

TRANSITION AND WELLBEING RESEARCH PROGRAMME

MENTAL HEALTH AND WELLBEING TRANSITION STUDY

Mental Health Changes Over Time: a Longitudinal Perspective

Summary Report



2019

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Context

Background to this report

The current report summarises the key findings from the sixth technical report of the Transition and Wellbeing Research Programme (the fifth technical report of the Mental Health and Wellbeing Transition Study) – *Mental Health Changes Over Time: a Longitudinal Perspective*. It specifically examines the longitudinal course of mental health in a cohort of Australian Defence Force (ADF) members who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS), which was a component of the Military Health Outcomes Program.

The findings of this report should be considered in the context of prior Australian and international literature and reports on mental health in both military and veteran populations, as well as previous reports from the Transition and Wellbeing Research Programme.

Summary of previous reports from Mental Health and Wellbeing Transition Study

The first report from the Mental Health and Wellbeing Transition Study, the *Mental Health Prevalence Report*, detailed the prevalence of mental disorders in Transitioned ADF members according to a number of factors, including their transition status (i.e. whether they were ex-serving or still in some form of reserve service), and various other demographic, service-related and transition-related factors (Van Hooff et al., 2018). Of note, mental disorder morbidity among the Transitioned ADF was high, with more than 40% estimated to have a 12-month mental disorder and more than half having at least one mental disorder comorbidity. Furthermore, Transitioned ADF members who were ex-serving reported higher rates of affective disorders (32.9%) relative to Active Reservists (12.5%; OR = 4.5) and Inactive Reservists (17.0%; OR = 2.0) – consistent with findings from the earlier Middle East Area of Operations Census Study (Dobson et al., 2012). Ex-serving ADF members (44.6%) were also more likely to report an anxiety disorder than Active Reservists (31.9%; OR = 2.3) or Inactive Reservists (29.5%; OR = 1.7). Together, these patterns of higher morbidity among the ex-serving compared to reservists suggest that reservist status is in part a proxy for health, with those ADF members completely discharged more likely to have mental health problems. Furthermore, these findings are also consistent with the proposal that mental symptoms and disorder emerge with the passage of time, and the further along the process of transition ADF members are, the greater the likelihood of disorder emergence.

The second report from the Mental Health and Wellbeing Transition Study, the *Pathways to Care Report* (Forbes et al., 2018), focused on patterns of self-reported help seeking among Transitioned and serving Regular ADF members. The report found that 64% of Transitioned ADF and 52% of 2015 Regular ADF had experienced concerns about their mental health in their lifetime. Of those with a concern about their mental health, a relatively high figure of three in four had sought assistance. Of these, 53% of Transitioned ADF and 61% of 2015 Regular ADF reported being in care currently or in the last 12 months. Among those with a current probable 30-day disorder, a substantial 84% of Transitioned ADF members with a mental health concern had sought care, with 75% of these reporting receiving care currently or within the last 12 months (i.e. 63% of total with a concern and probable 30-day disorder). Within the 2015 Regular ADF, 82% of those with a probable disorder in the past 30 days had sought care. As would be expected, based on need, rates of current or recent health service engagements were still substantial but lower (38% and 56% respectively) in Transitioned and Regular ADF who reported ‘ever’ having a mental health concern but without a current probable 30-day disorder.

Overall, the findings reflect high rates of engagement with care for those with mental health concerns, far exceeding the care-seeking rates in the general Australian community with mental health problems (Slade, Johnston, Oakley Browne, Andrews & Whiteford, 2009), and consistent with the high rates reported in the 2010 MHPWS (McFarlane, Hodson, Van Hooff, Verhagen & Davies, 2011) and the upper range of care seeking reported in veteran and military care-seeking studies internationally. In examining the time taken to seek care after onset of a mental health concern, importantly, 45% of Transitioned ADF members with a concern sought care within three months of onset of that concern, and another 25% between three months and a year. Of some contrast to the findings above is that for those with a probable 30-day disorder, only 37% sought care within three months of being concerned and 18% waited three or more years. Some implications of delayed care seeking are the potential worsening of symptoms or progression of disorder with the passage of time – a factor that may also contribute to delayed-onset posttraumatic stress disorder, which has been shown to be more common in military populations.

The need for longitudinal analysis

The findings from the Transition and Wellbeing Research Programme to date highlight several key issues:

- Consistent with prior reports, military personnel who have transitioned to civilian life report higher rates of mental health difficulties than those who are currently serving in the military.
- There appears to be a period in the five years after departure from the ADF in which personnel are vulnerable to experiencing the onset or worsening of psychological problems.
- Although most Transitioned ADF who are concerned about their mental health do seek mental health assistance within months of perceiving a problem, the rates of problems in the Transitioned ADF personnel suggest that many of these problems persist.

Several outstanding questions arise from these analyses that require longitudinal analysis:

- To address the issue of how transition impacts on the mental health of ADF personnel, it is necessary to map the *course* of mental health in Transitioned ADF personnel *in relation* to their mental health during the years in the ADF. It is only through the examination of how the mental health of members changes when they move from active service to civilian life, that the impact of transition can be more fully understood.
- If the ADF and the Department of Veterans' Affairs are to better identify personnel who may be at risk of developing mental health problems after transition, it is imperative to also identify factors that can predict altered mental health status across the transition period. The clarification of potential predictors can only be achieved through longitudinal study of the change in mental health between active service and transition, and examination of factors that may predict these changes.

Aims and structure of report

The Australian and international literature highlights the need for comprehensive research on the mental health and wellbeing of members who have transitioned from full-time military service, including examining protective and risk factors. Accordingly, the major goals of the current report are to (a) map the changing course of mental health in ADF personnel from active military service to transition, and (b) identify predictors of this change in mental health over time.

Aims of this report

The primary aims of the *Mental Health Changes Over Time: a Longitudinal Perspective* report, including this summary report, are to:

- examine the longitudinal course of mental disorder and symptoms among a cohort of ADF members who previously participated in the Military Health Outcomes Program
- explore a range of potential demographic, service-related and transition-related predictors of the course of mental health outcomes between active service and transition.

Structure of this report

This report is a summary of the key findings of the *Mental Health Changes Over Time: a Longitudinal Perspective* report. This summary report provides an overview of the time course of mental health functioning in ADF personnel across the 2010–2015 period, with the focus on comparing mental health changes among Transitioned and Regular ADF personnel in 2015 *relative to their mental health status in 2010*. It will initially briefly identify the key demographic and service factors of the longitudinal cohort. It will then provide an overview of the 2010 and 2015 unweighted prevalence rates of mental disorder among the Transitioned and Regular ADF personnel in the longitudinal cohort. It is important to note that prevalence rates described in the current report are based on unweighted data, whereas the results in the *Mental Health Prevalence Report* are based on weighted data. In this sense, the estimated prevalence rates in the *Mental Health Prevalence Report* may be considered more reliable at a population level than the unweighted rates reported here. The emphasis in the current report is on the shifts in mental health status over time. Self-reported mental health problems are then examined, including the migration from no, subsyndromal, and probable disorder in 2010 to the different levels of disorder in 2015, for both Transitioned and Regular ADF personnel. Predictive analyses are then reported that explore certain factors in 2010 that may contribute to mental health status in 2015. Finally, these findings are discussed in terms of current knowledge about the course of mental health, and possible implications for the Department of Veterans' Affairs and the ADF in planning mental health strategies for the future.

Summary of key findings

The Transition and Wellbeing Research Programme addresses key research priorities of both the Department of Veterans' Affairs and the Department of Defence over three studies: the Mental Health and Wellbeing Transition Study, the Impact of Combat Study and the Family Wellbeing Study.

The current report focuses on the shifts in mental health status over a five-year period (2010–2015) in those who have transitioned out of regular 'full-time' service compared to those who remain in the Regular ADF. Similar to other international military and veteran studies, results indicate that most people report good mental health following discharge from active military service, with some individuals, particularly those who remain in the ADF, even showing a remission in symptoms to the point where they had no disorder in 2015. Of those who do go on to develop problems, anxiety disorders and posttraumatic stress disorder were the disorder types that were most likely to worsen following transition (most likely as a function of sensitisation of neural processes that occur following initial exposure to stressful events). The risk of worsening mental health problems was heightened if there were indications of risk of these problems during ADF service. This pattern was consistent for depressive disorders, anger and suicidality, indicating that psychologically healthier individuals tend to remain in the ADF, whereas those who are more symptomatic are more likely to discharge. Alcohol disorders, in contrast, showed a slightly different pattern. Although there was a significant increase in the rate of alcohol abuse disorder in Transitioned ADF members relative to Regular ADF members, this level of difference was not apparent during ADF service in 2010, indicating that the higher rate of alcohol abuse in those who transitioned out of the ADF cannot be attributed to drinking habits during military service.

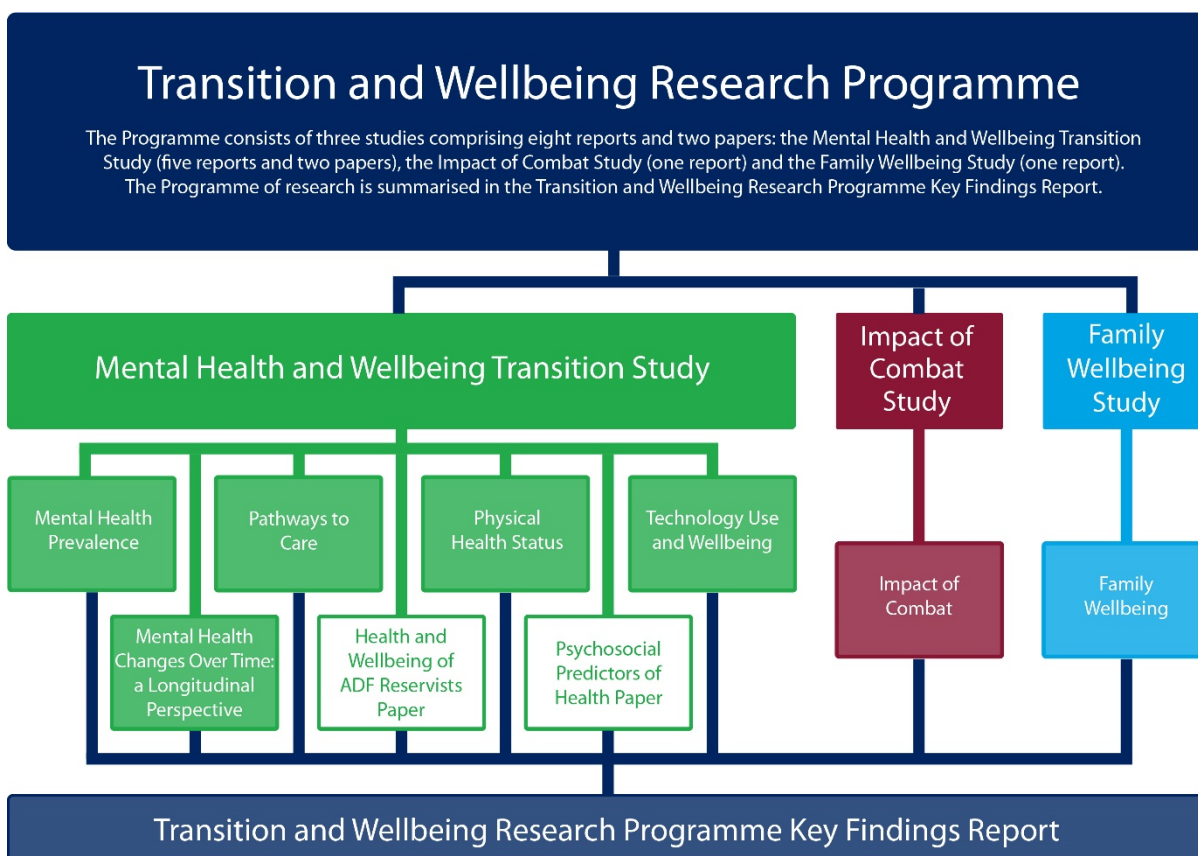
Results of this study highlight the importance of early intervention for all disorder types while personnel are still active serving ADF members (in order to treat those who already have a disorder and to prevent the worsening of symptoms from subsyndromal to disorder over time). Not only does this have the potential to reduce any subsequent adverse impacts of a difficult transition, but it may also assist ADF members to stay and thrive in active service. Additionally, these findings point to the need for early intervention following transition in those with signs of psychological disorder to reduce these problems before they become chronic and more resistant to management. In this context, it is important to note that the *Pathways to Care Report* (Forbes et al., 2018) found that the help seeking of members who transition out of the ADF was quite high, especially in the initial 12 months after discharge. Despite this, there was evidence that there was inadequate engagement with evidence-based treatments. This underscores the need for interventions offered to Transitioned ADF to be evidence-based to optimise the likelihood that they will receive the best care available.

1 Background

The Transition and Wellbeing Research Programme (the Programme) (Figure 1) is the most comprehensive study undertaken in Australia that examines the impact of military service on the mental, physical and social health of:

- serving and ex-serving Australian Defence Force (ADF) members, including those who have been deployed in contemporary conflicts
- their families.

Figure 1 Transition and Wellbeing Research Programme overview



This research further extends and builds on the findings of the world-leading research conducted with current serving members of the ADF in the 2010 Military Health Outcomes Program.

This current research, conducted in 2015, arises from the collaborative partnership between the Department of Veterans' Affairs (DVA) and Department of Defence. It aims to implement the Government's goal of ensuring that current and future policy, programs and services are responsive to the current and emerging health and wellbeing needs of serving and ex-serving ADF members and their families before, during and after transition from military life.

Ten objectives were developed to guide the Programme. The objectives are being realised through three studies comprising eight reports: the Mental Health and Wellbeing Transition Study (five reports and two papers), the Impact of Combat Study (one report), the Family Wellbeing Study (one report) and the Transition

and Wellbeing Research Programme Key Findings Report, which summarises the research, as Figure 1 shows. Table 1 shows which reports and papers deliver on the objectives. This summary report, on the findings of the *Mental Health Changes Over Time: a Longitudinal Perspective* report, addresses the sixth research objective, which is to conduct predictive modelling of the trajectory of mental health symptoms/disorder of Transitioned ADF and 2015 Regular ADF, removing the need to rely on estimated rates.

Table 1 Transition and Wellbeing Research Programme objectives and reports

Programme objectives	Corresponding reports and papers
1. Determine the prevalence of mental disorders among ADF members who have transitioned from Regular ADF service between 2010 and 2014.	<i>Mental Health Prevalence Report</i>
2. Examine self-reported mental health status of Transitioned ADF and the 2015 Regular ADF.	
3. Assess pathways to care for Transitioned ADF and the 2015 Regular ADF, including those with a probable 30-day mental disorder.	<i>Pathways to Care Report</i>
4. Examine the physical health status of Transitioned ADF and the 2015 Regular ADF.	<i>Physical Health Status Report</i>
5. Investigate technology and its utility for health and mental health programmes including implications for future health service delivery.	<i>Technology Use and Wellbeing Report</i>
6. Conduct predictive modelling of the trajectory of mental health symptoms/disorder of Transitioned ADF and the 2015 Regular ADF, removing the need to rely on estimated rates.	<i>Mental Health Changes Over Time: a Longitudinal Perspective Report</i>
7. Investigate the mental health and wellbeing of currently serving 2015 Ab-initio Reservists.	<i>The Health and Wellbeing of ADF Reservists Paper</i>
8. Examine the factors that contribute to the wellbeing of Transitioned ADF and the 2015 Regular ADF.	<i>Psychosocial Predictors of Health Paper</i>
9. Follow up on the mental, physical and neurocognitive health and wellbeing of participants who deployed to the Middle East Area of Operations between 2010 and 2012.	<i>Impact of Combat Report</i>
10. Investigate the impact of ADF service on the health and wellbeing of the families of Transitioned ADF and the 2015 Regular ADF.	<i>Family Wellbeing Study</i>
All objectives	<i>Transition and Wellbeing Research Programme Key Findings Report</i>

Two eminent Australian research institutions, one specialising in trauma and the other in families, have led the research program. The Centre for Traumatic Stress Studies at the University of Adelaide conducted the Mental Health and Wellbeing Transition Study and the Impact of Combat Study, and the Australian Institute of Family Studies conducted the Family Wellbeing Study.

Their research expertise is enhanced through partner institutions from Monash University, the University of New South Wales, Phoenix Australia – Centre for Posttraumatic Mental Health and, until June 2016, the Young and Well Cooperative Research Centre, the work of which is being continued at the University of Sydney.

Through surveys and interviews, the researchers engaged with a range of ex-serving and serving ADF members, including:

- ADF members who transitioned from the Regular ADF between 2010 and 2014 (including Ex-Serving, Active and Inactive Reservists)
- a random sample of Regular ADF members serving in 2015
- a sample of Ab-initio Reservists serving in 2015 (who have never been full-time ADF members)
- 2015 Regular ADF and Transitioned ADF members who participated in the 2010 Military Health Outcomes Program
- family members nominated by the above.

DVA and the Department of Defence thank the current and ex-serving ADF members and their families who participated in this research, for sharing your experiences and insights. Your efforts will help inform and assist the ways you, your colleagues, friends and families, as well as those who come after you, can best be supported during and after a military career.

2 Methodology

2.1 Study design

A two-phase data collection design was used in this study. In phase 1, Transitioned ADF and 2015 Regular ADF members were screened for mental health problems, psychological distress, physical health problems, wellbeing factors, pathways to care and occupational exposures using a 60-minute self-report questionnaire, which was completed online or in hard copy. Each participant received a slightly different questionnaire, which was relevant to their current ADF status – Transitioned ADF, 2015 Regular ADF or Ab initio Reservist – and took into account demographics, and service and deployment history. However, the core-validated measures of psychological and physical health remained the same and, where possible, replicated the measures previously administered as part of the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS). This component of the design is critical to making longitudinal comparisons across time and highlights the importance of using a consistent approach to research design for military and veteran populations over time.

In phase 2, a subsample of Transitioned ADF members surveyed in phase 1 were selected to participate in a one-hour diagnostic telephone interview using the Composite International Diagnostic Interview Version 3 (CIDI 3.0) (Kessler & Ustun, 2004). This interview was the same as that conducted in 2010, and assessed mental disorders based on the definitions and criteria of two classification systems: the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) and the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) (World Health Organization, 1994). For this report, ICD-10 diagnostic criteria were reported to be consistent with the 2010 MHPWS and the 2007 National Survey of Mental Health and Wellbeing conducted by the Australian Bureau of Statistics (Australian Bureau of Statistics, 2008).

2.2 Samples

The current report utilises one of the Programme's six overlapping samples: the MHPWS sample. This longitudinal cohort comprises all individuals who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study component of the Military Health Outcomes Program (MilHOP). Only participants with MilHOP survey and/or CIDI data who also completed a survey and/or CIDI as part of the Transition and Wellbeing Research Programme, and who consented as part of the current study to have their data linked back to the MilHOP data, were included in the longitudinal cohort for the current report.

