



Suicide risk in Norwegian veterans from peacekeeping service in Lebanon

Strand LA^{1,2}, Martinsen JI², Fadum EA^{1,3}, Borud EK^{1,3}

¹Norwegian Armed Forces Medical Services, N-2058 Sessvollmoen, Norway

²Cancer Registry of Norway, Box 5313, N-0304 Oslo, Norway

³UiT The Arctic University of Norway, Institute of Community Medicine, 9037
Tromsø, Norway

Leif Aage Strand, Ph.D
Senior Advisor

Institute of Military Medicine and
Epidemiology

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Epidemiology

Study design

Historical prospective cohort study



Background

- March 1978: Establishment of the United Nations Interim Force in Lebanon (UNIFIL)
- Norwegian engagement: March 1978 through November 1998
- No. of military peacekeepers: Approx 22 200 (2.7% women)



Introduction

- Studies have shown an association between exposure to traumatic stress through deployment to conflict zones and increased risk of external-cause mortality, inclusive of suicide, among the troops after discharge

Institute of Medicine (IOM). Physiologic, Psychologic, and Psychosocial Effects of Deployment-Related Stress. In: Gulf War and Health, Vol. 6. Washington DC: The National Academies Press, 2008



Study aim

- To identify the risk of suicide after discharge from peacekeeping service in Lebanon in a virtually complete cohort of men deployed to Lebanon between 1978 and 1998



Study aim

- To identify the risk of suicide after discharge from peacekeeping service in Lebanon in a virtually complete cohort of men deployed to Lebanon between 1978 and 1998
- Does the suicide risk among the peacekeepers deviate from that in the general Norwegian male population?



Material and Methods

- A cohort of 21 609 men deployed to Lebanon during 1978–1998 was established
 - Year of birth: 1921–1978
 - Median age at first deployment: 22.8 years (range: 18–59 years)
 - Duration of service: 10 months (avg.)
- Died or emigrated during the service period: 32
- Post-discharge cohort: 21 577 men



Material and Methods cont'd

- Period of service in Lebanon used as proxy for conflict exposure
 - Those who served during the first 9 years and/or during the Israeli operations in 1993 and 1996 were referred to the “high-conflict exposure group” (n=12 349)
 - Those who served but never during those periods were referred to the “low-conflict exposure group” (n=9228)



Material and Methods cont'd

- Data on vital status and emigration was retrieved through linkage to the National Population Register
- Information on suicide was obtained through linkage to the Cause of Death Registry
- Linkages were performed based on the unique personal identification numbers given to all citizens of Norway alive in 1960 or born later



Material and Methods cont'd

- All cohort members were followed up for the event of suicide starting one month (31 days) after leaving service in Lebanon, until date of death, emigration or until the end of follow-up (31 December 2013), whichever came first



Material and Methods cont'd

- Standardized mortality ratios (SMRs) were computed by dividing the observed number of suicide by the expected number
- Expected numbers were computed from national 1-year age-specific and 5-year period-specific rates among all Norwegian men
- Ninety-five percent confidence intervals (CI) were computed for the SMRs (the association is statistically significant if 1 is not included in the interval)



Material and Methods cont'd

- SMRs were calculated for the overall cohort, and for the high- and low-conflict exposure groups
 - during the overall follow-up period (1978–2013)
 - for five separate time periods (0–4, 5–9, 10–14, 15–19 and ≥ 20 years) post discharge

Results

Suicide risk post discharge (N=21 577, 530 306 person years) among Norwegian male peacekeepers deployed to Lebanon during 1978–1998. Standardized mortality ratios (SMRs) adjusted for age and time period with 95% confidence intervals (CI).

Cause of death	ICD-10	Follow-up period Years	Obs	Exp	SMR	95% CI
Suicide	X60–84,Y87.0	All	140	119.36	1.17	0.99–1.38

ICD-10=International Classification of Diseases, 10th revision; Obs=observed number of cases; Exp=expected number of cases

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		0–4	37	24.95	1.48	1.04–2.04
		5–9	27	25.58	1.06	0.70–1.54
		10–14	27	22.77	1.19	0.77–1.74
		15–19	19	19.66	0.97	0.58–1.51
		20+	30	26.41	1.14	0.77–1.62

ICD-10=International Classification of Diseases, 10th revision; Obs=observed number of cases; Exp=expected number of cases



Results

Suicide risk post discharge among 21 577 Norwegian male military peacekeepers deployed to Lebanon during 1978–1998 by conflict exposure group. Standardized mortality ratios (SMRs) adjusted for age and time period with 95% CI are presented for the whole follow-up (1978–2013, 530 306 person years), and for the first 5 years, the next 5 years and 10+ years separately. Significantly elevated estimates in red highlight

ICD-10	Follow-up period	Conflict exposure group							
		Low				High			
	Years	Obs	Exp	SMR	95% CI	Obs	Exp	SMR	95% CI
X60–84, Y87.0	All	39	41.77	0.93	0.66–1.28	101	77.59	1.30	1.06–1.58

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Y87.0	0–4	13	10.44	1.25	0.66–2.13	24	14.51	1.65	1.06–2.46
	5–9	10	10.01	1.00	0.48–1.84	17	15.57	1.09	0.64–1.75
	10+	16	21.32	0.75	0.43–1.22	60	47.51	1.26	0.96–1.63

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Study strengths and weaknesses

- Study strengths:
 - The cohort is regarded as virtually complete
 - Linkage with a high quality outcome registry secured unbiased results



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- Study weaknesses:
 - We had no individual information on trauma exposure
 - The definition of conflict exposure does not take possible differences between service locations into account

Conclusion

- Service during periods characterized by high level of conflict in Lebanon was associated with increased risk of suicide post discharge
- This increased risk disappeared after the first 5 years
- Our results have implications for present and future peacekeeping missions in terms of awareness of negative effects of conflict exposure, especially during the first few years after discharge from peacekeeping service

Thank You for Your attention!

