their populations, the reputation of armed forces and military capability^{1,2,3}. Research into patterns of alcohol use will enable safe drinking interventions to be targeted at those groups most at risk.

While in general defence personnel consume alcohol at higher rates than civilians, there are certain military subgroups that stand out as heavy drinkers^{4,5}. Young, single males of low educational achievement and lower rank drink significantly more than older people in defence forces and more than young civilian males^{1,3,4}. Young military females drink at higher rates than other military women and more than women in the general population with one study finding that this group binge drink at rates that are even higher than young men in the civilian population⁴. Personnel who serve in combat units drink more than personnel who perform combat support and combat service support roles. Members who hold positions in medical and welfare units drink the least of all military personnel. However, even these people drink more than their colleagues in the civilian sector⁴.

Servicemen and women who have deployed on operational missions are heavier drinkers than those

who have not served overseas^{4,5,6}. A longitudinal study undertaken in the UK found alcohol consumption in both deployed and non-deployed personnel increased during a period of significant military commitment for the British Armed Forces. However, the increase was greater for those who had deployed and even higher for those who had been exposed to traumatic events⁶. It is known that patterns of heavy drinking continue for veterans of deployments long after their retirement from service⁵ but there is a reluctance for people to seek help for problems associated with drinking while they are still in uniform due to stigma and a perceived and sometimes warranted concern that the impact of seeking help may have on their careers³.

Alcohol consumption in nursing

Nursing is a stressful profession⁷. Studies on the health and wellbeing of nurses have found an association between reported low levels of health and work stress^{8,9}. Stress on nurses can lead to lost productivity through time off work, increased staff turn-over and nurses presenting to work when sick. Presenting to work when sick can affect performance, have a negative flow-on effect for colleagues and increase the risk for patients¹⁰.

Occupational stress in nursing is common^{11,8}. McGrath, Reid and Boore¹¹ found that complex organisational structures, frequent changes, environmental risk and high stress compound challenges for nurses' professional and psychological wellbeing. Older and experienced nurses have been found to experience more stress than younger colleagues with this stress negatively impacting upon nurses' motivation and job satisfaction⁹. These factors can then lead to burn-out¹² and ultimately attrition for nurses⁷. Stress therefore has significance for the maintenance of the nursing workforce and the delivery of healthcare.

The ways in which nurses manage their own health has an impact upon patients¹³. In a study conducted in the UK, Callaghan¹³ found nurses' beliefs in the value of health practices, and the extent to which nurses apply health behaviours in their own lives translates into how readily the same nurses are likely to raise associated health-related behaviours with patients. Additionally, nurses who do not demonstrate healthy behaviours are poor role models for patients¹⁴.

Despite the ongoing high levels of stress experienced by the profession, only recently has a body of evidence begun to develop that examines the relationship between stress and the health behaviours of nurses. The link between stress and alcohol is

recognised,¹⁵ however little research is available to demonstrate a link between nurses using alcohol and experiencing stress. Researchers report that nurses' alcohol consumption rates mirror those of matched populations⁷. However, nurses who do drink to excess may be unlikely to be challenged in the workplace about their drinking or to seek help voluntarily due to stigma and possible repercussions on their careers^{16,17}.

Alcohol consumption in military nurses

Stressors experienced by nurses in the civilian sector may be compounded for nurses who serve in the military. Pressure to maintain physical fitness, military duties additional to those of nursing, and the challenges encountered while serving on operational missions all contribute to stress¹⁸. Operational deployments are known to pose risk to psychological wellbeing for all personnel, but for nurses the risk may be increased with challenges posed by moral dilemmas when mission goals conflict with professional values¹⁹. Griffiths and Jasper¹⁸ note that in a cohort of British military nurses, this dichotomy was able to be reconciled. However an American review of the psychological impact of moral distress on military nurses found them to be at particular risk, a risk that requires addressing to prevent ongoing negative effects²⁰.