This sample comprised two groups:

- **Transitioned ADF:** ADF members who participated in the 2010 MHPWS as a Regular ADF member but have since transitioned
- **2015 Regular ADF:** ADF members who participated in the 2010 MHPWS as a Regular ADF member and have remained in the ADF as a Regular member in 2015.

2.2.1 2015 Transition and Wellbeing Research Programme survey eligibility

A total of 20,908 individuals who participated in the 2010 MHPWS component of the MilHOP were invited to complete a survey as part of the current investigation. This included ADF members who participated in the 2010 MHPWS as a Regular ADF member and have since transitioned (MHPWS Transitioned ADF) and individuals who participated in the 2010 MHPWS as a Regular ADF member but have remained a Regular ADF member (MHPWS 2015 Regular ADF).

2.2.2 2015 Transition and Wellbeing Research Programme CIDI eligibility

All 2,684 MHPWS participants who were interviewed in 2010 were eligible to participate in a CIDI again in 2015. This included participants belonging to the stratified 2010 MHPWS CIDI sample as well as the 2010 duty of care CIDI sample (both 2010 samples are described below). However, due to budgetary constraints, only 1,085 of the larger 2,684 sample were invited to complete a CIDI as part of the current investigation.

2010 MHPWS stratified CIDI sample (sample used in MHPWS report)

Participants who were invited to participate in a CIDI as part of the Mental Health Prevalence and Wellbeing Study in 2010 were selected via stratified random sampling. Strata were determined according to participants' scores on the Posttraumatic Stress Disorder Checklist – civilian version (PCL-C) and the Alcohol Use Disorders Identification Test (AUDIT) in order to ensure a cross-section of low, medium and high scorers on these measures. The sample was stratified according to sex and Service to ensure adequate representation of these factors in the final sample. Participants were ranked by survey completion date and then randomly allocated to the interviewers. Fifteen per cent of the respondents (n = 3,688) were offered an interview and approximately half of them (n = 1,798) accepted the offer.

2010 duty of care CIDI sample

In addition to the 1,798 participants who were selected to complete a CIDI in 2010 based on predetermined stratification variables (AUDIT, PCL-C, sex, Service), a duty of care protocol was implemented to ensure that ADF members who scored highly on self-report measures of distress or who reported suicidal ideation in the self-report booklet were offered the opportunity to have a more thorough assessment of their mental health symptoms.

2.3 Response rates

2.3.1 Survey responders

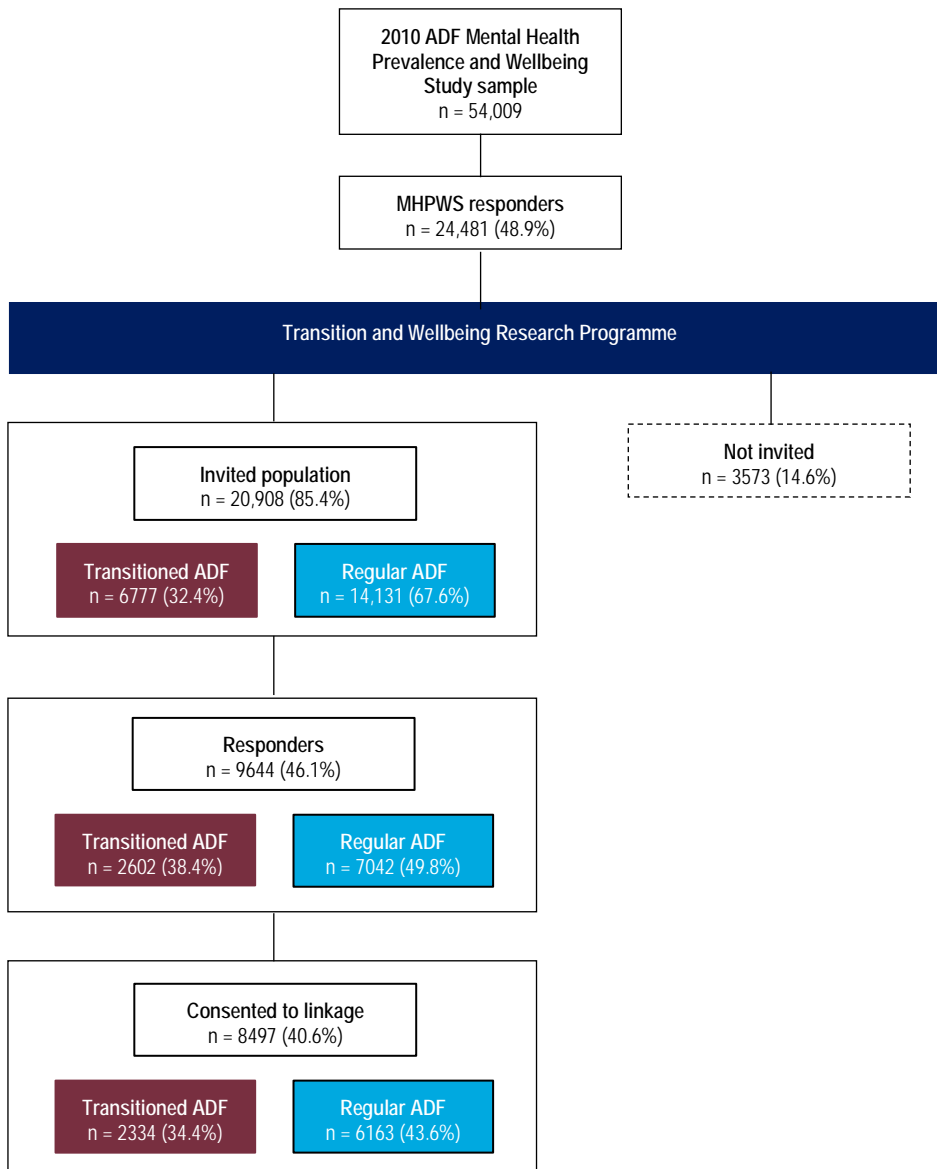
Figure 2 and Table 2 show the total populations for the Transitioned ADF and the 2015 Regular ADF, the number from each population who were invited to participate in the study, and the proportion of those invited who responded.

As can be seen in Figure 2, the MHPWS sample consisted of 54,009 individuals, of whom 24,481 (48.9%) responded to the study. Of these responders, 20,908 (85.4%) were invited to participate in the Transition and Wellbeing Research Programme. This comprised 6,777 (32.4%) Transitioned ADF and 14,131 (67.6%) Regular ADF. Of those invited, 2,602 (38.4%) of Transitioned ADF and 7,042 (49.8%) of Regular ADF responded to the Transition and Wellbeing Research Programme survey. This sample was further reduced by the need to consent to the linkage of data at the two time points. The final sample comprised 8,497 (40.6% of invited) responders – 2,334 (34.4%) Transitioned ADF and 6,163 (43.6%) Regular ADF who responded at both time points and provided consent to link their data.

Table 2 presents the unweighted demographic characteristics of Transitioned ADF and 2015 Regular ADF survey respondents. In general, response rates increased with age, with older age groups more likely to respond than the younger age groups for both Transitioned ADF and 2015 Regular ADF. Hence, responders were older than the invited population. When comparing Transitioned ADF and 2015 Regular ADF, more Transitioned ADF fell into the 58+ age group (18.0% vs 2.7%) and more 2015 Regular ADF fell into the 38 to 47 age group (38.1% vs 27.8%). The other age groups had similar response rates across both Transitioned ADF and 2015 Regular ADF.

In the Transitioned ADF, 19.9% of survey responders were Navy, 53.5% were Army and 26.6% were Air Force. For the 2015 Regular ADF, 23.6% of survey responders were Navy, 42.2% were Army and 34.3% were Air Force. When response rates in the different Services were compared, Transitioned Air Force members were most likely to respond (37.5%), followed by Army (34.4%) and Navy members (31.0%). In the 2015 Regular ADF, all three Services had similar response rates. Responders very closely reflected the invited population.

Figure 2 Survey response rates for Transitioned ADF and 2015 Regular ADF



Consistent with the invited populations, the responder samples were predominantly male. Response rates were similar for Transitioned ADF males (34.4%) and females (34.5%), and 2015 Regular ADF males (44.1%) were slightly more likely to respond than females (41.3%).

Survey responders from the Transitioned ADF comprised 33.2% Officers, 54.6% Non-Commissioned Officers and 12.2% Other Ranks. In the 2015 Regular ADF, there was a similar distribution, with 40.7% Officers, 54.6% Non-Commissioned Officers and 4.7% Other Ranks. The Transitioned ADF and 2015 Regular ADF had similar response rates for Officers, but the Transitioned ADF had lower response rates for Non-Commissioned Officers and Other Ranks. In both groups, the lower ranks were the poorest responders and were underrepresented in responders compared to the invited population.

Not surprisingly, Transitioned ADF were more likely to be unfit on transition (29.8%) compared to the 2015 Regular ADF population (15.8%). Transitioned ADF who were unfit had a response rate of 34.4% compared to 46.0% in the 2015 Regular ADF. Overall, with the exception of age, responders very closely reflected the invited population.

Table 2 Unweighted demographic characteristics and survey response rates for Transitioned ADF and 2015 Regular ADF

Demographic characteristics	Transitioned ADF n = 6777					2015 Regular ADF n = 14,131				
	Invited		Responders		Response rate	Invited		Responders		Response rate
	n	%	n	%	%	n	%	n	%	%
Age group										
18–27	567	8.4	82	3.5	14.5	699	4.9	156	2.5	22.3
28–37	2429	35.8	566	24.3	23.3	5056	35.8	1786	29.0	35.3
38–47	1795	26.5	649	27.8	36.2	5015	35.5	2348	38.1	46.8
48–57	1252	18.5	616	26.4	49.2	2982	21.1	1704	27.6	57.1
58+	707	10.4	421	18.0	59.5	268	1.9	169	2.7	63.1
Service										
Navy	1499	22.1	465	19.9	31.0	3332	23.6	1452	23.6	43.6
Army	3624	53.5	1248	53.5	34.4	5861	41.5	2599	42.2	44.3
Air Force	1654	24.4	621	26.6	37.5	4938	34.9	2112	34.3	42.8
Sex										
Male	5759	85.0	1983	85.0	34.4	11,810	83.6	5204	84.4	44.1
Female	1018	15.0	351	15.0	34.5	2321	16.4	959	15.6	41.3
Rank										
Officer	1613	23.8	775	33.2	48.0	5122	36.2	2508	40.7	49.0
NCO	3400	50.2	1274	54.6	37.5	7780	55.1	3364	54.6	43.2
Other Ranks	1764	26.0	285	12.2	16.2	1229	8.7	291	4.7	23.7
Medical fitness[#]										
Fit	4752	70.1	1638	70.2	34.5	12,012	85.0	5188	84.2	43.2
Unfit	2025	29.9	696	29.8	34.4	2119	15.0	975	15.8	46.0
Total	6777	100.0	2334	100.0	34.4	14,131	100.0	6163	100.0	43.6

NCO = Non-Commissioned Officer

Refer to glossary for a definition of 'medical fitness'.

Notes

Unweighted data.

Response rates are calculated as the proportion of those invited to participate in the study.

Missing: 2015 Regular ADF: Invited age group – 111 (0.8%). Transitioned ADF: Invited age group – 27 (0.4%).

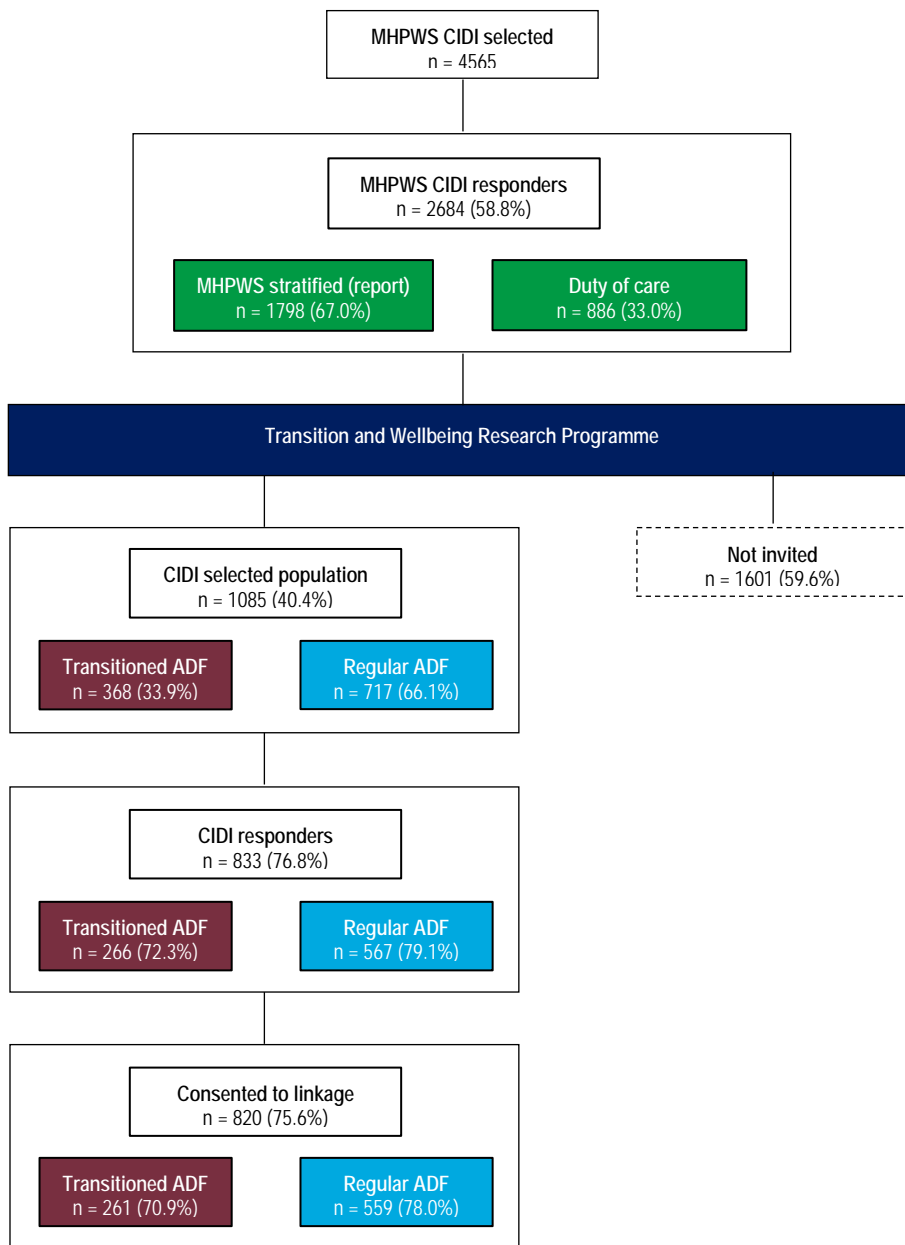
2.3.2 Composite International Diagnostic Interview responders

Figure 3 and Table 3 show the total populations for the Transitioned ADF and the 2015 Regular ADF, the number from each population who were invited to participate in a CIDI, and the proportion of those invited who responded.

As can be seen in Figure 3, the sample selected for a MilHOP CIDI consisted of 4,565 individuals, of whom 2,684 (58.8%) completed a CIDI. Of these responders, 1,085 (40.4%) were selected to participate in a Transition and Wellbeing Research Programme CIDI. This comprised 368 (33.9%) Transitioned ADF and 717 (66.1%) Regular ADF. Of those selected, 266 (72.3%) of Transitioned ADF and 567 (79.1%) of Regular ADF completed a Transition and Wellbeing Research Programme CIDI. The final sample comprised 820 (75.6% of CIDI selected) responders – 261 (70.9%) Transitioned ADF and 559 (70.8%) Regular ADF who responded at both time points and provided consent to link their data.

Table 3 also presents the unweighted demographic characteristics of Transitioned ADF and 2015 Regular ADF CIDI responders. Response rates for the CIDI were higher in the older age groups, more so for Transitioned ADF than Regular ADF. However, this was much less pronounced than in survey responders. The age distribution of CIDI responders resembled the invited population. More Transitioned ADF fell into the 58+ age group (28.4% vs 3.2%) compared to Regular ADF, and more 2015 Regular ADF fell into the 38 to 47 age group (38.8% vs 22.6%) and the 28 to 37 age group (22.0% vs 10.3%). The other age groups had similar response rates across both Transitioned ADF and 2015 Regular ADF.

Figure 3 CIDI response rates for Transitioned ADF and 2015 Regular ADF



In the Transitioned ADF, 17.6% of CIDI responders were Navy, 47.1% were Army and 35.2% were Air Force. For the 2015 Regular ADF, 22.7% of CIDI responders were Navy, 39.0% were Army and 38.3% were Air Force. When response rates in the different Services were compared, results showed a similar pattern to survey responders. Transitioned Air Force members were most likely to respond (78.6%), followed by Army (68.3%) and Navy members (64.8%). In the 2015 Regular ADF, all three Services had similar response rates. CIDI responders closely reflected the invited population.

Consistent with the invited populations, the responder samples were predominantly male. Response rates were similar for 2015 Regular ADF males (78.4%) and females (76.1%), and Transitioned ADF males (71.6%) were slightly more likely to respond than females (66.7%).

CIDI responders from the Transitioned ADF comprised 41.8% Officers, 52.5% Non-Commissioned Officers and 5.7% Other Ranks. In the 2015 Regular ADF, Officers and Non-Commissioned Officers were more similar, with 47.0% Officers, 49.6% Non-Commissioned Officers and 3.4% Other Ranks completing a CIDI. The Transitioned ADF had slightly lower response rates for Officers and Non-Commissioned Officers compared to 2015 Regular ADF, and substantially lower for Other Ranks. In both groups, the lower ranks were the poorest CIDI responders.

Like survey responders, Transitioned ADF CIDI responders were more likely to be unfit on transition from Regular ADF (41.8%) compared to the 2015 Regular ADF population (23.4%). Transitioned ADF who were unfit had a response rate of 67.3% compared to a higher 79.4% in the 2015 Regular ADF. CIDI responders very closely reflected the invited population.

