Defense forces around the world are currently in high demand, with sizable deployments in recent years to the Middle East and other areas of conflict. Pressure to maintain operation-ready forces has resulted in increased interest in factors associated with premature separation from service. Mental health is a key area for consideration. Studies of U.S. and British military personnel report strong associations between psychiatric morbidity and subsequent departure from service. About 70% of personnel receiving inpatient psychiatric treatment separate from service within 2 years, whereas 27% of those treated as outpatients leave within 6 months (1–3). Those studies, however, only considered personnel undergoing treatment. Two studies suggest not only that significant psychiatric morbidity is apparent among service personnel but also that about half of those meeting criteria for a psychiatric disorder choose not to seek treatment (4, 5). To our knowledge, no research to date has explored the relationship between mental health status and departure from the armed forces in a large representative sample. The current study investigated relationships between psychiatric symptom onset and separation, regardless of treatment status, in a sample of Royal Australian Navy personnel from 1991 to 2001.

Method

The participants comprised 2,355 men who served in the Royal Australian Navy during the Gulf War (August 1990 to September 1991), of whom 52% (N=1,232) were Gulf veterans. The remaining participants were randomly selected as an age-matched comparison group from Royal Australian Navy personnel in operational units during the Gulf War but who were not deployed to that conflict. Participation rates were 82% for Gulf and 56% for comparison veterans. Approximately 40% of the sample (N=860) was still in active service 10 years later (at the time of this study). The participants were recruited by mailed invitations. Details of recruitment and participant demographics were previously reported (6).

Data collection, conducted during 2000–2001 as part of the Australian Gulf War Veterans’ Health Study (7), included an in-person mental health assessment by a trained psychologist. The computer-assisted version of the Composite International Diagnostic Interview (CIDI) (8) was used to evaluate participants for any history of affective, anxiety, somatic, and substance use disorders, according to DSM-IV criteria. Standard CIDI administration includes questions about age at onset of the first symptom.

The aims of the original study meant that the sample contained a disproportionately large number of personnel who had been deployed to the Gulf compared to the total number of Royal Australian Navy personnel eligible for that deployment. To achieve representativeness of the total Royal Australian Navy, all analyses incorporated sampling weights calculated as the reciprocal of the probabilities of selection for the original study multiplied by the age-specific participation rates in that study.

To explore whether psychiatric disorder was related to patterns of separation over time, discrete time survival analysis was used (9). Person-years were accrued for each calendar year and for time-dependent variables of age (in 5-year intervals), length of military service, number of deployments, and time since onset of the first psychiatric symptom. Annual rates of separation were then computed for diagnostic category and time since onset of the first symptom. (Persons with symptom onset meeting criteria for a psychiatric disorder before commencement of military service were excluded from analyses of that particular disorder.) These annual rates can be considered as probabilities of leaving the service in the next year, according to mental health status. Annual relative risks of separation were computed by using the discrete time version of proportional hazards regression, known as complementary log-log binary regression (9), and weighted by using the sampling weights described. Analyses were adjusted for calendar year, age band, rank (in 1990), length of service, and number of deployments. Statistical analyses were carried out with the Stata 8.2 package (10).
Results

Of the 2,355 participants in the sample, 140 (6%) did not receive in-person mental health assessments and were excluded from further analyses. A further 11% (N=245) reported symptom onset before commencement of military service. Forty-six percent of the sample (N=910) met criteria for a psychiatric disorder with symptom onset after signing up. There was a high prevalence of substance use disorders (N=816, 39%), with lower rates for affective disorders (N=376, 17%), anxiety disorders (N=172, 8%), and somatoform disorders (N=34, 2%). Posttraumatic stress disorder (PTSD) criteria were met in 5% (N=101) of the sample. Overall, psychiatric disorder was related to a 19% (Wald $\chi^2=5.34$, df=1, p=0.02) greater risk of separation from the Royal Australian Navy over the 10-year period. An elevated annual risk of separation was found in personnel with affective disorders (relative risk=1.25, 95% confidence interval [CI]=1.03–1.53), anxiety disorders (relative risk=1.35, 95% CI=1.04–1.75), and PTSD (relative risk=1.45, 95% CI=1.06–1.98) but not those with substance use disorders (relative risk=1.08, 95% CI=0.94–1.25).

Analyses revealed that separation risk was significantly elevated in the first year after the onset of symptoms—almost double that of the group with no diagnosis. The table available online reveals that this pattern was maintained for all diagnostic categories, although only that for affective disorders reached significance. (Somatoform disorders were omitted from the table because of their low prevalence.) Of importance, however, in subsequent years, the risk of separation was only slightly higher for those with a diagnosis than for those without.

The patterns of separation are not explained by a Gulf War effect. Overall, personnel deployed to the Gulf War left the Royal Australian Navy at a slightly slower rate than non-Gulf War veterans (7.5% per year compared with 8.6%), although the adjusted difference did not reach significance (relative risk=1.08, 95% CI=0.88–1.32).

Discussion

These data demonstrate a clear association between the onset of a psychiatric disorder and separation from the military. The greatest risk of separation occurs within the year after symptom onset, with individuals meeting criteria for any disorder almost twice as likely to leave the service. However, it seems that once the individual has passed the first year, separation among those with a psychiatric diagnosis is comparable to those with no diagnosis. One possible interpretation of this is that participants who leave during those first 12 months represent those with more severe forms of the disorder, whereas those who remain have recovered or had less severe disorders. (Regrettably, neither symptom severity nor treatment utilization data were available to explore this question.) However, our findings also suggest that policies designed to support personnel through the early stages of a psychiatric condition and to facilitate access to appropriate treatment may increase retention. Indeed, Neal et al. (3) found that a military-specific psychiatric rehabilitation program increased 14-fold the odds of returning to active duty in army personnel hospitalized for mental illness. Clearly, early recognition and intervention are crucial.

The current findings should be interpreted cautiously, particularly in view of the retrospective nature of the symptom-onset data. Nevertheless, this report provides a basis for prospective designs that address not only prevalence issues but also the duration and severity of psychiatric symptoms, time to reporting among military personnel, and the impact of early intervention.

References