Emotional exhaustion is common among military nurses¹⁸. Social dislocation associated with postings, power disparities related to rank, and exposure to traumatic events have been found to be contributing factors¹⁷. While research points to operational service increasing the military nurse's risk of work-related stress^{18,19,20}, there is evidence to suggest that nurses employed in garrison settings can also experience significant stress. An American study found nurses working in a static military hospital in the United States suffered higher levels of emotional exhaustion than nurses serving on operational missions overseas²¹. These findings were related to those at home being required to carry out officer responsibilities additional to nursing duties; nurses on deployment performed nursing functions only. Many defence forces, including New Zealand and Australia, recruit registered nurses exclusively into their officer corps. Responsibilities that come with officer rank, irrespective of the profession of the service person, are known to increase the complexity of the employment context²² which in turn, increases stress²³.

There has been little research into the drinking patterns of military nurses. Examination of alcohol use in other military cohorts may have some application to military nurses, as might alcohol

consumption rates in civilian nurse populations. However, military nursing places unique demands upon those who serve which may impact differently upon how this group of nurses drink. The aim of this study was to explore the drinking behaviours and the alcohol consumption for this group of nurses.

Materials and methods

Design

Data for this study was drawn from the Nurses and Midwives e-Cohort Study (NMeS). The NMeS is a web-based longitudinal cohort study comprised of nurses and midwives from the United Kingdom and Australia and nurses only from New Zealand, recruited for the study between April 2006 and March 2008²⁴. Demographic, employment and health information was collected to elicit how the impact of the interrelationship between these factors affects the overall health and wellbeing of nurses and midwives. Further information about the NMeS can be found in Huntington et al.²⁴ and Schluter et al.⁷.

Participants provided demographic information, professional classifications and employment data at registration. Three surveys were conducted on the study themes of Staying Healthy and Work/Life Balance. The first survey coincided with recruitment and registration, the second survey was held between the 30 August 2008 and 26 September 2009, and the third between May 2010 and May 2011²⁴. This sub-study examining the alcohol consumption of military nurses is a cross-sectional analysis of information taken from the second survey.

Ethical approval

Confidentiality was maintained through the allocation of personalised identification codes. There is strictly limited access to participants' personal information in accordance with ethical requirements. Ethical approval was provided by the University of Queensland Behavioural and Social Science Ethics

Review Committee (2005000696) and the Massey University Human Ethics Committee (Southern B application 05/71).

Participants

To be included in this study, participants were required to be registered nurses serving as enlisted members of the United Kingdom, Australian or New Zealand Defence Forces, and have been working in a defence facility at the time the second survey was conducted. Civilian nurses working in defence establishments were excluded as were registered nurses who were in the military at the time of the survey but not employed in nursing roles. A number of nurses who identified themselves as members of a defence force when registering for the NMeS failed to respond to invitations to engage with the second survey. This may be explained in part by defence nurses being posted to new locations which can involve a change in email address, or by overseas deployment where internet access can be problematic.

Measures

Instruments used in the NMeS comprise of a range of internationally validated research questionnaires that collectively cover the study themes. Questions related to alcohol consumption were derived from the Food Frequency Questionnaire developed by Willett et al. (as cited in Schluter et al.⁷) and sought to determine drinking/teetotaler status, change in drinking status, the number of days per week participants consumed alcohol and the number of standard drinks consumed on drinking occasions. Responses were assessed using the recommendations of the New Zealand Health Promotion Agency (HPA) for reducing long-term health risks associated with drinking that are based on research commissioned by the Agency²⁵. Table 1 describes these recommendations as they are presented by the HPA's "Drink Check" brochure²⁶.

Table 1 HPA safe drinking recommendations for reducing long-term health risks²⁶

	Females	Males
Frequency	Drink no more often than 5 days per week	Drink no more often than 5 days per week
Numbers of standard drinks per week	No more than 10	No more than 15
Number of standard drinks per occasion	No more than 2	No more than 3

Guidelines for reducing the risk of long-term harm from alcohol consumption in the UK and Australia are similar to those in New Zealand. The UK government's guidelines state that men should not regularly exceed three to four units of alcohol per day and women should not exceed two to three²⁷. Australian guidelines for reducing the risk of alcohol-related harm over a lifetime recommend neither men nor women drink more than two standard drinks on any day²⁸. The New Zealand guidelines were selected for this research based on their similarity with those of Australia and the UK, and with the authors' familiarity with the New Zealand version.