Table 3 Unweighted demographic characteristics and CIDI response rates for Transitioned ADF and 2015 Regular ADF

Demographic characteristics	Transitioned ADF n = 368					2015 Regular ADF n = 717				
	Invited		Responders		Response rate	Invited		Responders		Response rate
	n	%	n	%	%	n	%	n	%	%
Age group										
18–27	7	1.9	–#	1.5	57.1	5	0.7	–#	0.5	60.0
28–37	53	14.4	27	10.3	50.9	168	23.4	123	22.0	73.2
38–47	99	26.9	59	22.6	59.6	275	38.4	217	38.8	78.9
48–57	123	33.4	97	37.2	78.9	245	34.2	198	35.4	80.8
58+	85	23.1	74	28.4	87.1	24	3.3	18	3.2	75.0
Service										
Navy	71	19.3	46	17.6	64.8	166	23.2	127	22.7	76.5
Army	180	48.9	123	47.1	68.3	279	38.9	218	39.0	78.1
Air Force	117	31.8	92	35.2	78.6	272	37.9	214	38.3	78.7
Sex										
Male	320	87.0	229	87.7	71.6	583	81.3	457	81.8	78.4
Female	48	13.0	32	12.3	66.7	134	18.7	102	18.2	76.1
Rank										
Officer	139	37.8	109	41.8	78.4	311	43.4	263	47.0	84.6
Non-Commissioned Officer	197	53.5	137	52.5	69.5	377	52.6	277	49.6	73.5
Other Ranks	32	8.7	15	5.7	46.9	29	4.0	19	3.4	65.5
Medical fitness*										
Fit	206	56.0	152	58.2	73.8	552	77.0	428	76.6	77.5
Unfit	162	44.0	109	41.8	67.3	165	23.0	131	23.4	79.4
Total	368	100.0	261	100.0	70.9	717	100.0	559	100.0	78.0

Cell sizes less than 5 have been suppressed.

* Refer to glossary for a definition of 'medical fitness'.

Notes

Unweighted data.

Response rates are calculated as the proportion of those invited to participate in the study.

Missing: Transitioned ADF: Invited age group – 1 (0.3%).

2.4 Statistical analysis

Analyses were conducted in Stata version 13.1 or SAS version 9.2 or 9.4. All analyses were conducted using raw totals, means and proportions, except where specified otherwise, with *no statistical weighting used*. Standard errors were produced using linearisation, except where specified otherwise.

All analyses were restricted to those Programme respondents who had data available at both time points (2010 and 2015) and who consented to linkage of their data. In the case of multivariate logistic regression models, analysis samples were further restricted to include only those respondents with all data items used in the analyses.

Descriptive analyses present totals, means and proportions, with between-group differences described. Where differences were statistically tested, logistic regressions were performed, and odds ratios and 95% confidence intervals presented.

Longitudinal predictive analyses were performed on the entire longitudinal cohort (Transitioned and Regular ADF combined), which was divided into three subsamples: those with no disorder in 2010, those with subsyndromal disorder in 2010, and those with probable disorder in 2010 (as specified below), with separate univariate then multivariate multinomial logistic regression models performed for each.

2.5 Measures used in this report

2.5.1 Self-report survey

Participants completed the following measures in 2010 as part of the Mental Health Prevalence and Wellbeing Study (MHPWS), and then again in 2015 as part of the current investigation:

- **Psychological distress:** The Kessler Psychological Distress 10-item scale (K10) (Kessler et al., 2002), a short, easily administered screening instrument for psychological distress.
- **Posttraumatic stress symptoms:** The Posttraumatic Stress Disorder Checklist – civilian version (PCL-C) (Weathers, Litz, Herman, Huska & Keane, 1993), a 17-item scale for measuring posttraumatic stress disorder (PTSD) symptoms.
- **Alcohol use and problem drinking:** The Alcohol Use Disorders Identification Test (AUDIT) (Saunders, Aasland, Babor, de la Fuente & Grant, 1993), a brief self-report instrument that is widely used in epidemiological and clinical practice for defining at-risk patterns of drinking.
- **Depressive symptoms:** The Patient Health Questionnaire 9-item scale (PHQ-9) (Kroenke, Spitzer & Williams, 2001), the 9-item depression module of the Patient Health Questionnaire.
- **Suicidality:** A short four-item measure examining suicidal thoughts, plans and attempts adapted from the National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2008).
- **Anger symptoms:** The Dimensions of Anger Reactions 5-item scale (DAR-5) (Forbes et al., 2004), assessing anger frequency, intensity, duration, and anger’s perceived negative impact on social relationships in the past four weeks.
- **Physical violence:** Two items asking how often the participant got into a fight with someone and hit the person, and threatened someone with physical violence in the last month. These items were taken from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Two sets of cut-offs on the K10, PCL-C and AUDIT were developed as part of the 2010 MHPWS (McFarlane et al., 2011) and are utilised in the current report: the optimal epidemiological cut-off and the optimal screening cut-off. The epidemiological cut-offs give the ‘closest estimate of the true prevalence of 30-day ICD-10 disorder as measured by the CIDI’ (McFarlane et al., 2011, p. 103). The screening cut-offs reflect a broader spectrum of moderate to severe symptoms rather than diagnosable disorder, allowing for potential early intervention.

Where scores on the relevant measures fall above the optimal screening cut-off, but below the optimal epidemiological cut-off, this is referred to as ‘subsyndromal’. Where scores on the relevant measures are above both the optimal screening and epidemiological cut-offs, this is referred to as ‘probable disorder’.

The additional survey measures outlined below are examined in *Mental Health Changes Over Time: a Longitudinal Perspective*, Chapter 6: Longitudinal Course of Probable Mental Disorder in the MHPWS Population.

2010 ADF Mental Health Prevalence and Wellbeing Study measures

- **Length of service** – Participants were asked, ‘To the nearest year, how long have you served with the Australian Defence Force as a Regular?’ They entered the number of years they had served.
- **Significant intimate relationship** – Participants were asked, ‘Are you currently in a significant intimate relationship?’ Response options were ‘yes’ or ‘no’.
- **Satisfaction with marriage** – Participants were asked, ‘How satisfied are you with your marriage/relationship?’ They responded on a 5-point scale from ‘extremely satisfied’ to ‘extremely dissatisfied’.
- **Resilience** – Resilience was assessed using two questions from the Connor-Davidson Resilience Scale (CD-RISC 2) (Connor & Davidson, 2003). These two items asked how often the participant felt they were able to adapt to change, and tended to bounce back after hardship, in the past 30 days. Statements are rated on a 5-point scale from ‘not true at all’ to ‘true nearly all the time’.
- **Help seeking** – Help seeking was assessed using the K10 Plus (Kessler et al., 2002), which comprises four questions asked after the K10 to assess functioning and related factors. One K10 Plus item was used to assess help seeking: ‘In the past four weeks, how many times have you seen a doctor or any other health professional about these feelings?’ Participants entered the number of times.

2015 Transition and Wellbeing Research Programme measures

- **Lifetime exposure to traumatic events** – Lifetime exposure to trauma was taken from the posttraumatic stress disorder module of the CIDI 3.0 (Haro et al., 2006). (For a list of traumatic events, refer to ‘lifetime trauma’ in the glossary.) For each applicable event, participants were required to provide further information regarding the following: their age the first and last time the event took place, the number of times each event took place, and the number of times each event was related to their ADF service. Participants were then required to indicate which of the events they indicated ‘yes’ to was their worst event.
- **Deployment exposure** – Participants were presented with a list of exposures and asked to indicate how many times they had experienced each one on deployment during their military career and since 2011. Response categories ranged from ‘never’ to ‘10+ times’. They were asked about 12 traumatic deployment exposures. Examples included exposure to serious fear of encountering an improvised explosive device, discharge of weapon in direct combat, and handling or seeing dead bodies. Items in this section were drawn from the Middle East Area of Operations Census Study (Dobson et al., 2012).

2.5.2 Composite International Diagnostic Interview

Twelve-month and lifetime ICD-10 rates of the following mental disorders were assessed using the CIDI 3.0 (Kessler & Ustun, 2004): depressive episode, dysthymia, bipolar affective disorder, panic attack, panic disorder, agoraphobia, social phobia, specific phobia, generalised anxiety disorder, obsessive-compulsive disorder, posttraumatic stress disorder, adult separation disorder, harmful alcohol use and dependence, suicidal ideation and behaviour, and intermittent explosive disorder.

In the current report, individual ICD-10 disorder prevalence rates are presented with hierarchy rules applied in order to be consistent with Australian national rates. This range of mental disorders was the same as that presented by the 2007 National Survey on Mental Health and Wellbeing (Slade et al., 2007) and included in the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

3 How to interpret and discuss the findings in this report

Rates of disorder: All analyses were conducted using raw totals, means and proportions, except where specified otherwise, with no statistical weighting used. Standard errors were produced using linearisation, except where specified otherwise.

Confidence intervals: Confidence intervals express the degree of uncertainty associated with a sample statistic. Where the value of interest is a rate, the confidence intervals show the range of error of that rate. In general, confidence intervals that are close to the rate value reflect the precision of the rate, while those that are very wide reflect rate imprecision. Where there are wide confidence intervals, associated rates should be interpreted cautiously, with the upper and lower limits considered the top and bottom range of possible precise values.

Standard errors: Like confidence intervals, standard errors indicate the range of error in an average score that is presented.

Between-group comparisons: When comparing outcomes between groups, the overlap in confidence intervals provides an indication of between-group differences. Where there is significant overlap, any apparent difference is more likely to reflect measurement or estimate error.

Odds ratios: When examining a specific health outcome, there can be differences in the rates between two groups (for example, 2015 Regular ADF and Transitioned ADF) due to differences in factors other than transition status – such as sex, age, Service or rank – across the comparison groups, particularly if these other factors are associated with the health outcome. If this is the case, these factors are potentially confounders, and one method of reducing confounding is to employ a logistic regression model that controls (for example, adjusts) for these factors. The statistical output from a logistic regression model is an odds ratio (OR). An OR denotes the odds of a particular group (for example, Transitioned ADF) having a specific health outcome compared to a reference group (for example, 2015 Regular ADF).

An OR of greater than one indicates increased odds of having a particular health outcome compared to the reference group, and an OR of less than one suggests less likelihood of having a particular health outcome. For example, an OR of 1.7 for the Transitioned ADF (compared to 2015 Regular ADF) suggests that members of the Transitioned ADF have 70% increased odds of having that particular health outcome. Conversely, an OR of 0.7 suggests that Transitioned ADF members are 30% less likely than 2015 Regular ADF members to have a particular health outcome. When an OR is greater than two, we can then say that Transitioned ADF members are twice as likely as 2015 Regular ADF to have a particular health outcome. Similarly, if the OR is greater than three, they would be three times as likely to have a particular health outcome, and so forth. Where the outcome has three levels, a reference category is selected, and the odds are of the outcome in comparison to that reference outcome. In the case of the longitudinal predictive modelling in this report, the key outcome variable has three levels (no disorder, subsyndromal disorder, probable disorder). In all models, the reference category is no disorder, with the odds of being subsyndromal compared to no disorder, or the odds of probable disorder compared to no disorder. The odds of subsyndromal disorder compared to probable disorder are not included in the models.

Significance: Where a between-group difference is discussed as significant in the text, this means that the difference between groups was statistically tested, adjusting for sex, age and Service, and the associated confidence intervals had no overlap between groups.

Caveats: The longitudinal sample should be considered an ‘enriched’ sample for the purposes of mental health outcomes due to two factors. First, selection into the Composite International Diagnostic Interview (CIDI)

component of the study at time point 1 was prioritised to detect disorder for the purposes of generating population-level prevalence estimates. Therefore, it oversampled individuals with high mental disorder symptoms. Second, the CIDI was also offered to sample members who scored highly on self-report measures of distress or who reported suicidal ideation. As the data in this report are not weighted to be representative, prevalence rates may be higher than expected due to the nature of the sample.

Glossary: Refer to the glossary for definitions of key terms in this report.

4 Socio-demographic characteristics of the longitudinal cohort

In order to fully understand how Transitioned ADF members are functioning in their civilian lives, it is important to consider their current socio-demographic profile, as well as the circumstances surrounding their transition. There are known risk factors for social disadvantage in the literature that can contribute to mental health issues (Australian Bureau of Statistics, 2008), including unemployment, incarceration, housing instability (including homelessness), and being in receipt of disability payments. Understanding the extent to which Transitioned ADF members are exposed to these factors can provide valuable insight into their overall mental, physical and social health.

The full details of the socio-demographic profile of the Transitioned ADF sample is reported in the *Mental Health Prevalence Report* (Van Hooff et al., 2018). In terms of the data pertinent to the longitudinal cohort, approximately one-third of Transitioned members remained as Active Reservists (38.4%), and another third (30.1%) remained as Inactive Reservists. Regardless of Reservist status, the majority reported transitioning between one and four years ago. Most Transitioned ADF requested their own discharge (57.7%), and one-fifth received medical discharges (18.6%). The most commonly reported reasons for transition were 'impact of service life on family' (11.0%), 'better employment prospects in civilian life' (6.2%), 'posting issues' (6.1%), 'physical health problems' (6.1%), and 'mental health problems' (5.9%). A large proportion of Transitioned ADF did not report their main reason for transition (47.1%).

Comparable proportions of Transitioned and Regular ADF members were in a relationship (91.7% vs 86.3%), and similar proportions had served more than 20 years in the ADF (48.1% vs 45.5%). However, more Transitioned than Regular ADF members had served less than eight years in the ADF (17.7% vs 6.7%). Importantly, just over one-half (55.3%) of Transitioned members reported civilian employment, and one-third (38.8%) reported that they had been unemployed for a period of at least three months since transition. The issue of one-third of veterans reporting unemployment represents a significant risk factor for mental health problems (Butterworth, Leach, McManus & Stansfeld, 2013; Butterworth et al., 2011). Of those reporting civilian employment, the most common industries were government administration and Defence (29.0%), transport and storage (9.1%), and health and community services (9.0%).

Similar proportions of Transitioned ADF and 2015 Regular ADF reported their highest level of education to be primary/secondary school (21.1% vs 20.6%) or a diploma (20.1% vs 22.9%). Slightly more Transitioned ADF reported completing a certificate than 2015 Regular ADF (26.6% vs 20.2%), and slightly more Regular ADF reported a university qualification as their highest level of education compared to Transitioned ADF (35.0% vs 30.9%).

Just under half of the Transitioned ADF reported joining an ex-service organisation or voluntary group. An extremely small proportion of the Transitioned ADF reported having been arrested (1.1%) or convicted (0.9%) since transitioning from Regular ADF service. Over 45% of Transitioned ADF members reported accessing DVA-funded treatment through either a DVA White Card (39.3%) or DVA Gold Card (5.9%). Finally, there were no differences between the Transitioned ADF and 2015 Regular ADF in relation to whether respondents reported having stable housing over the past two months.

5 Definition of key terms used in this report

Longitudinal cohort. Comprises all individuals who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) component of the Military Health Outcomes Program. All participants belonging to this longitudinal cohort, except those who had opted out of the current study, or not consented to being contacted for future research, were invited to complete a survey as part of the current investigation.

Twelve-month prevalence. Meeting diagnostic criteria for a lifetime ICD-10 mental disorder and then having reported symptoms in the 12 months before the interview.

Transitioned ADF. Population of ADF members who transitioned from full-time ADF service between 2010 and 2014, including those who transitioned into the Active and Inactive Reserves and those who had discharged completely (Ex-Serving).

2015 Regular ADF. ADF members who were serving full-time in the ADF in 2015.

No disorder. When scores on the relevant measures fall below both the optimal screening and epidemiological cut-off points, this is referred to as 'no disorder' in the current publication.

Subsyndromal disorder. Where scores on the relevant measures fall above the optimal screening cut-off, but below the optimal epidemiological cut-off, this is referred to 'subsyndromal disorder' in the current publication.

Probable disorder. Where scores on the relevant measures are above both the optimal screening and epidemiological cut-off points, this is referred to as 'probable disorder' in the current publication.

Refer to the glossary for a full list of key terms and definitions.

6 Key findings

Demographic characteristics of the longitudinal cohort

- Almost half of responders in both the Transitioned and Regular ADF longitudinal cohort reported serving 20+ years. More Transitioned ADF than Regular ADF reported serving for either 1 month to 9 years, or 20+ years.
- The most common type of discharge/resignation reported was 'own request', which was the case for more than half of the Transitioned ADF (57.7%).
- The second most common type of discharge was 'medical discharge', with almost one-fifth (18.6%) of Transitioned ADF reporting this type of discharge. The most commonly reported reasons for transition were 'impact of service life on family' (11.0%), 'better employment prospects in civilian life' (6.2%), 'posting issues' (6.1%), 'mental health problems' (6.1%), and 'physical health problems' (5.9%).
- 38.4% of Transitioned ADF responders remained in the ADF as Active Reservists and 30.1% as Inactive Reservists.
- Similar proportions of Transitioned ADF and Regular ADF reported their highest level of education to be primary/secondary school or a diploma. Marginally more Regular ADF reported a university qualification as their highest level of education (35.0% vs 30.9%).
- No differences existed between the groups regarding stable housing.
- Over half of the Transitioned ADF responders reported being engaged in civilian employment (55.3%), with the most common industries of employment being government administration and defence (29.0%), transport and storage (9.1%), and health and community services (9.0%).
- Of those who were not engaged in civilian employment, a considerable proportion reported a period of three months or longer in which they were unemployed (38.8%) since transitioning from the Regular ADF.
- Over 45% of Transitioned ADF members reported accessing DVA-funded treatment through either a DVA White Card (39.3%) or DVA Gold Card (5.9%).
- Just under half of the Transitioned ADF reported joining an ex-service organisation or voluntary group.

Twelve-month CIDI disorder in the longitudinal cohort

- In both 2010 and 2015, the most common mental disorders among the longitudinal cohort were anxiety disorders (32.6% in 2010 and 37.8% in 2015).
- Anxiety disorders were the only disorder category that showed a significant change over time, with a greater proportion of participants reporting anxiety disorders in 2015 (37.8%) compared to 2010 (32.6%).
- Those in the longitudinal cohort who had transitioned in 2015 had higher levels of anxiety disorder in both 2010 and 2015, compared to those who remained in the Regular ADF in 2015.
- Comparable proportions of Transitioned and Regular ADF had affective disorders in 2010 (Transitioned ADF: 18.3% vs Regular ADF: 21.1%) and 2015 (Transitioned ADF: 21.1% vs Regular ADF: 23.4%).
- Alcohol disorders were reported at relatively low rates overall, with no significant difference over time, with 6.5% reported in 2010 and 6.3% in 2015.

- Comparable proportions of Transitioned and Regular ADF had alcohol disorders in 2010 (7.7% vs 5.9%); however, those who had transitioned had higher rates in 2015 compared to those who remained in the Regular ADF (9.2% vs 5.0%).
- There were higher rates of posttraumatic stress disorder (PTSD) in 2010 among Transitioned ADF compared to Regular ADF (19.5% vs 10.6%), and this pattern was repeated in 2015 (24.5% vs 13.1%).
- Rates of any disorder were higher in both 2010 and 2015 for those members of the longitudinal cohort who had transitioned in 2015 compared to those who remained in the Regular ADF in 2015 (2010: 48.3% vs 39.0%; 2015: 51.7% vs 43.3%).
- Panic disorder rates were similar in 2010 among those who had transitioned compared to those who remained in the Regular ADF (5.4% vs 3.6%), but higher in 2015 among those who had transitioned (8.0% vs 2.3%). Similarly, rates of specific phobia in 2010 were similar among those who had transitioned compared to those remaining in the Regular ADF in 2015 (10.0% vs 8.4%), but a greater proportion of those who transitioned had a phobia in 2015 (15.7% vs 9.5%).
- Similarly, rates of specific phobia in 2010 were similar among those who had transitioned compared to those remaining in the Regular ADF in 2015 (10.0% vs 8.4%), but a greater proportion of those who transitioned had a phobia in 2015 (15.7% vs 9.5%).
- Rates of agoraphobia were greater in both 2010 and 2015 among those who transitioned compared to those who remained in the Regular ADF in 2015 (2010: 8.4% vs 3.9%; 2015: 14.9% vs 6.6%).
- Although rates of generalised anxiety disorder in 2010 were higher among those who had transitioned compared to those who remained in the Regular ADF in 2015 (4.6% vs 2.0%), they were similar between groups in 2015 (5.0% vs 5.5%) due to a larger increase among those who remained in the Regular ADF.
- The most common affective disorder in the longitudinal cohort was depressive episodes, with 13.8% meeting criteria for this disorder in 2010 and 13.4% in 2015. Dysthymia was the only affective disorder that showed a significant increase between 2010 and 2015 in the longitudinal cohort overall (2.2% vs 4.5%).
- Those who had transitioned had higher rates of dysthymia (7.3% vs 3.2%) in 2015 compared to those who remained in the Regular ADF (7.3% vs 3.2%).
- Alcohol harmful use was higher in 2010 among those who had transitioned compared to those who remained in the Regular ADF (4.6% vs 2.1%), and also higher in 2015 among those who had transitioned (3.4% vs 1.1%).
- Comparable proportions of Transitioned and Regular ADF personnel with no anxiety disorder in 2010 became new anxiety cases in 2015 (22.4% vs 24.0%). However, of those reporting any anxiety disorder in 2010, a greater proportion of those who transitioned compared to those remaining in the Regular ADF retained their disorder in 2015 (75.0% vs 62.9%).
- Regarding PTSD, a greater proportion of those who had transitioned (18.1%) became new cases in 2015 compared to those who remained in the Regular ADF (9.4%).
- Of those who had no alcohol disorder in 2010, a greater proportion of those who had transitioned compared to those who remained in the Regular ADF became new cases in 2015 (6.6% vs 3.4%). Among those who were cases in 2010, a greater proportion of those who had transitioned compared to those who remained in the Regular ADF retained their disorder in 2015 (40.0% vs 30.3%).
- Overall, the proportion of the longitudinal cohort with any new disorder in 2015 was similar among those who had transitioned (29.6%) and those who remained in the Regular ADF (27.6%). A higher proportion of those who had transitioned (75.4%) retained their disorder from 2010 to 2015 compared to those who remained in the Regular ADF (67.9%).

Self-reported mental health in the longitudinal cohort

Psychological distress (K10)

- On the Kessler Psychological Distress 10-item scale (K10), one-third (33%) of Transitioned ADF who had symptom levels that were subsyndromal in 2010 had subsyndromal distress in 2015. Around one-quarter (25.2%) had symptom levels indicating probable disorder in 2015. Among those who remained in the Regular ADF and had subsyndromal symptoms in 2010, 32.5% still had subsyndromal symptoms in 2015 and a smaller 17.5% had symptom levels indicating probable disorder.
- Of those with symptom levels indicating probable disorder on the K10 in 2010, a greater proportion of ADF members who transitioned out of the ADF still had probable disorder symptom levels in 2015 than those who remained in the ADF (58.0% vs 32.0%).

Posttraumatic stress disorder symptoms (PCL-C)

- Among those with no disorder symptom levels in 2010, a greater proportion of Transitioned compared to Regular ADF members had symptoms indicating probable disorder in 2015 (19.8% vs 1.4%).
- Among those with symptoms of probable disorder in 2010, again a greater proportion of Transitioned compared to Regular ADF members had probable disorder symptoms in 2015 (55.0% vs 17.7%). In contrast, similar proportions of Transitioned and Regular ADF members with subsyndromal PTSD symptoms in 2010 (19.6% and 14.9% respectively) still had subsyndromal PTSD symptoms in 2015 (42.0% and 39.5% respectively).

Alcohol use disorders (AUDIT)

- A greater proportion of Transitioned ADF compared to Regular ADF moved from no disorder symptoms in 2010 to subsyndromal symptom levels in 2015 (15.2% vs 9.2%), and a greater proportion worsened from no disorder symptoms to probable disorder symptoms (2.1% vs 0.2%). Proportionally more Transitioned ADF members, compared to Regular ADF members, with subsyndromal symptoms in 2010 worsened to symptom levels indicating probable disorder in 2015 (11.9% vs 4.2%).

Depression (PHQ-9)

- Proportionally more Transitioned ADF than Regular ADF members who had no disorder symptom levels in 2010 worsened to probable disorder symptom levels in 2015 (6.4% vs 1.8%). Similarly, proportionally more Transitioned ADF, compared to Regular ADF members, who reported subsyndromal symptom levels in 2010 worsened to probable disorder symptom levels in 2015 (23.1% vs 9.2%), and proportionally more Transitioned ADF, compared to 2015 Regular ADF, who had probable disorder symptom levels in 2010 still reported probable disorder symptom levels in 2015 (48.2% vs 31.0%).

Suicidality

- Among those who had transitioned, 12.3% reported suicidality in 2010, which more than doubled to 27.4% in 2015. Among those who remained in the Regular ADF, 7.5% reported suicidality in 2010 and 12.7% in 2015. There were proportionally more new cases of suicidality in 2015 in Transitioned compared to Regular ADF members (21.7% and 9.9%).

Anger symptoms (DAR-5)

- Relative to 2010 levels of anger, proportionally more Transitioned ADF compared to Regular ADF reported new cases of problematic anger in 2015 (10.4% vs 19.9%).

Physical violence

- More Transitioned ADF compared to Regular ADF reported being in fights in the last month, both in 2010 (2.5% vs 1.2%) and 2015 (2.5% vs 0.9%). Only 2.1% of Transitioned ADF members never reporting violence in 2010 reported new cases of violence in 2015.

Longitudinal course of probable mental disorder in the MHPWS population

- Longitudinal cohort members were more likely to worsen from no disorder in 2010 to subsyndromal disorder or probable disorder in 2015 if they:
 - were not Officers
 - were Navy members (compared to Air Force)
 - reported problematic anger in 2010, or
 - reported higher levels of deployment exposures or lifetime trauma.
- Those reporting higher resilience were less likely to move from no disorder to subsyndromal disorder.
- Reported suicidality in 2010 predicted progression from no disorder in 2010 to probable disorder in 2015.
- Longitudinal cohort members were more likely to worsen from subsyndromal disorder in 2010 to probable disorder in 2015 if, in 2010, they were not Officers, had problematic anger, or had a greater number of deployment exposures or lifetime traumatic event types.
- In terms of those with probable disorder in 2010, having more lifetime traumatic event types predicted shifting towards subsyndromal disorder or maintaining probable disorder in 2015. Older age predicted the shift to subsyndromal disorder; and problem anger, help seeking and deployment exposures predicted the maintenance of probable disorder.

7 Twelve-month CIDI disorder in the longitudinal cohort

This chapter examines 12-month International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) mental disorders in ADF members who transitioned from Regular ADF service between 2010 and 2014 (Transitioned ADF) compared to 2015 Regular ADF members within the longitudinal cohort. In addition to this cross-sectional comparison, disorder was also examined for both groups across two time points: the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS), and the 2015 Transition and Wellbeing Research Programme.

This chapter provides raw prevalence rates for three classes of ICD-10 mental disorder: anxiety disorder, affective disorder and alcohol disorder. Posttraumatic stress disorder (PTSD) is presented separately to demonstrate how it differs from other anxiety disorders. While PTSD is classed with anxiety disorders within the ICD-10 classification system, PTSD is now a separate category in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* (McFarlane, 2014).

It is important to note that data presented in the following tables are unweighted, and limited to Transition and Wellbeing Research Programme participants who consented to data linkage across the two time points and who completed a Composite International Diagnostic Interview (CIDI) in 2010 and 2015. CIDI data for the entire sample of Regular ADF members who completed a CIDI in 2010 are not presented as the data are unweighted and not representative of the Regular ADF. Due to the reduced sample size for these analyses, and some very low prevalence disorders, cell sizes less than 5 have been retained in the tables; however, results should be interpreted with caution, particularly where cell sizes are very small.

7.1 Resilience

Overall, more than half of the longitudinal cohort reported having no disorder at both time points (2010: 58.0%; 2015: 54.0%). This highlights that most personnel across both groups demonstrated a pattern of resilience over time. This accords with much evidence in both military and veteran (Bonanno et al., 2012b), and civilian (Bonanno, Kennedy, Galatzer-Levy, Lude & Elfström, 2012a; Bryant et al., 2015; Orcutt, Bonanno, Hannan & Miron, 2014), literature, indicating that most people are resilient following adversity. Using more assessment points than used in the current study, longitudinal studies that have used latent growth mixture modelling of military samples have shown that most personnel display good mental health over time (Berntsen et al., 2012; Bonanno et al., 2012b; Donoho, Bonanno, Porter, Kearney & Powell, 2017; Isaacs et al., 2017). Although this pattern has been shown in personnel deployed to the Gulf War (Orcutt, Erickson & Wolfe, 2004), Kosovo (Dickstein, Suvak, Litz & Adler, 2010), Afghanistan (Berntsen et al., 2012), and Iraq (Bonanno et al., 2012b), there is less evidence regarding resilient trajectories during transition specifically. Studies that have been conducted with transitioned personnel also report that most personnel report good mental health following discharge from active military service (Hatch et al., 2013; Thompson et al., 2015).

7.2 Any disorder over time

Overall, almost half of the longitudinal cohort met criteria for any disorder at both time points, with 42.0% in 2010 and 46.0% in 2015, and these rates were not significantly different. Rates of any disorder were higher in both 2010 and 2015 for those members of the longitudinal cohort who had transitioned in 2015 compared to those who remained in the Regular ADF in 2015 (2010: 48.3% vs 39.0%; OR 1.46; 95% CI 1.09, 1.96), (2015: 51.7 vs 43.3%; OR 1.40; 95% CI 1.05, 1.88).

Overall, the proportion of the longitudinal cohort with any new disorder in 2015 was similar among those who had transitioned (29.6%) and those who remained in the Regular ADF (27.6%). A higher proportion of those who had transitioned (75.4%) retained their disorder from 2010 to 2015 compared to those who remained in the Regular ADF (67.9%) (Table 4).

Table 4 Rates of 12-month ICD-10 anxiety, affective and alcohol disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
	Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		2010: Regular 2015 vs Transitioned 2015	2015: Regular 2015 vs Transitioned 2015	2010 total vs 2015 total
	n	%	n	%	n	%	n	%	n	%	n	%	OR (95% CI)	OR (95% CI)	OR (95% CI)
Anxiety disorder	100	38.3	167	29.9	267	32.6	111	42.5	199	35.6	310	37.8	1.46 (1.07–1.98)	1.34 (0.99–1.81)	1.29 (1.04–1.59)
Affective disorder	55	21.1	95	17.0	150	18.3	61	23.4	112	20.0	173	21.1	1.30 (0.90–1.89)	1.22 (0.85–1.73)	1.20 (0.94–1.54)
Alcohol disorder	20	7.7	33	5.9	53	6.5	24	9.2	28	5.0	52	6.3	1.32 (0.74–2.35)	1.92 (1.09–3.38)	0.98 (0.66–1.46)
PTSD	51	19.5	59	10.6	110	13.4	64	24.5	73	13.1	137	16.7	2.06 (1.37–3.09)	2.16 (1.49–3.14)	1.31 (0.99–1.73)
Any disorder	126	48.3	218	39.0	344	42.0	135	51.7	242	43.3	377	46.0	1.46 (1.09–1.96)	1.40 (1.05–1.88)	1.20 (0.97–1.47)

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

7.3 Anxiety disorders over time

Anxiety is one of the most commonly reported mental health conditions in the community. The 2007 National Survey of Mental Health and Wellbeing showed that 11.8% of the Australian community respondents met criteria for an anxiety disorder in the previous 12 months (McEvoy, Grove & Slade, 2011). Consistent with this pattern, it was also the most commonly observed disorder category among the longitudinal cohort in both 2010 (32.6%) and 2015 (37.8%).

Anxiety disorders were also the only disorder category that showed a significant change over time, with a greater proportion of participants reporting anxiety disorders in 2015 (37.8%) compared to 2010 (32.6%) (OR 1.29; 95% CI 1.04, 1.59). Furthermore, those in the longitudinal cohort who had transitioned in 2015 had higher rates of anxiety disorder in both 2010 and 2015, compared to those who remained in the Regular ADF in 2015, with the difference slightly more pronounced in 2010 as a result of a greater increase between time points among the Regular ADF (2010: 38.3% vs 29.9%; OR 1.46; 95% CI 1.07, 1.98), (2015: 42.5% vs 35.6%; OR 1.34; 95% CI 0.99, 1.81) (Table 4).

When examining changes in disorder status over time, comparable proportions of Transitioned and Regular ADF personnel with no anxiety disorder in 2010 became new anxiety cases in 2015 (22.4% vs 24.0%). However, of those reporting any anxiety disorder in 2010, a greater proportion of those who transitioned compared to those who remained in the Regular ADF retained their disorder in 2015 (75.0% vs 62.9%) (Table 5).

The pattern of findings indicates that ADF personnel who transitioned in 2015 were more likely to have an anxiety disorder while still serving in the ADF. The converse of this is that ADF members who were less likely to have an anxiety disorder in 2010 were more likely to remain in active service. That is, psychologically healthier personnel may remain in the ADF while those with an anxiety disorder are more likely to discharge, potentially as a result of their mental health. The ‘healthy worker effect’ hypothesis maintains that those with more psychological problems during military service are more likely to transition, and this is consistent with the above observation. This also accords with evidence from the United Kingdom suggesting that personnel who leave military service prematurely are more psychologically at risk (Buckman et al., 2013; King’s Centre for Military Health Research, 2010; van Staden et al., 2007).

Furthermore, those who develop mental health symptoms or disorders before discharge may particularly struggle with their adjustment to civilian life (Coll, Weiss & Yarvis, 2011; Department of Veterans' Affairs, 2016; Institute of Medicine, 2013; Kukla, Rattray & Salyers, 2015; Pease, Billera & Gerard, 2016; Sayer, Carlson & Frazier, 2014; Tanielian & Jaycox, 2008). This is consistent with evidence that stressors and psychological problems occurring prior to or during military service (including childhood adversity, non-military-related accidents or disasters, as well as combat exposure and physical assault occurring during military service) may compound psychological difficulties during transition (Clancy et al., 2006; Dedert et al., 2009; Iversen et al., 2007; King's Centre for Military Health Research, 2014; van Staden et al., 2007).

Additionally, the stressors associated with transition may have compounded the anxiety experienced by these individuals; hence, they may have been less able to overcome their anxiety disorder. This possibility accords with evidence that transition is associated with *increases* in mental health problems (Dobson et al., 2012; Sim et al., 2015), and with the documented difficulties that many veterans face in the post-transition period (Mobbs & Bonanno, 2018; Ray & Heaslip, 2011). Finally, it is also possible that the ADF provides a protective environment and that those who remained active ADF members enjoyed additional supports in this period, and this resulted in more of these individuals remitting from their anxiety disorder.

Table 5 Proportion of entire longitudinal cohort meeting criteria for 12-month anxiety disorder in 2010 who did/did not meet criteria in 2015

ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study n = 810		2015 Transition and Wellbeing Research Programme											
			Transitioned ADF n = 261				2015 Regular ADF n = 559				Total n = 810			
			Disorder		No disorder		Disorder		No disorder		Disorder		No disorder	
Met criteria	n	n	%	n	%	n	%	n	%	n	%	n	%	
Any anxiety disorder	No	553	36	22.4	125	77.6	94	24.0	298	76.0	130	23.5	423	76.5
	Yes	267	75	75.0	25	25.0	105	62.9	62	37.1	180	67.4	87	32.6

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

7.4 Specific anxiety disorders over time

Panic disorder rates were slightly higher in 2010 among those who had transitioned compared to those who remained in the Regular ADF (5.4% vs 3.6%; OR 1.53; 95% CI 0.76, 3.07); however, the rate of panic disorder had climbed markedly in those who transitioned relative to those who remained in the Regular ADF by 2015 (8.0% vs 2.3%; OR 3.68; 95% CI 1.81, 7.46). Similarly, rates of specific phobia in 2010 were slightly higher among those who had transitioned compared to those remaining in the Regular ADF in 2015 (10.0% vs 8.4%; OR 1.21; 95% CI 0.73, 1.99), but a greater proportion of those who had transitioned had a phobia in 2015 (15.7% vs 9.5%; OR 1.78; 95% CI 1.15, 2.76), attributable to a greater increase among those who transitioned. Rates of agoraphobia were greater in both 2010 and 2015 among those who transitioned compared to those who remained in the Regular ADF in 2015 (2010: 8.4% vs 3.9%; OR 2.25; 95% CI 1.22, 4.14), (2015: 14.9% vs 6.6%; OR 2.48; 95% CI 1.54, 3.99) (Table 6).

Although rates of generalised anxiety disorder in 2010 were higher among those who had transitioned compared to those who remained in the Regular ADF in 2015 (4.6% vs 2.0%; OR 2.40; 95% CI 1.05, 5.52), they were similar between groups in 2015 (5.0% vs 5.5%). This was mostly a result of a larger increase among those who remained in the Regular ADF in 2015 (Table 6).

Table 6 Rates of 12-month ICD-10 anxiety disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

ICD-10 anxiety disorder	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
	Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		2010: Regular 2015 vs Transitioned 2015	2015: Regular 2015 vs Transitioned 2015	2010 total vs 2015 total
	n	%	n	%	n	%	n	%	n	%	n	%	OR (95% CI)	OR (95% CI)	OR (95% CI)
Panic attack	44	16.9	69	12.3	113	13.8	46	17.6	85	15.2	131	16.0	1.44 (0.96–2.17)	1.19 (0.81–1.77)	1.19 (0.91–1.57)
Panic disorder	14	5.4	20	3.6	34	4.1	21	8.0	13	2.3	34	4.1	1.53 (0.76–3.07)	3.68 (1.81–7.46)	1.00 (0.61–1.63)
Agoraphobia	22	8.4	22	3.9	44	5.4	39	14.9	37	6.6	76	9.3	2.25 (1.22–4.14)	2.48 (1.54–3.99)	1.82 (1.24–2.69)
Social phobia	25	9.6	41	7.3	66	8.0	30	11.5	51	9.1	81	9.9	1.34 (0.80–2.25)	1.29 (0.80–2.08)	1.26 (0.89–1.78)
Specific phobia	26	10.0	47	8.4	73	8.9	41	15.7	53	9.5	94	11.5	1.21 (0.73–1.99)	1.78 (1.15–2.76)	1.33 (0.96–1.85)
Generalised anxiety disorder	12	4.6	11	2.0	23	2.8	13	5.0	31	5.5	44	5.4	2.40 (1.05–5.52)	0.89 (0.46–1.74)	1.97 (1.18–3.30)
Obsessive-compulsive disorder	9	3.4	23	4.1	32	3.9	10	3.8	30	5.4	40	4.9	0.83 (0.38–1.82)	0.70 (0.34–1.46)	1.27 (0.78–2.05)
Posttraumatic stress disorder	51	19.5	59	10.6	110	13.4	64	24.5	73	13.1	137	16.7	2.06 (1.37–3.09)	2.16 (1.49–3.14)	1.31 (0.99–1.73)
Any anxiety disorder	100	38.3	167	29.9	267	32.6	111	42.5	199	35.6	310	37.8	1.46 (1.07–1.98)	1.34 (0.99–1.81)	1.29 (1.04–1.59)

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

In terms of MHPWS 12-month CIDI disorder predicting Transition and Wellbeing Research Programme 12-month CIDI disorder (Table 7), similar proportions of those who had transitioned (11.5%) compared to those remaining in the Regular ADF (12.9%) were new cases of panic attack in 2015. However, of those reporting panic attacks in 2010, a greater proportion of those who had transitioned (47.7%) retained their disorder in 2015 compared to those who remained in the Regular ADF (31.9%).