Unsafe drinking is defined by the HPA as when an individual drinks more often than five days per week or when a female consumes in excess of two standard drinks on any drinking occasion, three for males. In addition, the HPA assesses females as falling into a category of unsafe drinking if they consume more

than 10 standard drinks per week. For males this is if they drink in excess of 15 standard drinks in a week. As weekly alcohol consumption rates were not established in the survey, these were determined by multiplying the number of standard drinks individuals consumed on drinking occasions by the number of days they drank each week.

Statistical analysis

All data was processed using SPSS version 21 (SPSS, Chicago, IL, USA). Descriptive, frequency and exploratory analyses were undertaken using variables categorised as nominal, ordinal or categorical. Tests of significance were not undertaken as the cohort was not large enough for generalisations to be made to wider defence nurse communities.

Table 2 Defence nurses' drinking patterns data Total N=44 Males n=15 Females n=29

		All	%	Male	%	Female	%
Current drinker	No	3	6.8	-	-	3	10.3
	Yes	40	90.9	14	93.3	26	89.7
	Missing	1	2.3	1	6.7	-	-
History of drinking	Have never drunk	1	2.3	-	-	1	3.4
	I don't drink now but I have in the past	2	4.5	-	-	2	6.9
	I drink now and I have in the past	41	93.2	15	100.0	26	89.7
Frequency of drinking	Never	4	9.1	1	6.7	3	10.3
	1 day per week	8	18.2	2	13.3	6	20.7
	2 days per week	7	15.9	2	13.3	5	17.2
	3 days per week	11	25.0	5	33.3	6	20.7
	4 days per week	2	4.5	-	-	2	6.9
	5 days per week	3	6.8	1	6.7	2	6.9
	6 days per week	3*	6.8*	1*	6.7*	2*	6.9*
	Every day	2*	4.5*	1*	6.7*	1*	3.4*
	Missing	4	9.1	2	13.3	2	6.9
Total who drink more than 5 days per week		5*	11.3*	2*	13.4*	3*	10.3*
Number of drinks consumed in a session	None	4	9.1	1	6.7	3	10.3
	1 drink	17	38.6	5	33.3	12	41.4
	2 drinks	11	25.0	4	26.7	7	24.1
	3 drinks	6	13.6	4	26.7	2*	6.9*
	4 drinks	4*	9.1*	-	-	4*	13.8*
	5 drinks	1*	2.3*	-	-	1*	3.4*
	6 drinks	1*	2.3*	1*	6.7*	-	-
Total who drink more than recommended daily limit (no more than 3 for males, no more than 2 for females)		8*	21.9*	1*	6.7*	7*	24.1*
Total who consume more drinks than recommended weekly limit (no more than 15 for males, no more than 10 for females)		7*	15.9*	2*	13.4*	5*	17.1*

* indicates unsafe drinking as per HPA guidelines

Results

Forty four military nurses met the inclusion criteria of which 15 were male and 29 female. Twenty six nurses held nursing registrations in Australia, 11 were registered in New Zealand and five in the United Kingdom. The remaining two eligible nurses failed to respond to this question. Five nurses drank more than 5 days per week and 8 consumed more than the recommended daily limit for their gender. One male nurse drank in excess of daily recommendations while 7 females exceeded their safe daily consumption rates. It was found that 7 of the cohort consumed more than their recommended weekly limit; 2 males and 5 females. Table 2 describes the breakdown of drinking patterns.

Dates of birth were elicited at NMeS registration with nurses' ages calculated from the date of the closure of Survey 2. Relationships between nurses' ages and the mean number of drinks consumed per day, numbers of drinking days per week and number of drinks consumed per week were calculated. Participants were also grouped into categories in accordance with their decade of life. Relationships between decades of age and alcohol consumption variables were then calculated.

The median number of drinks consumed in a session for each age group ranged between 1 and 2, however a maximum of 6 drinks were reported for nurses in their forties. The median number of drinks consumed per week ranged between 0.5 drinks for nurses in their thirties up to 16.5 for the 2 nurses in their sixties. The maximum individuals reported drinking per week was by nurses in their sixties followed by those in their fifties then nurses in their forties. Nurses in their fifties and sixties drank every day of the week more often than their younger colleagues. Nurses in their twenties drank at the most, 3 days a week. The results of the frequency of drinking and the median and maximum numbers of drinks consumed per day along with the median and maximum numbers of drinks consumed by each age group per week appear in Table 3. Figure 1 illustrates how the number of standard drinks consumed per week increases with age.