The proportion of new panic disorder cases in 2015 was small. More of those who had transitioned (6.9%) became new cases in 2015 compared to those who remained in the Regular ADF (2.0%), and a greater proportion of those who had transitioned (28.6%) retained their disorder in 2015 compared to those who remained in the Regular ADF (10.0%).

Similarly for agoraphobia, social phobia and specific phobia, a greater proportion of those who had transitioned (11.7%, 9.7% and 11.9% respectively) became new cases in 2015 compared to those who remained in the Regular ADF (6.0%, 6.9% and 7.8% respectively). Furthermore, for agoraphobia and specific phobia, a greater proportion of those who had transitioned (50.0% and 50.0% respectively) compared to those who remained in the Regular ADF (22.7% and 27.7% respectively) retained their disorder in 2015. In contrast, a lower proportion of those who had transitioned compared to those who remained in the Regular ADF retained social phobia in 2015 (28.0% vs 36.6%).

The proportion of new generalised anxiety disorder (GAD) and obsessive-compulsive disorder (OCD) cases in 2015 was small. Those who transitioned and those who remained in the Regular ADF had similar proportions of new cases of GAD in 2015 (4.4% vs 5.1%), and more of those who remained in the Regular ADF retained their disorder (27.3%) compared to those who had transitioned (16.7%). Similarly for OCD, those who transitioned and those who remained in the Regular ADF had similar proportions of new cases in 2015 (3.2% vs 3.9%), while a greater proportion of those who remained in the Regular ADF retained their disorder (39.1%) compared to those who had transitioned (22.2%).

Table 7 Proportion of entire longitudinal cohort meeting criteria for 12-month anxiety disorders in 2010 who did/did not meet criteria in 2015

2010 ADF Mental Health Prevalence and Wellbeing Study ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study n = 810		2015 Transition and Wellbeing Research Programme											
			Transitioned ADF n = 261				2015 Regular ADF n = 559				Total n = 810			
	Met criteria	n	Disorder		No disorder		Disorder		No disorder		Disorder		No disorder	
			n	%	n	%	n	%	n	%	n	%	n	%
Panic attack	No	707	25	11.5	192	88.5	63	12.9	427	87.1	88	12.4	619	87.6
	Yes	113	21	47.7	23	52.3	22	31.9	47	68.1	43	38.1	70	61.9
Panic disorder	No	786	17	6.9	230	93.1	11	2.0	528	98.0	28	3.6	758	96.4
	Yes	34	4	28.6	10	71.4	2	10.0	18	90.0	6	17.6	28	82.4
Agoraphobia	No	776	28	11.7	211	88.3	32	6.0	505	94.0	60	7.7	716	92.3
	Yes	44	11	50.0	11	50.0	5	22.7	17	77.3	16	36.4	28	63.6
Social phobia	No	754	23	9.7	213	90.3	36	6.9	482	93.1	59	7.8	695	92.2
	Yes	66	7	28.0	18	72.0	15	36.6	26	63.4	22	33.3	44	66.7
Specific phobia	No	747	28	11.9	207	88.1	40	7.8	472	92.2	68	9.1	679	90.9
	Yes	73	13	50.0	13	50.0	13	27.7	34	72.3	26	35.6	47	64.4
Generalised anxiety disorder	No	797	11	4.4	238	95.6	28	5.1	520	94.9	39	4.9	758	95.1
	Yes	23	2	16.7	10	83.3	3	27.3	8	72.7	5	21.7	18	78.3
Obsessive-compulsive disorder	No	788	8	3.2	244	96.8	21	3.9	515	96.1	29	3.7	759	96.3
	Yes	32	2	22.2	7	77.8	9	39.1	14	60.9	11	34.4	21	65.6

Taken together, the majority of those who did not meet criteria in 2010 for panic attacks, panic disorder, agoraphobia, specific phobia, or PTSD, also did not meet criteria for that disorder in 2015. However, of those who met criteria for any of these disorders in 2010, those who transitioned from the ADF in this period were more likely to have that same mental health disorder in 2015 relative to those who remained in the ADF, indicating a level of disorder chronicity.

It is also worth considering that each of the conditions that markedly increased over time (panic disorder, agoraphobia, specific phobia, and PTSD) are understood as *fear circuitry* disorders, which are characterised by dysfunction to how the neurobiological system processes and maintains stress responses to the environment. It is theorised that these disorders commence because people learn that stimuli that are present at the time of a traumatic event (e.g. loud noises, smell of petrol, sight of blood) are paired with fear, and accordingly, when one is subsequently exposed to these stimuli, there is the perception that the threat is present again, leading to the experience of anxiety (Milad, Rauch, Pitman & Quirk, 2006). Although a traumatic event precedes the onset of PTSD specifically, there is also evidence that aversive or traumatic experiences can precede onset of panic disorder (Faravelli, 1985; Manfro et al., 1996) and social phobia (McCabe, Antony, Summerfeldt, Liss & Swinson, 2003).

7.5 Posttraumatic stress disorder over time

In the longitudinal cohort as a whole, 13.4% met criteria for PTSD in 2010 and 16.7% met criteria for the disorder in 2015. Although the overall incidence of PTSD did not vary over time, those members who had transitioned in 2015 had higher rates in both 2010 (19.5% vs 10.6%) and 2015 (24.5% vs 13.1%) compared to those who remained in the Regular ADF in 2015 (Table 8). Furthermore, a greater proportion of individuals who had transitioned became new cases in 2015, compared to those who remained in the Regular ADF (18.1% vs 9.4%) (Table 9). The difference in rates was larger for PTSD than any of the other disorder categories, a pattern that highlights several important points.

First, the greater rate of PTSD in the Transitioned ADF post-discharge (relative to Regular ADF) may be attributable in part to the increased vulnerability of these personnel during military service. That is, the higher rates of PTSD of Transitioned ADF members in 2010 suggest that those personnel who were more

symptomatic were more likely to discharge than those who did not have stress reactions. This accords with the healthy worker effect, in which the psychologically healthier personnel are more prone to remain in the ADF.

Second, the finding that the rate of PTSD increased somewhat in the Transitioned ADF (19.5% in 2010 to 24.5% in 2015) raises the possibility of some delayed or worsening cases of PTSD (Table 8). As specified in DSM-5, delayed-onset PTSD can involve new onset of PTSD symptoms or worsening of symptoms over time (Friedman, Resick, Bryant & Brewin, 2011). This pattern has often been observed in military populations, with reviews calculating that delayed onset can account for 38.2% of PTSD cases in military/veteran populations (Andrews, Brewin, Philpott & Stewart, 2007). The finding that Transitioned personnel had higher rates of PTSD during military service in 2010 underscores that it is possible that there were elevated rates of posttraumatic stress symptoms, albeit at subsyndromal levels, that predisposed those individuals to worsen after discharge. This accords with evidence from military/veteran studies that delayed-onset PTSD is typically associated with elevated subsyndromal levels of PTSD prior to the worsening of symptoms to the point where they meet diagnostic threshold (Berntsen et al., 2012; Bonanno et al., 2012b; Dickstein et al., 2010; Orcutt et al., 2004).

Third, the observation that PTSD increased over time in the Transitioned personnel also accords with evidence that transition can occur in the context of many stressors. Loss of social network, loss of identity, financial and employment challenges, and lack of structure can contribute to psychological and social difficulties faced by veterans. Delayed-onset PTSD has been associated with greater stressors in the period prior to the worsening of symptoms (Andrews, Brewin, Stewart, Philpott & Hejdenberg, 2009), and so it is possible that the stressors experienced by Transitioned personnel after discharge triggered a worsening of PTSD symptoms to the point that diagnostic thresholds were met.

Fourth, the finding that Transitioned personnel had increased rates of PTSD in 2015, and that this was preceded by higher rates of PTSD during active service in 2010, can be explained in terms of sensitisation models of PTSD (McFarlane, 2010; Smid et al., 2012). It is likely that the experience of trauma and stress during ADF service sensitised neural networks in a way that made them more susceptible to the stressors they experienced following discharge (Stam, 2007). Accordingly, the myriad of stressors occurring during the transition phase would compound stress networks in the brain that are already sensitive to responding because of the prior posttraumatic stress (either full or subsyndromal) levels experienced during ADF service.

Table 8 Rates of PTSD in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

ICD-10 anxiety disorder	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
	Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		2010: Regular 2015 vs Transitioned 2015	2015: Regular 2015 vs Transitioned 2015	2010 total vs 2015 total
	n	%	n	%	n	%	n	%	n	%	n	%	OR (95% CI)	OR (95% CI)	OR (95% CI)
Posttraumatic stress disorder	51	19.5	59	10.6	110	13.4	64	24.5	73	13.1	137	16.7	2.06 (1.37–3.09)	2.16 (1.49–3.14)	1.31 (0.99–1.73)

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

Table 9 Proportion of entire longitudinal cohort meeting criteria for 12-month PTSD in 2010 who did/did not meet criteria in 2015

2010 ADF Mental Health Prevalence and Wellbeing Study ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study n = 810		2015 Transition and Wellbeing Research Programme												
			Transitioned ADF n = 261				2015 Regular ADF n = 559				Total n = 810				
	Met criteria	n	Disorder		No disorder		Disorder		No disorder		Disorder		No disorder		
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Posttraumatic stress disorder	No	710	38	18.1	172	81.9	47	9.4	453	90.6	85	12.0	625	88.0	
	Yes	110	26	51.0	25	49.0	26	44.1	33	55.9	52	47.3	58	52.7	

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

7.6 Affective disorders over time

As can be seen in Table 10, comparable proportions of Transitioned ADF and Regular ADF reported affective disorders in 2010 (18.3% vs 21.1%) and 2015 (21.1% vs 23.4%). The most commonly detected affective disorder in the longitudinal cohort was depressive episodes, with 13.8% meeting criteria for this disorder in 2010 and 13.4% in 2015. As can be seen in Table 11, similar proportions of Transitioned and Regular ADF reported new cases of depressive episodes in 2015 (11.0% vs 11.1%). Further, of those reporting a depressive episode in 2010, a marginally greater proportion of those who had transitioned (31.0%) retained this disorder in 2015 compared to those who remained in the Regular ADF (26.8%). These patterns are somewhat consistent with evidence that military personnel who are discharged from active service prematurely are more likely to have a depressive disorder (Brignone et al., 2017), and with prior research of ADF members showing that veterans have greater rates of depressive disorder than currently serving ADF members (Dobson et al., 2012). However, the findings from the current study suggest that, overall, the rates of depressive disorder remained constant over time for both those members who remained in the ADF and those who transitioned. Although there was a trend for transitioned members to retain their depressive disorder, this was only marginal and markedly less than previous studies.

Table 10 Rates of 12-month ICD-10 affective disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

ICD-10 affective disorder	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
	Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		2010: Regular 2015 vs Transitioned 2015	2015: Regular 2015 vs Transitioned 2015	2010 total vs 2015 total
	n	%	n	%	n	%	n	%	n	%	n	%	OR (95% CI)	OR (95% CI)	OR (95% CI)
Depressive episodes	42	16.1	71	12.7	113	13.8	37	14.2	73	13.1	110	13.4	1.32 (0.87–1.99)	1.10 (0.72–1.68)	0.97 (0.73–1.29)
Dysthymia	5	1.9	13	2.3	18	2.2	19	7.3	18	3.2	37	4.5	0.82 (0.29–2.33)	2.36 (1.22–4.58)	2.11 (1.19–3.74)
Bipolar affective disorder	13	5.0	21	3.8	34	4.1	20	7.7	28	5.0	48	5.9	1.34 (0.66–2.73)	1.57 (0.87–2.85)	1.45 (0.92–2.28)
Any affective disorder	55	21.1	95	17.0	150	18.3	61	23.4	112	20.0	173	21.1	1.30 (0.90–1.89)	1.22 (0.85–1.73)	1.20 (0.94–1.54)

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

Table 11 Proportion of entire longitudinal cohort meeting criteria for 12-month affective disorders in 2010 who did/did not meet criteria in 2015

2010 ADF Mental Health Prevalence and Wellbeing Study ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study n = 810		2015 Transition and Wellbeing Research Programme											
			Transitioned ADF n = 261				2015 Regular ADF n = 559				Total n = 810			
	Disorder		No disorder		Disorder		No disorder		Disorder		No disorder			
	Met criteria	n	n	%	n	%	n	%	n	%	n	%	n	%
Any affective disorder	No	670	35	17.0	171	83.0	70	15.1	394	84.9	105	15.7	565	84.3
	Yes	150	26	47.3	29	52.7	42	44.2	53	55.8	68	45.3	82	54.7
Depressive episodes	No	707	24	11.0	195	89.0	54	11.1	434	88.9	78	11.0	629	89.0
	Yes	113	13	31.0	29	69.0	19	26.8	52	73.2	32	28.3	81	71.7
Dysthymia	No	802	17	6.6	239	93.4	17	3.1	529	96.9	34	4.2	768	95.8
	Yes	18	2	40.0	3	60.0	1	7.7	12	92.3	3	16.7	15	83.3
Bipolar affective disorder	No	786	16	6.5	232	93.5	20	3.7	518	96.3	36	4.6	750	95.4
	Yes	34	4	30.8	9	69.2	8	38.1	13	61.9	12	35.3	22	64.7

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

7.7 Alcohol disorders over time

Overall, alcohol disorders were detected at relatively low levels among the longitudinal cohort as a whole, and did not significantly differ between 2010 and 2015 (6.5% vs 6.3%) (Table 12). Although comparable proportions of Transitioned and Regular ADF reported alcohol disorders in 2010 (7.7% vs 5.9%), in 2015, those who had transitioned reported higher rates compared to those who remained in the Regular ADF (9.2% vs 5.0%). Furthermore, alcohol harmful use was higher in 2010 among those who had transitioned compared to those who remained in the Regular ADF (4.6% vs 2.1%; OR 2.20; 95% CI 0.97, 4.96). A similar pattern emerged in 2015 (3.4% vs 1.1%; OR 3.29; 95% CI 1.16, 9.35). Of those who had no alcohol disorder in 2010, a greater proportion of those who had transitioned compared to those who remained in the Regular ADF became new cases in 2015 (6.6% vs 3.4%) (Table 13). Among those who were cases in 2010, a greater proportion of those who had transitioned compared to those who remained in the Regular ADF retained their disorder in 2015 (40.0% vs 30.3%).

The findings that alcohol use disorder was reasonably low during active service in the ADF, and that there were no differences between those who later transitioned and those who remained in the ADF, indicate that alcohol abuse is not as problematic in the ADF as has been reported in some other militaries. This pattern may be attributed, in part, to the controlled environment of the ADF, in which a drinking culture may not be as encouraged as other military agencies. One review indicated a culture of hazardous drinking in the UK military, and that this translated into problematic alcohol use in those who maintain military social networks after transition (St George's House, 2014). Alcohol abuse is reportedly a greater concern in the UK military than PTSD (Fear, Wood & Wessely, 2009); however, lessons from the UK cohorts need to be considered in the context of findings that alcohol abuse is more prevalent in the UK than US or Australian militaries (King's Centre for Military Health Research, 2014; Sundin et al., 2014).

The observation of an increased rate of alcohol use problems after discharge from the ADF is consistent with much evidence from Australian and international literature on alcohol use in veteran populations. For example, the prevalence of 12-month probable alcohol disorder approximately doubled in the 10-year period (from 3.1% to 6.3% for Gulf War veterans and 1.6% to 2.9% for the comparison group) (Sim et al., 2015). It is also consistent with international studies indicating that alcohol misuse is reported as a key problem among veterans (Golub & Bennett, 2014). It is worth noting that the *Mental Health Prevalence Report* (Van Hooff et al., 2018) noted that 95% of the Transitioned ADF who met criteria for a 12-month alcohol disorder had a comorbid mental disorder. This finding accords with the suggestion that one reason for the increased alcohol use was self-medication (Crum et al., 2013; Davis et al., 2013).

Table 12 Rates of 12-month ICD-10 alcohol disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

ICD-10 alcohol disorder	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
	Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		Transitioned ADF n = 261		2015 Regular ADF n = 559		Total n = 820		2010: Regular 2015 vs Transitioned 2015	2015: Regular 2015 vs Transitioned 2015	2010 total vs 2015 total
	n	%	n	%	n	%	n	%	n	%	n	%	OR (95% CI)	OR (95% CI)	OR (95% CI)
Alcohol harmful use	12	4.6	12	2.1	24	2.9	9	3.4	6	1.1	15	1.8	2.20 (0.97–4.96)	3.29 (1.16–9.35)	0.62 (0.32–1.19)
Alcohol dependence	8	3.1	21	3.8	29	3.5	15	5.7	22	3.9	37	4.5	0.81 (0.35–1.85)	1.49 (0.76–2.92)	1.29 (0.78–2.14)
Any alcohol disorder	20	7.7	33	5.9	53	6.5	24	9.2	28	5.0	52	6.3	1.32 (0.74–2.35)	1.92 (1.09–3.38)	0.98 (0.66–1.46)

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

Table 13 Proportion of entire longitudinal cohort meeting criteria for 12-month alcohol disorder in 2010 who did/did not meet criteria in 2015

2010 ADF Mental Health Prevalence and Wellbeing Study ICD-10 disorder	2010 ADF Mental Health Prevalence and Wellbeing Study n = 810		2015 Transition and Wellbeing Research Programme											
			Transitioned ADF n = 261				2015 Regular ADF n = 559				Total n = 810			
	Met criteria		Disorder		No disorder		Disorder		No disorder		Disorder		No disorder	
			n	%	n	%	n	%	n	%	n	%	n	%
Any alcohol disorder	No	767	16	6.6	225	93.4	18	3.4	508	96.6	34	4.4	733	95.6
	Yes	53	8	40.0	12	60.0	10	30.3	23	69.7	18	34.0	35	66.0
Alcohol harmful use	No	796	7	2.8	242	97.2	6	1.1	541	98.9	13	1.6	783	98.4
	Yes	24	2	16.7	10	83.3	0	0.0	12	100.0	2	8.3	22	91.7
Alcohol dependence	No	791	13	5.1	240	94.9	15	2.8	523	97.2	28	3.5	763	96.5
	Yes	29	2	25.0	6	75.0	7	33.3	14	66.7	9	31.0	20	69.0

Note: A description of each of the ICD-10 disorder classes is provided in the glossary.

8 Self-reported mental health in the longitudinal cohort

This chapter summarises the key findings pertaining to the patterns of self-reported psychological distress, alcohol consumption and problems, posttraumatic stress disorder (PTSD) symptoms, depression, suicidality and anger within the longitudinal cohort across two time points:

- the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) assessment (time point 1)
- the 2015 Transition and Wellbeing Research Programme assessment (time point 2).

In addition to this longitudinal comparison, mean scores were examined cross-sectionally at both time points for ADF members who transitioned from the Regular ADF since 2015 (Transitioned ADF) compared to the 2015 Regular ADF, within the longitudinal cohort.

8.1 Psychological distress (K10)

One-third (33%) of Transitioned ADF who exhibited symptom levels indicative of subsyndromal disorder in 2010 were also subsyndromal in 2015, and around one-quarter (25.2%) had symptom levels indicating probable disorder in 2015 (Figure 4 and Figure 5). Among those who remained in the Regular ADF, 32.5% still had subsyndromal symptoms in 2015 and a smaller 17.5% had symptom levels indicating probable disorder.

The finding that 25.2% of Transitioned personnel and 17.5% of Regular ADF personnel worsened from subsyndromal disorder to probable disorder between 2010 and 2015 is consistent with previous evidence that subsyndromal levels of disorders are predictive of subsequent development of disorder (Bryant, O'Donnell, Creamer, McFarlane & Silove, 2013; O'Donnell, 2013; Pietrzak et al., 2013). Importantly, the observation that this pattern was slightly stronger for Transitioned ADF members compared to Regular ADF members reinforces the proposal that those who transition are more susceptible to worsening of symptoms following discharge, which in turn is consistent with evidence of the abundant challenges facing many veterans following discharge. These findings also reinforce the possibility that one reason Transitioned ADF members were more likely to report distress after discharge is that they experienced greater levels of distress *during* military service. This is consistent with a sensitisation explanation for the greater development of distress over time (Stam, 2007).

The finding that 18.8% of Transitioned ADF members and 35.2% of Regular ADF members who had a probable disorder on the Kessler Psychological Distress 10-item scale (K10) in 2010 subsequently remitted to the point where they had no disorder in 2015 highlights that many people can overcome their mental health issue. Proportionally more Regular ADF than Transitioned personnel remitted over the five years, which may reflect a healthy worker effect because those who were able to overcome psychological problems may have decided to remain in the ADF. It is also possible that fewer Transitioned personnel remitted because of the difficulties they faced post-discharge. Further, the greater remission rate in Regular ADF personnel may reflect the structured environment, which can be accompanied by more supports, than some Transitioned personnel may experience following discharge.

Finally, among the Transitioned ADF, of those with a probable disorder in 2010, over half (58.0%) still had a probable disorder in 2015, 23.2% reported symptoms indicative of subsyndromal disorder, and 18.8% no longer met criteria for a disorder. A somewhat comparable pattern emerged in the Regular ADF, however to a lesser extent. Specifically, whereas there was a proportion of Regular ADF personnel who had no disorder in 2010 but developed a probable disorder in 2015 (8.5%), this was less than the proportion of new probable cases observed in the Transitioned ADF (15.2%). Similarly, whereas 17.5% of Regular ADF personnel who had subsyndromal disorder in 2010 progressed to probable disorder in 2015, this was less than the rate who followed this pattern among the Transitioned ADF (25.2%). These patterns highlight the dynamic nature of

psychological health both during ADF service and especially following transition. The finding that 15.2% who had no disorder in 2010 reported probable disorder in 2015 points to the fact that individuals can be apparently experiencing low levels of distress and this can change markedly within several years.

Figure 4 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015

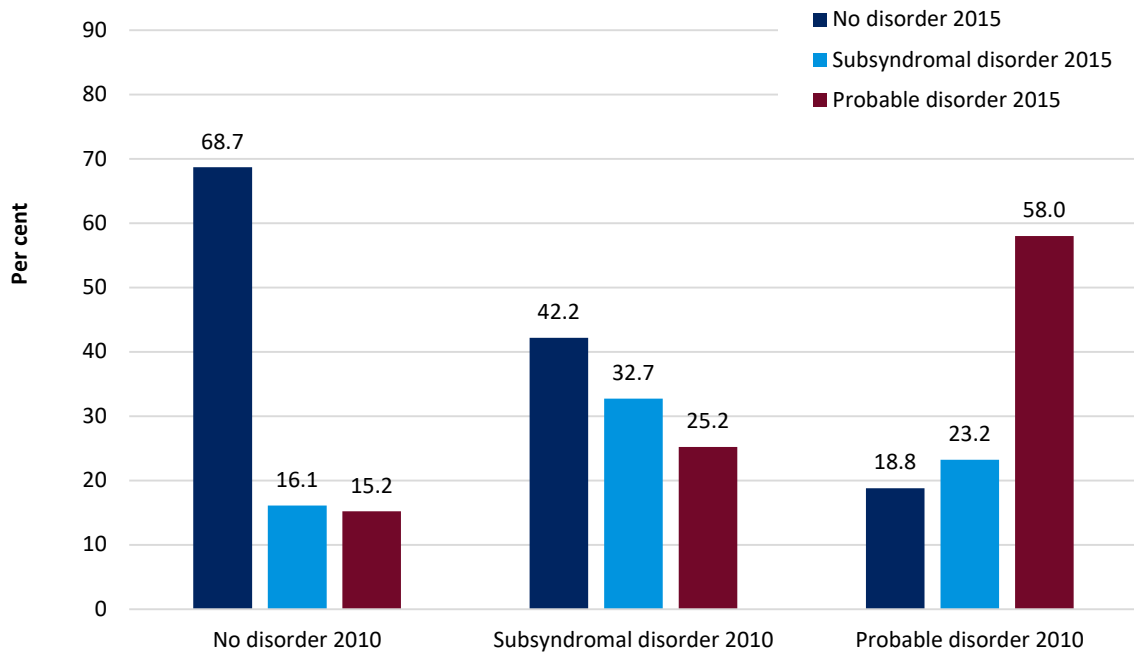
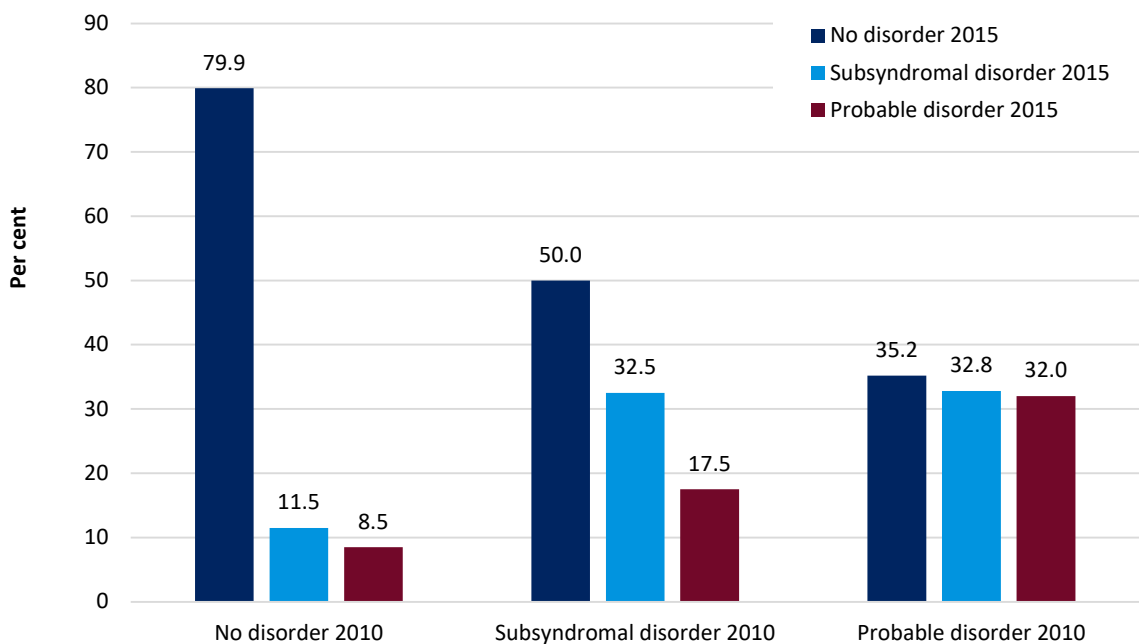


Figure 5 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015



8.2 Posttraumatic stress disorder symptoms (PCL-C)

A somewhat similar pattern as for psychological distress was observed for posttraumatic stress symptoms. Seventy-five percent of the Transitioned ADF did not meet criteria for PTSD in 2010, 19.6% met criteria for a subsyndromal disorder and 5.4% met probable disorder. In 2015, only 62.8% had no disorder, while subsyndromal rates increased to 25.0% and probable disorder to 12.2%. Those who remained in the Regular ADF reported lower levels of probable disorder on the PTSD Checklist – civilian version (PCL-C) in 2010 and 2015 compared to those who had transitioned. In 2010, 83.3% of those who remained in the Regular ADF had no disorder, 14.9% had subsyndromal disorder and just 1.8% had probable disorder. In 2015, 79.9% had no disorder, subsyndromal disorder increased slightly to 17.1%, and probable disorder to 3.0%. When examining the combined subsyndromal and probable disorder rates, whereas the proportion of Transitioned personnel with some level of elevated posttraumatic stress increased from 25.0% in 2010 to 37.2% in 2015, the increase among Regular ADF personnel was smaller – 16.7% in 2010 and 20.1% in 2015. These patterns highlight that over time, posttraumatic stress symptoms worsened to a greater extent among the Transitioned ADF relative to the Regular ADF. Although there were very slight increases in subsyndromal and probable disorder among the Regular ADF, these changes were much smaller than those observed among the Transitioned ADF.

Examining the shifts in posttraumatic stress symptom status over time, there were marked patterns apparent. Among Transitioned ADF members with no disorder in 2010, 19.8% became new cases of subsyndromal disorder in 2015 and 6.3% became new cases of probable disorder. In contrast, among Regular ADF with no disorder in 2010, 12.3% moved to subsyndromal disorder and only 1.4% moved to probable disorder in 2015 (Figure 6 and Figure 7).

Among those with subsyndromal disorder in 2010, Regular ADF members tended to improve over time relative to the Transitioned members. Specifically, 42.0% of Transitioned members remained subsyndromal, 34.7% no longer had a disorder and 23.4% met criteria for probable disorder. A different pattern emerged for Regular ADF members, whereby 39.5% remained in this category in 2015, 50.6% no longer had a disorder and 9.9% shifted to probable disorder (Figure 6 and Figure 7).

In terms of those with probable disorder in 2010, over half (55.0%) of Transitioned members remained probable disorder cases in 2015, 34.9% shifted to subsyndromal and 10.1% no longer met criteria for disorder. In contrast, 17.7% of Regular ADF personnel still had a probable disorder in 2015, 57.3% shifted to subsyndromal disorder and 25.0% no longer had a disorder. This pattern underscores that in contrast to Transitioned personnel who had probable PTSD in 2010, the majority of the Regular ADF cohort remitted over time (Figure 6 and Figure 7).

These patterns reinforce findings regarding diagnosable mental disorder from the Composite International Diagnostic Interview, showing the Transitioned ADF to be markedly more at risk than Regular ADF of worsened PTSD over time. The PCL-C data extend this by demonstrating that a significant proportion of ADF members who subsequently experience PTSD following discharge from the ADF have elevated levels of posttraumatic stress during military service – and markedly more than those who remain in the ADF. The finding that 65.4% of Transitioned members who reported subsyndromal levels of posttraumatic stress during military service reported subsyndromal or probable PTSD in 2015 highlights that these individuals are at high risk even during their ADF service. Although many may not have diagnosable PTSD during ADF service, their subsyndromal levels during ADF service render them at risk for subsequent posttraumatic stress. This accords with prior civilian evidence that subsyndromal PTSD is a risk factor for subsequent full PTSD (Halpern, Maunder, Schwartz & Gurevich, 2011; O'Donnell, 2013). Against the background that subsyndromal PTSD is associated with marked functional impairment (Stein, Walker, Hazen & Forde, 1997; Zlotnick, Franklin & Zimmerman, 2002; Fetzner, McMillan & Asmundson, 2012; Marshall et al., 2001; Pietrzak, Goldstein, Malley, Johnson & Southwick, 2009; Schmidt, 2015), it is clearly important to focus preventative and treatment attention on those with subsyndromal levels of posttraumatic stress because of the impairment they can suffer and the risk they possess to worsen over time.

Figure 6 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PCL-C in 2010 and 2015 based on self-reported measures of mental health

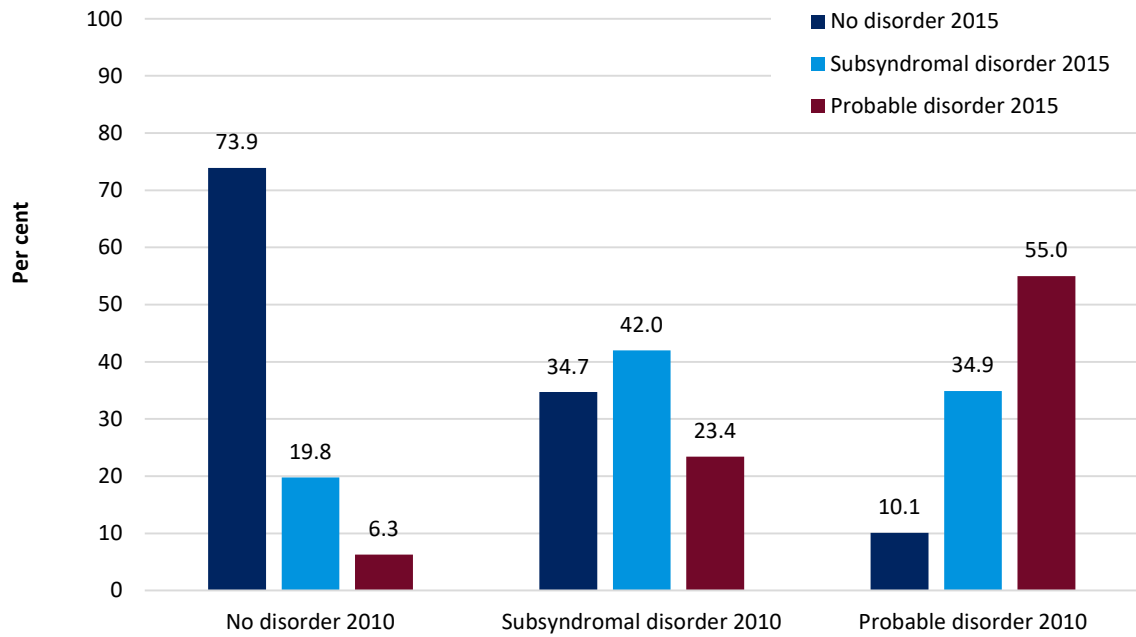
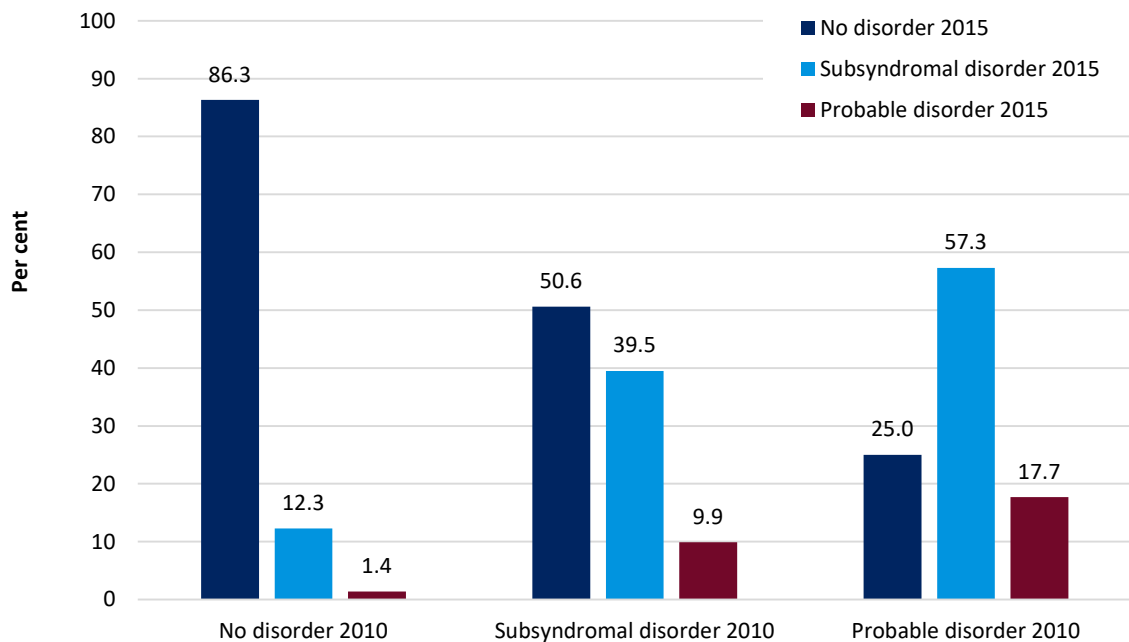


Figure 7 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PCL-C in 2010 and 2015 based on self-reported measures of mental health



8.3 Alcohol use disorders (AUDIT)

In relation to alcohol use disorders as measured by the Alcohol Use Disorders Identification Test (AUDIT), overall, those who remained in the Regular ADF reported somewhat lower levels of disorder in 2010 and markedly lower levels in 2015 compared to those who had transitioned. For those who had transitioned, 74.2% had no disorder on the AUDIT in 2010, 23.8% had a subsyndromal disorder and 2.0% had a probable disorder. In 2015, 69.2% reported no disorder, subsyndromal disorder increased slightly to 25.4% and probable disorder doubled to 5.4%. In 2010, 77.5% of those remaining in the Regular ADF did not meet criteria for disorder on the AUDIT, 21.8% met criteria for subsyndromal disorder and 0.7% for probable disorder. In 2015, those not meeting criteria for a disorder increased to 80.4%, those meeting criteria for subsyndromal disorder decreased to 18.4% and the proportion of those having a probable alcohol use disorder stayed relatively stable at 1.2%.