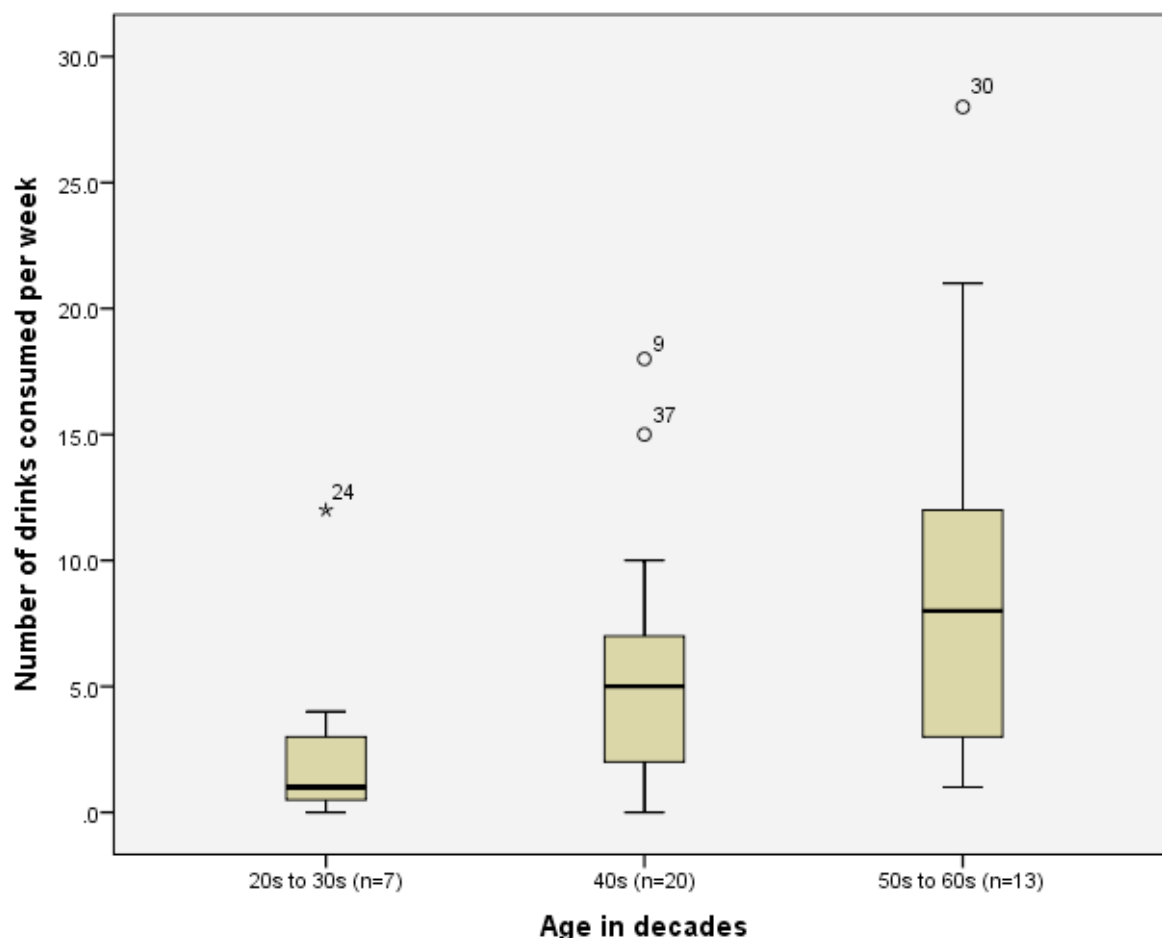
Discussion

While this study into the drinking patterns of defence nurses is small, there are some indicators that may be cause for concern. Some nurses in the study who were older drank more alcohol more frequently than younger nurses. The older nurses also reported drinking to unsafe levels more than