Considering those with no disorder in 2010, more of the Regular ADF members (90.6%) relative to Transitioned ADF members (82.7%) maintained no disorder status in 2015. A greater proportion of Transitioned ADF compared to Regular ADF moved from no disorder in 2010 to subsyndromal levels in 2015 (15.2% vs 9.2%), and a greater proportion worsened from no disorder to probable disorder (2.1% vs 0.2%). Proportionally more Transitioned ADF members compared to Regular ADF members, with subsyndromal symptoms in 2010, worsened to symptom levels indicating probable disorder in 2015 (11.9% vs 4.2%) (Figure 8 and Figure 9).

In terms of those with subsyndromal alcohol disorder, a slightly larger proportion of the Transitioned ADF (55.9%) relative to Regular ADF members (50.0%) retained their subsyndromal status in 2015. However, twice as many Transitioned ADF than Regular ADF worsened to probable disorder in 2015 (11.9% vs 4.2%).

Regarding those with probable disorder in 2010, more Transitioned ADF still had a probable disorder in 2015 (48.8%) compared to Regular ADF (21.6%), and fewer Transitioned ADF (43.9%) decreased to subsyndromal status than Regular ADF (54.1%).

The observation that 5.4% of Transitioned personnel reported an alcohol use disorder and 25.4% reported a subsyndromal alcohol use disorder in 2015 is problematic from a public health perspective because of the long-term health risks associated with alcohol abuse (Fuehrlein et al., 2016). The observation that alcohol use disorder was lower during ADF service may be attributed, in part, to the controlled drinking environment that exists during active military service. Although it has been repeatedly noted that some militaries have a significant problem with alcohol abuse, such as the UK military (King's Centre for Military Health Research, 2014; St George's House, 2014), this is not replicated in other militaries, including the ADF (Sundin et al., 2014).

There was a significant increase in the rate of alcohol abuse disorder in Transitioned ADF members relative to Regular ADF members. Importantly, this level of difference was not apparent during ADF service in 2010, so the higher rate of alcohol abuse in those who transitioned out of the ADF cannot be attributed to drinking habits during military service. It is possible, however, that alcohol abuse increased after discharge because of increased psychological distress that was already present during ADF service in those who transitioned, as well as the increase in psychological symptoms that occurred after discharge. Self-medication plays a role in a significant proportion of alcohol abuse cases (Crum et al., 2013; Davis et al., 2013). Considering that Transitioned ADF members had higher rates of distress, PTSD, and other disorders in 2010, and this morbidity only increased after discharge, it is very possible that increased alcohol use disorder in Transitioned personnel is due to these individuals' psychological difficulties. This scenario raises the possible opportunity to limit alcohol abuse by early intervention in the military and post-discharge that aims to limit psychological disorder, as well as integrated approaches that treat comorbid alcohol abuse and psychological disorders (Langdon et al., 2016).

Figure 8 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT in 2010 and 2015 based on self-reported measures of mental health

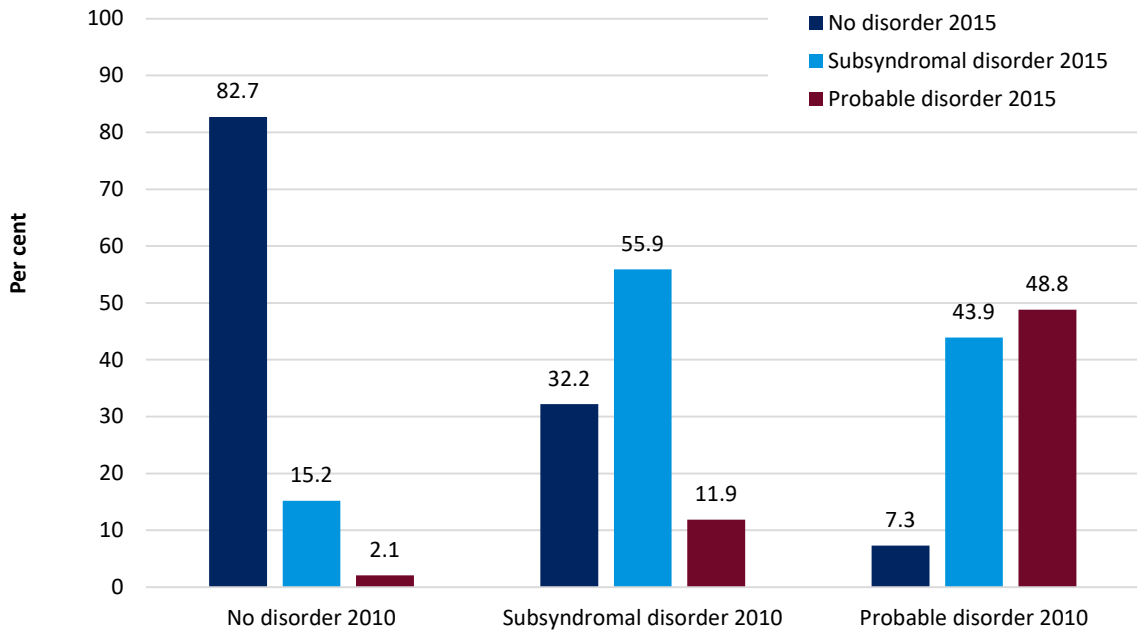
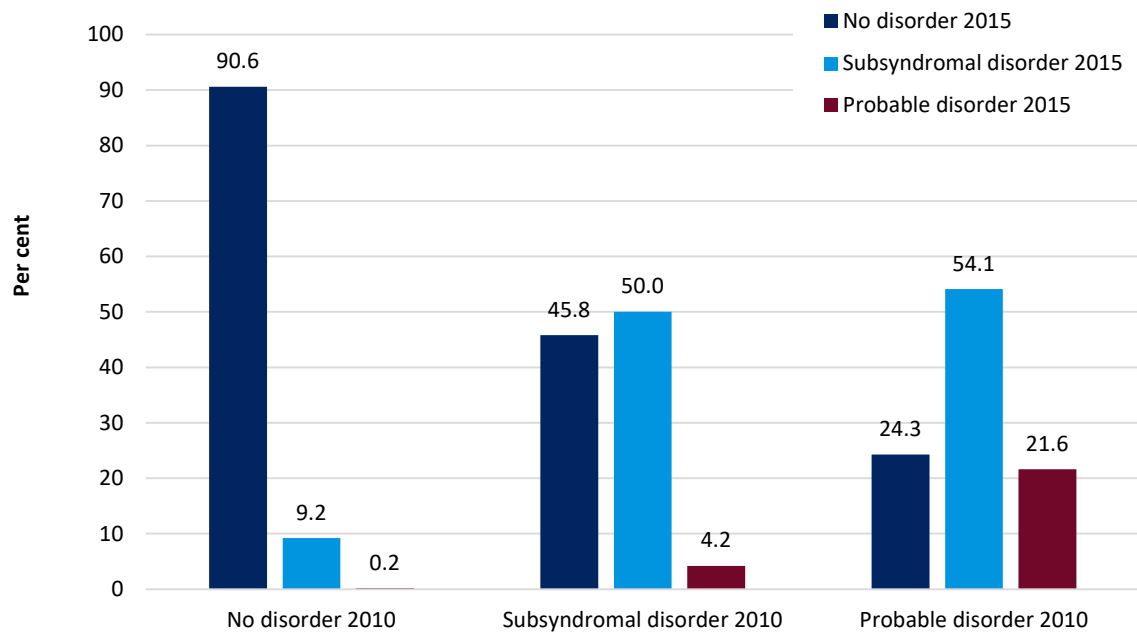


Figure 9 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT in 2010 and 2015 based on self-reported measures of mental health



8.4 Depression (PHQ-9)

There was an overall trend for depressive disorder symptoms to increase in both Transitioned and Regular ADF members between 2010 and 2015. For those who had transitioned, 73.7% had no disorder on the Patient Health Questionnaire 9-item scale (PHQ-9) in 2010, 23.6% had a subsyndromal disorder and 2.7% had a probable disorder. In 2015, 54.9% reported no disorder, subsyndromal disorder increased slightly to 33.6% and probable disorder doubled to 11.5%. Of those remaining in the Regular ADF in 2010, 82.9% did not meet criteria for disorder on the PHQ-9 in 2010, 16.1% met criteria for subsyndromal disorder and 1.0% for probable disorder. In 2015, those not meeting criteria for a disorder decreased to 67.1%, those meeting criteria for subsyndromal disorder increased to 29.6% and the proportion of those having a probable depressive disorder increased to 3.3%. That is, although both groups increased between 2010 and 2015, the relative increase in depressive disorders was markedly greater for those who discharged from active military service.

In terms of those with no disorder in 2010, a greater proportion of the Regular ADF (74.3%) relative to Transitioned ADF (66.1%) maintained no disorder status in 2015. Comparable proportions of Transitioned ADF (27.4%) and Regular ADF (23.9%) worsened from no disorder in 2010 to subsyndromal disorder in 2015. However, although the absolute rates were low, proportionally more Transitioned ADF members (6.4%) shifted from no depressive disorder in 2010 to probable disorder in 2015 when compared to Regular ADF (1.8%) (Figure 10 and Figure 11).

In terms of those with subsyndromal depressive disorder, slightly fewer of the Transitioned ADF (51.9%) relative to Regular ADF (57.3%) retained their subsyndromal status in 2015. However, twice as many Transitioned compared to Regular ADF members worsened to probable disorder in 2015 (23.1% vs 9.2%).

Considering those with probable disorder in 2010, more Transitioned members still had a probable depressive disorder in 2015 (48.2%) when compared to Regular ADF (31.0%), and fewer Transitioned ADF (41.1%) decreased to subsyndromal status than Regular ADF (55.2%).

Overall, Transitioned ADF members had more depression during service than those who remained in the ADF. It is likely that one reason for the greater depression in Transitioned ADF members in 2015 relative to those who remained in the Regular ADF was that they suffered more depression during military service, and this contributed to their discharge from the ADF. The observation that psychologically healthier individuals tend to remain in the ADF is a theme that is recurrently noted in this report, and it is underscored by the self-reported depression levels.

Despite the conclusion of a healthy worker effect contributing to greater depression in those who transitioned out of the ADF, it is worth noting that more than twice as many of those who transitioned worsened over time to have probable depression than those who remained in the Regular ADF. This suggests that pre-existing depression levels cannot adequately explain the worsening of depression levels after discharge. It has been noted earlier in this report that transition is associated with many challenges, including loss of identity (Black & Papile, 2010; Caspi & Roberts, 2001; Mobbs & Bonanno, 2018; Ray & Heaslip, 2011), unemployment, financial difficulties, domestic difficulties (Morin, 2011), and delayed issues related to moral injury-related problems (Wisco et al., 2017). Each of these challenges can contribute to depression (Denneson et al., 2015; Pease et al., 2016), and it is possible that they have cumulative effects over time after discharge from the ADF, because it is during this period that many veterans experience these difficulties to a greater degree. For example, the lack of identity of no longer being in active military service or the loss of the social network that the ADF affords may compound depressive tendencies. It is highly likely that these effects will be greatest in those who are already predisposed to depression, which this report highlights are those individuals who do eventually discharge from the ADF.

It is worth emphasising that twice as many of those who transitioned compared to those who remained in the Regular ADF worsened from subsyndromal levels of depression during ADF service to probable depressive disorder in 2015. This highlights an opportunity for early intervention among those with indications of

depression in the ADF. There are many effective programs for depression that have solid evidence bases, and many of the psychological programs that exist are ideally suited for subsyndromal levels of depression (Cuijpers, van Straten & Warmerdam, 2007; Lang, Blackwell, Harmer, Davison & Holmes, 2012; Rahman et al., 2016), while pharmacological interventions exist for more syndromal depression (Cuijpers et al., 2010). Identification and early intervention for subsyndromal depression in ADF personnel could have two potential benefits: (a) retention of individuals within the ADF, and (b) prevention of worsening depression following discharge.

Figure 10 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 in 2010 and 2015 based on self-reported measures of mental health

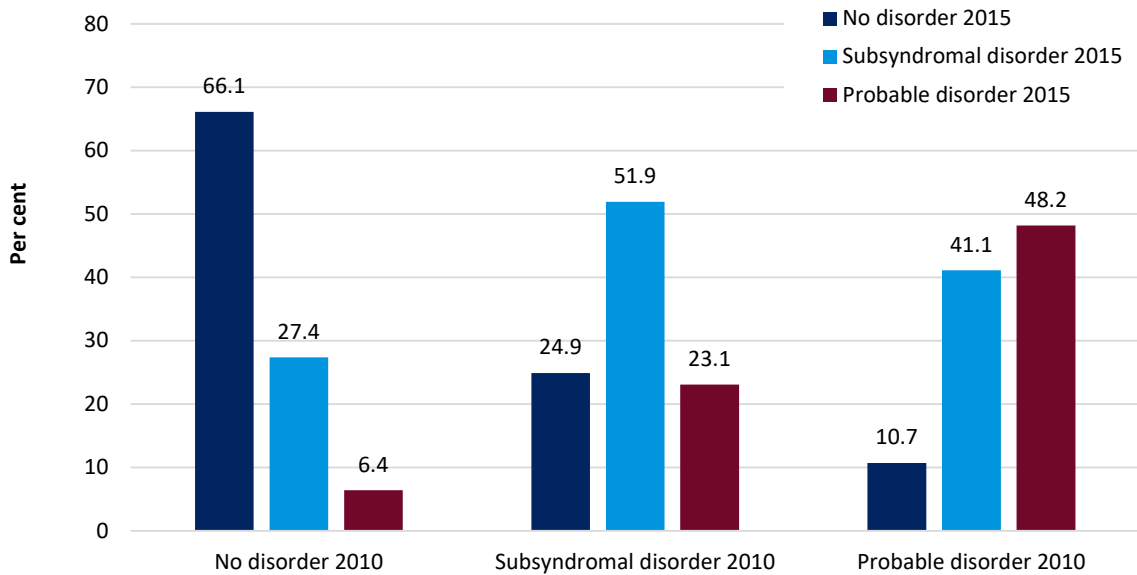
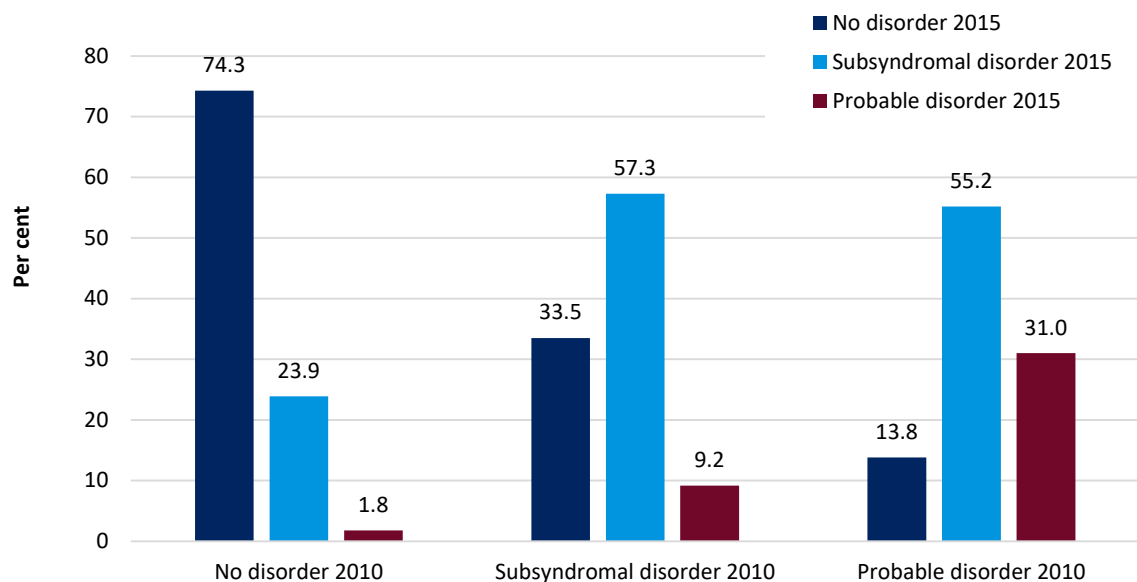


Figure 11 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 in 2010 and 2015 based on self-reported measures of mental health



8.5 Suicidality

In 2010, 8.8% of the longitudinal cohort reported any suicidality, and this increased to 16.7% in 2015. Among those who had transitioned, 12.3% reported any suicidality in 2010, which more than doubled to 27.4% in 2015. Among those who remained in the Regular ADF, 7.5% reported suicidality in 2010 and 12.7% in 2015.

Regarding those with no suicidality in 2010, more of the Transitioned ADF (21.7%) reported suicidality in 2015 relative to the Regular ADF (9.9%). In terms of those with suicidality in 2010, more of the Transitioned ADF (68.1%) reported suicidality than Regular ADF (47.2%) in 2015 (Figure 12 and Figure 13).

The observation that one in four personnel who transitioned out of the ADF reported suicidal ideation is a concerning pattern because suicidal ideation is one of the major predictors of completed suicides (Cavanagh, Carson, Sharpe & Lawrie, 2003). This trend accords with the observation that reported suicide attempts were greater in Transitioned (1.3%) compared to Regular ADF members (0.5%); it is also possible that respondents may also be under-reporting suicide attempts. Hence, it is important to reduce ideation before it advances to suicide attempts.

As with other disorders reported above, suicidal ideation during ADF service was an important precursor to suicidality following discharge, with over two-thirds of those reporting suicidality in the ADF reporting suicidality following discharge. This highlights that significant inroads could be made into reducing suicide risk after transition by targeting suicidal ideation in those with risk during ADF service. There are various suicide prevention and treatment programs available that possess good evidence, including web-based programs that can be implemented with considerable confidentiality and can overcome logistic issues of access to care (Larsen, Nicholas & Christensen, 2016; Perry, Werner-Seidler, Calear & Christensen, 2016). Consideration of these programs, as well as more traditional evidence-based programs that involve face-to-face treatment (Calati & Courtet, 2016), could target those in the ADF showing early signs of suicidal risk.

It should be noted, however, that suicidal ideation increased in the Transitioned ADF members after discharge, and in a large proportion of these, suicidal risk was not reported in 2010 during ADF service. The ADF has implemented a range of strategies to reduce suicidal risk in the services in recent years, and the rate of suicide attempts in the ADF is lower than in the Australian community. This suggests that strategies employed within the ADF may be effective, but when members discharge from military service, they may no longer have the controls in place that limit suicidal ideation. This pattern also suggests that aiming suicidal risk reduction strategies for ADF personnel with suicidal ideation would not necessarily be targeting those individuals who only develop suicidal risk after discharge. It appears that the stressors of transition may lead to a range of potential factors that can trigger new cases of suicidal ideation. Accordingly, there is a need to increase awareness among Transitioned ADF of the services available for suicidality, reduce stigma and other barriers to care, and ensure that adequate services are available for treatment of those with suicidal risk after discharge.