Table 3 Numbers of drinks consumed by nurses grouped by decades of age

Decade of age	Number of drinks consumed per week	Number of drinks consumed per day	Frequency of drinking -days per week.
Twenties	Number of cases in group Maximum Minimum Median	3 12 1 2.000	3 3 1 1.000
Thirties	Number of cases in group Maximum Minimum Median	4 4 0 .500	4 4 0 .500
Forties	Number of cases in group Maximum Minimum Median	20 18 0 5.000	20 6 0 2.500
Fifties	Number of cases in group Maximum Minimum Median	11 21 1 8.000	11 7 1 3.000
Sixties	Number of cases in group Maximum Minimum Median	2 28 5 16.500	2 7 5 6.000
Total	Number of cases in group Maximum Minimum Median	40 28.0 0 4.500	40 7 0 3.000

Figure 1 Age and number of drinks consumed per week



younger nurses. This is particularly the case for nurses in their fifth decade of life but also pertains to a lesser extent, to nurses in their forties. Nurses in their sixties drank the most in all measures. Findings that older nurses in this study drink more than younger nurses is unexpected and is the inverse of previous studies where unsafe drinking has been found to be significantly more common in younger military people, both male and female. Factors that may contribute to older nurses' increased alcohol consumption in relation to their younger colleagues revolve around the length of time nurses serve and the nature of that service.

The longer nurses are exposed to the defence culture the more likely they may become inculcated to military norms and values. Like other personnel, the military nurse operates in an environment where their work is blended with their personal life and where alcohol is readily available and accepted as part of that life²⁹. Socialising with personnel who use alcohol as a means of managing stress will expose

defence nurses to the extremes of these norms and the association between alcohol consumption and operational deployment will become more evident the more time they spend in that environment.

Older military nurses are more likely to have deployed than younger nurses as there are more opportunities for deployment over time. Longer serving nurses may have undertaken a range of operational tours that could involve peacekeeping and disaster response as well as combat missions. All occupational groups are reported to use alcohol to manage stress that results from deployment with those who serve in medical units not being exempt⁴. Military nurses most frequently serve in medical units.

Alcohol consumption has been found to increase most significantly over time in those who have been exposed to life-threatening traumatic events and those who have experienced hostility from civilians during missions⁶. However, there has been little research into the stress experienced by military nurses working with those who have been injured

as a result of combat, and little into the relationship between military nurses' stress and alcohol consumption. This area requires research to inform the way ahead for improvements in the health of this group.

Iverson et al.³ note that peacekeeping presents unique challenges where service personnel experience significant frustration associated with their inability to act against human rights violations. Peacekeepers in this study were found to consume alcohol at higher rates than personnel who had deployed on other types of missions. Iverson's observations about possible causes of the relationship between alcohol consumption and peacekeeping have some resonance with the moral distress experienced by defence nurses when on deployment.

Defence nurses have described moral distress as their inability to practice in accordance with what they believe to be in the best interests of their patients¹⁸. Tension can exist between military orders driven by mission imperatives, and nursing judgement. This may result in nurses being compelled to compromise on best practice which in civilian settings has been found to lead to the inappropriate use of alcohol³⁰. Whether military nurses turn to alcohol to deal with moral distress resulting from care rationing on operational missions is yet to be studied.

There are unique challenges for defence nurses seeking help with alcohol-related problems. Military nurses serve in the same units that facilitate and at times provide the care they themselves may require. Concerns surrounding the maintenance of confidentiality and the potential impact upon careers of disclosure of alcohol-related problems are very real for these nurses. There is a danger that if professional boundaries are not respected, line managers may be involved in care provision at the same time as being required to provide information to command about their patients' individual military effectiveness.

Defence nurses are expected to role model healthy behaviours. Callaghan¹³ noted that the personal health habits of nurses impacts upon their ability to raise related health issues with their patients. This has significance for defence forces because as a condition of service, military personnel are required to obtain their healthcare through their employer. When military nurses find it difficult to raise issues with patients due to their own health behaviours, the impact may be greater because of a smaller population and smaller number of nurses providing that care. It is of course, incumbent on defence nurses as much it is with their civilian counterparts, to act as role models for their patients.

Defence nurses are a select group of highly skilled health professionals who receive significant investment in their professional development. Any loss or impairment of one of these individuals has the potential to impact disproportionately upon health capability. It takes time to recruit and develop military nurses to the level where they can become operationally effective so vacancies are problematic. Given the nursing profession is facing critical shortages as the general population ages⁷, strategies are needed to assist military forces to retain and optimise the effectiveness of those nurses already serving.

While alcohol consumption continues to provide a social screen behind which stress management is hidden, the imperative to create and provide safe and acceptable alternative approaches are not there. Any way forward will involve military forces continuing to work to change entrenched drinking cultures, as well as implementing systematic improvements so that stigma and fear of repercussions are no longer barriers to individuals seeking help for alcohol related problems.

At the commencement of this research expectations had been that military nurses would reflect the drinking patterns of their profession rather than those of their employing organisation. In this study, indications are that this group of defence nurses identify more closely with military forces than they do with their profession. This may be confirmation of the effectiveness of defence forces' efforts to impress their culture on service members or it may perhaps be a reflection of the nature of stress experienced by defence nurses. Military nurse leaders need to appreciate fully the dynamics in operation that may be leading to unsafe drinking in their nursing workforces and ensure that strategies that minimise or mitigate against stress are in place. There is a need for further research to inform these strategies such as a wider survey of a representative sample of defence force nurses.

Study limitations: Given the small numbers of nurses in the survey, no generalisations can be made about the application of the findings in this study to other groups of military nurses. Nurses in their sixties drank the most in all measures; however there were only two nurses in this group which hampers comment about any relationship between these two nurses and others. Additionally, the data is self reported so may not accurately portray alcohol consumption over time.

Conclusion

Issues in this study raise the possibility that unique employment and social conditions in defence forces may, over time, contribute to nurses consuming alcohol in excess of recommended rates. Interdependencies between a culture of heavy drinking, nurses' health related behaviours and the impact of poor role modelling on patients should be of concern to defence leaders. The health of the wider defence population is influenced by military nurses through their ability to raise health related behavioural issues with their patients and the health of nurses is, of course, affected by their personal drinking patterns. Both effects impact upon defence capability.

While this study is small-scale and therefore cannot be used as a basis for generalisation, it has raised an important issue which, for the health of military nurses and for defence forces overall, needs further exploration.

Acknowledgements

The 'Nurses & Midwives e-cohort' project was supported by grants from the Australian Research Council (LP0562102), Australian National Health and Medical Research Council (2005002108) and New Zealand Health Research Council (456163). Industry partners providing additional funding include: Queensland Health, the South Australian Department of Health, Injury Prevention and Control Australia (Pty Ltd), Nursing Council of New Zealand and the Macquarie Bank Foundation. Industry partners providing in kind support for the project include: Queensland Nursing Council, Nurses and Midwives Board of New South Wales, Nurses Board of Tasmania, Nurses Board of Western Australia, Nurses Board of the Australian Capital Territory and Nursing Council of New Zealand. Corporate sponsors include Virgin Blue, Virgin Atlantic and MessageNet. We thank all participants for their involvement in the study.

Authors' affiliations: ¹Royal New Zealand Nursing Corps and School of Health Sciences, ²Massey University at Wellington.

*Corresponding author: Maree Sheard
email: philandmaree@xtra.co.nz*

References

1. Ames G, Cunradi, C. Alcohol use and preventing alcohol-related problems among young adults in the military. *Alcohol Research and Health*. 2005;28(4):252–257.
2. Australian Government Department of Defence. *The use of alcohol in the Australian Defence Force: A report of the Independent Advisory Panel on Alcohol*. Canberra: 2011.
3. Iversen A, Waterdrinker A, Fear N, et al. Factors associated with heavy alcohol consumption in the U.K. Armed Forces: Data from a health survey of Gulf, Bosnia and Era veterans. *Mil Med*. 2007;172(9):956–961.
4. Fear N, Iversen A, Meltzer H, et al. Patterns of drinking in the UK Armed Forces. *Addiction*. 2007;102:1749–1759.
5. Ramchand R, Miles J, Schell T, et al. Prevalence and correlates of drinking behaviors among previously deployed and matched civilian populations. *Military Psychology*. 2011;23:6–21.
6. Hooper R, Rona R, Jones M, et al. Cigarette and alcohol use in the UK Armed Forces, and their association with combat exposures: A prospective study. *Addict Behav*. 2008;33:1067–1071.
7. Schluter P, Turner C, Huntington A, et al. Work/life balance: The Nurses and Midwives e-cohort study. *Int Nurs Rev*. 2011;58:28–36.
8. Chang E, Bidewell J, Huntington A, et al. A survey of role stress, coping and health in Australian and New Zealand hospital nurses. *Int J Nurs Stud*. 2007;44:1354–1362.
9. Landa J, Lopez-Zafra E, Martos M, et al. The relationship between emotional intelligence, occupational stress and health in nurses: A questionnaire survey. *Int J Nurs Stud*. 2006;45(6):888–901.
10. Johnson CJ, Croghan E, Crawford J. The problem and management of sickness absence in the NHS: Considerations for nurse managers. *Journal of Nursing Management*. 2003;11:336–342.
11. McGrath A, Reid N, Boore J. Occupational stress in nursing. *Int J Nurs Stud*. 2003;40(5):555–565.
12. Gray-Toft P, Anderson J. Stress among hospital nursing staff: Its causes and effects. *Social Science & Medicine Part A, Medical Sociology*. 1981;15:639–647.
13. Callaghan P. Health beliefs and their influence on United Kingdom nurses' health-related behaviours. *J Adv Nurs*. 1999;29(1):28–35.

14. Henwood T, Tucket A, Turner C. What makes a healthier nurse, workplace or leisure physical activity? Informed by the Australian and New Zealand e-Cohort Study. *Journal of Clinical Nursing*. 2012;21:1746–1754.
15. Corbin W, Farmer N, Nolen-Hoekesma S. Relations among stress, coping strategies, coping motives, alcohol consumption and related problems: A mediated moderation model. *Addict Behav*. 2013;38:1912–1919.
16. Servodidio, C. Alcohol abuse in the workplace and patient safety. *Clinical Journal of Oncology Nursing*. 2011;15(2):143-145.
17. Schluter P, Turner C, Benefer C. Long working hours and alcohol risk among Australian and New Zealand nurses and midwives: A cross-sectional study. *Int J Nurs Stud*. 2012;49:701–709.
18. Griffiths L, Jasper M. Warrior nurse: Duality and complementarity of role in the operational environment. *J Adv Nurs*. 2008;61(1):92–99.
19. Crowe C, Hardill K. Nursing and war: Transforming our legacy. *Canadian Nurse*. 1991;87(7):16–17.
20. Fry S, Harvey R, Hurley A, et al. Development of a model of moral distress in military nursing. *Nursing Ethics*. 2002;9(4):373–387.
21. Lang G, Patrician P, Steels N. Comparison of nurse burnout across Army hospital practice environments. *Journal of Nursing Scholarship*. 2012;44(3):274-283.
22. Taylor R, Rosenbach W, Rosenbach E. *Military leadership: In pursuit of excellence*. Boulder: Westview; 2009.
23. Huntington A, Gilmour J, Tuckett A, et al. Is anybody listening? A qualitative study of nurses' reflections on practice. *Journal of Clinical Nursing*. 2011;20:1413–1422.
24. Huntington A, Gilmour J, Schluter P, et al. The Internet as a research site: Establishment of a web-based longitudinal study of the nursing and midwifery workforce in three countries. *J Adv Nurs*. 2009;65(6):1309–1317.
25. Connor J, Kydd R, Shield K, et al. Alcohol-attributable burden of disease and injury in New Zealand: 2004 and 2007. Research report commissioned by the Health Promotion Agency. Wellington: Health Promotion Agency; 2013.
26. Health Promotion Agency. Is your drinking okay? [updated 2012; cited 2013 Oct 23]. Available from <http://www.alcohol.org.nz/alcohol-you/your-drinking-okay>
27. Drinkaware. Alcohol unit guidelines. Available from <http://www.drinkaware.co.uk/check-the-facts/what-is-alcohol/alcohol-unit-guidelines/>
28. National Health and Medical Research Council. *Australian Guidelines to reduce health risks from drinking alcohol*. Canberra: Commonwealth of Australia; 2009.
29. Verrall N. A review of military research into alcohol consumption. *J R Army Med Corps*. 2011;157(2):164–169.
30. Patrick D. Chemical dependency among nurses, nursing students. *Journal of Illinois Nursing*. 2010;107(1):7–10.