Figure 12 Proportion of Transitioned ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures of mental health

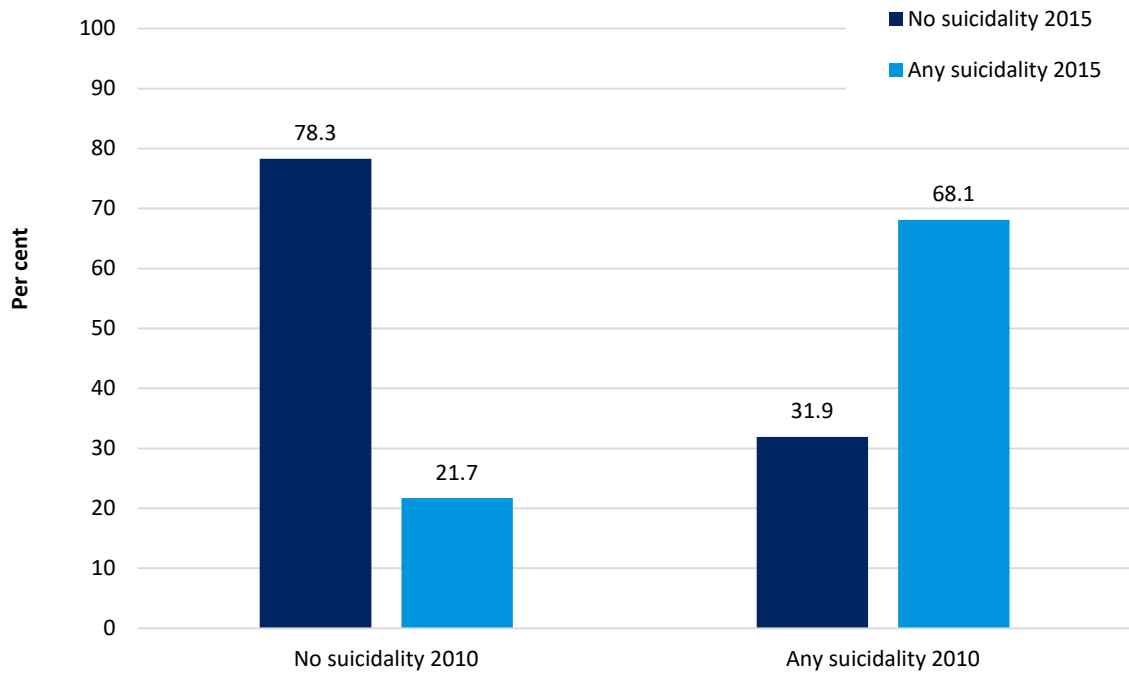
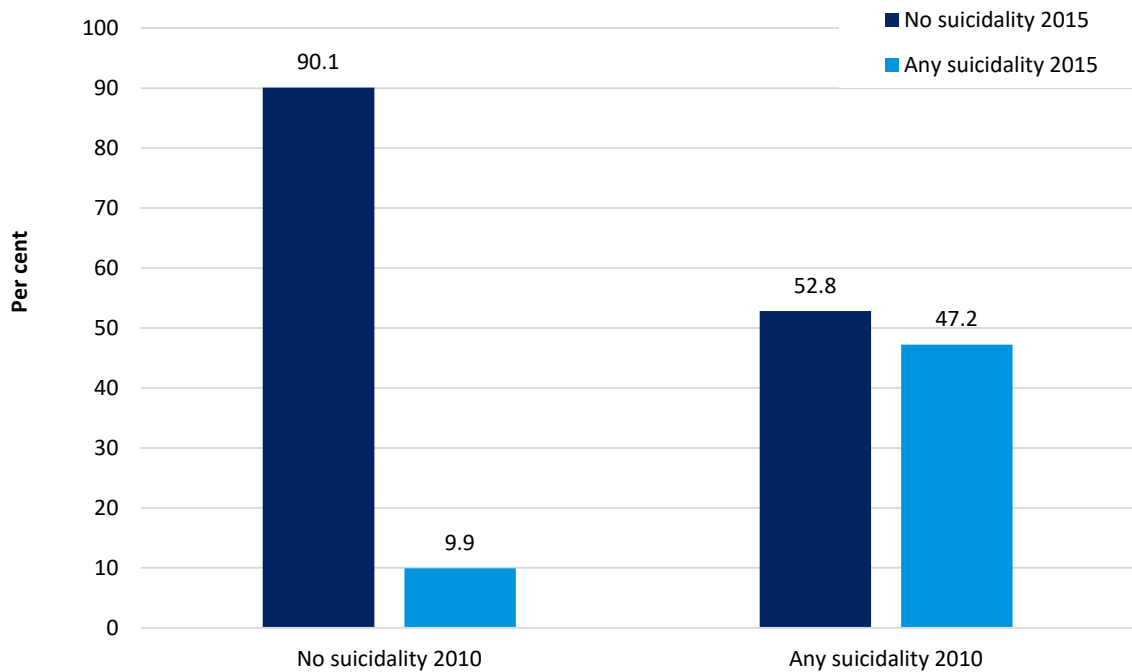


Figure 13 Proportion of 2015 Regular ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures of mental health



8.6 Anger symptoms (DAR-5)

Overall, there was a trend for those who transitioned to experience higher rates of problematic anger on the Dimensions of Anger Reactions 5-item scale (DAR-5) than those who remained in active military service; however, the rate of increase in problematic anger was similar for both groups, with this doubling from 12.0% to 24.8% in the Transitioned ADF, and from 7.3% to 13.0% in the Regular ADF.

Among cohort members with no problematic anger in 2010, a greater proportion of those who had Transitioned compared with those who remained in the Regular ADF reported problematic anger in 2015 (19.9% vs 10.4%). In terms of those with problematic anger in 2010, markedly more of those who transitioned (61.3%) reported this again in 2015 compared with those who remained in the Regular ADF (46.0%) (Figure 14 and Figure 15).

Anger is increasingly recognised as a common feature of posttraumatic stress (Barrett, Mills & Teesson, 2013), such that it is now formally acknowledged in the DSM-5 PTSD criteria (Friedman et al., 2011). Anger can be associated with the greater arousal that is frequent in posttraumatic stress, and also with the exaggerated vigilance that can readily trigger aggression in response to perceived threats (Jakupcak et al., 2007). Moreover, anger can be a major driver of poor functioning because of its capacity to disrupt social functioning and close interpersonal relationships (Meffert et al., 2014). These factors underscore why it is critical to consider anger in the context of veterans who transition from the ADF.

Those Transitioned ADF displayed more anger problems during their ADF service than those who remained in the ADF. This suggests that the heightened anger problems observed in 2015 in the Transitioned ADF may be attributed, in part, to the earlier anger problems that existed in 2010 during ADF service.

The pattern of findings indicates that treatment programs for Transitioned ADF need to address the anger problems that exist in the large proportion of Transitioned ADF reporting these. However, mainstream PTSD programs may not work optimally in reducing anger problems (Rodenburg, Heesink & Droždek, 2016). Programs do exist for treating anger (Chemtob, Novaco, Hamada & Gross, 1997; Morland et al., 2010), and early interventions that target anger for personnel who display anger problems in the ADF may serve to limit worsening of anger problems in the years following discharge. The observation that anger problems worsened in those who left the ADF in the years following discharge, and these personnel were more at risk of anger problems while in active service, underscores the potential value of early intervention for anger problems during ADF service.

Figure 14 Proportion of Transitioned ADF in the longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures of mental health

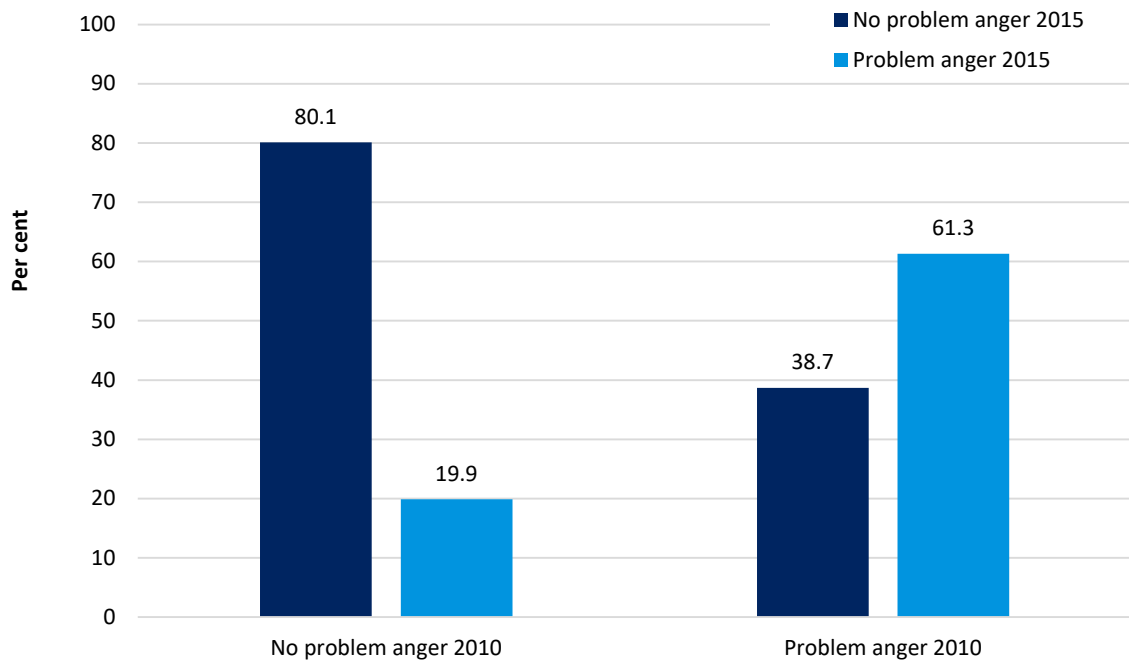
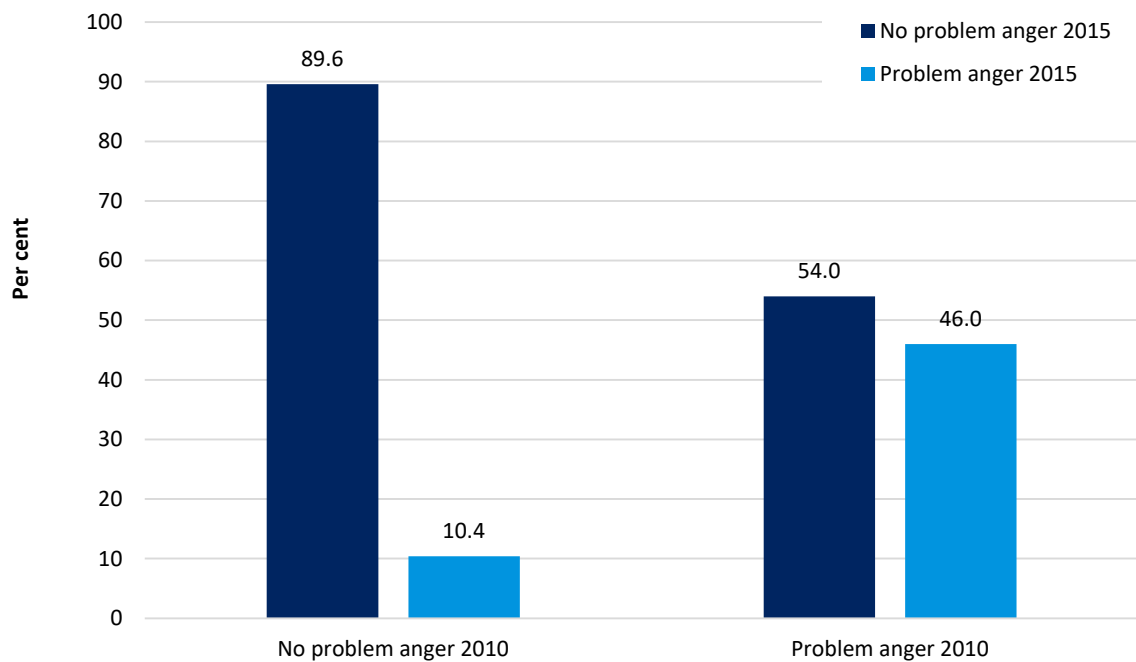


Figure 15 Proportion of 2015 Regular ADF in the longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures of mental health



8.7 Physical violence

Overall, the reported incidence of physical violence was very low in this population – 1.6% in 2010 and 1.3% in 2015. There was a trend for those who transitioned to engage in violence more than those who remained in active military service. Among those who had transitioned, 2.5% reported violence problems in 2010, which remained the same in 2015. Among those who remained in the Regular ADF, 1.2% reported violence problems in 2010, which reduced to 0.9% in 2015.

Among cohort members with no violence problems in 2010, a greater proportion of those who had transitioned compared with those who remained in the Regular ADF reported violence problems in 2015 (2.1% vs 0.8%). In terms of those with violence problems in 2010, markedly more of the Transitioned personnel (16.7%) reported violence problems than Regular ADF personnel (5.8%) in 2015 (Figure 16 and Figure 17).

Although the absolute numbers are actually quite low, these acts of violence can have very significant adverse consequences, including domestic violence, criminal charges, and even imprisonment. There is evidence from international militaries that veterans who had combat roles from the Middle East wars have higher conviction rates related to violence (MacManus et al., 2013). Accordingly, it is important that cases of violence in veterans are mitigated to reduce the personal, family, and social repercussions. To this end, this pattern of findings suggests that 16.7% of those with any violent tendencies during active service display violence after discharge. Accordingly, there should be strict policies in the ADF regarding management of any violent behaviour, including evidence-based treatment programs that aim to reduce aggressive behaviours in any ADF personnel who display violent tendencies.

Figure 16 Proportion of Transitioned ADF in the longitudinal cohort who 'got into a fight and hit someone in the last month' in 2010 and 2015 based on self-reported measures of mental health

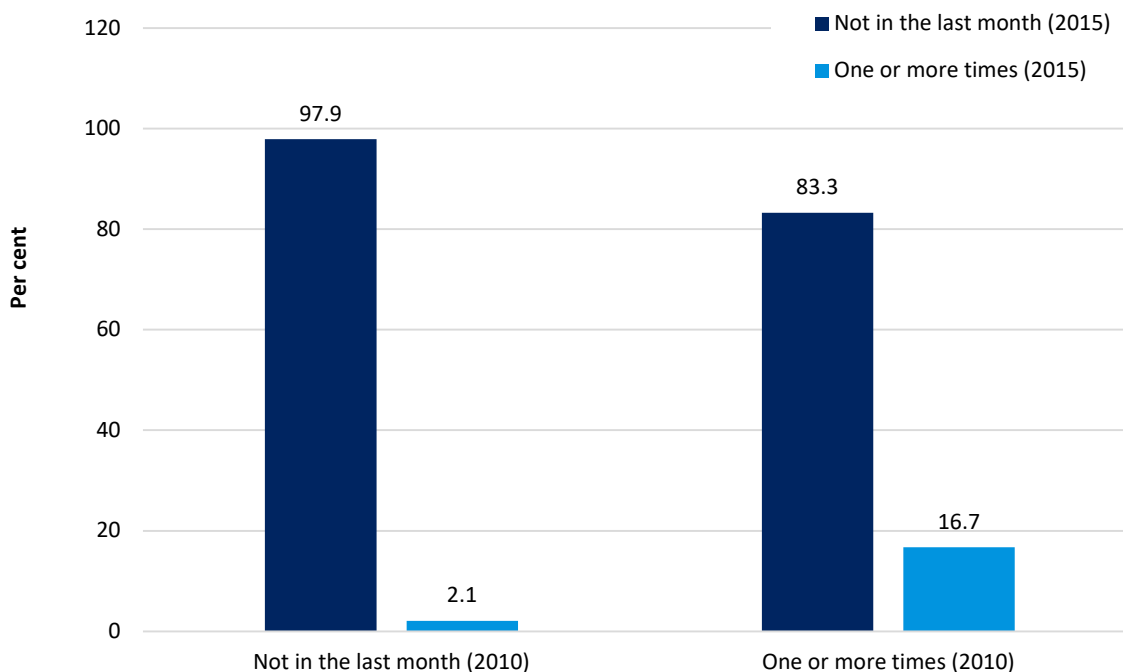
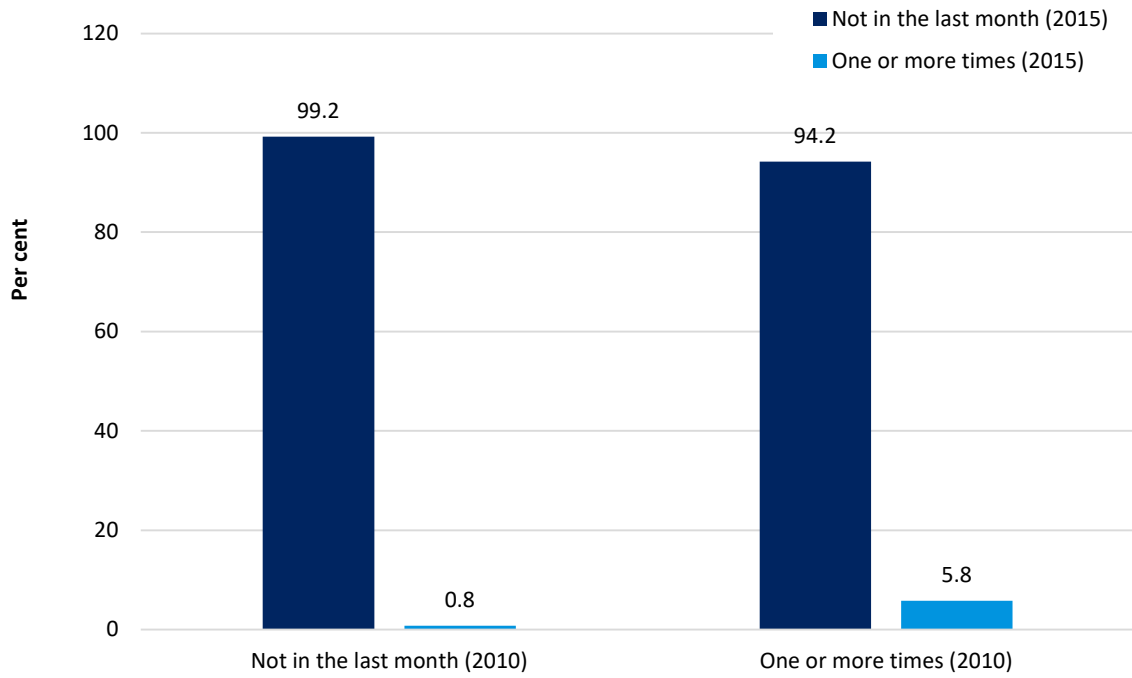


Figure 17 Proportion of 2015 Regular ADF in the longitudinal cohort who 'got into a fight and hit someone in the last month' in 2010 and 2015 based on self-reported measures of mental health



9 Longitudinal course of probable mental disorder in the MHPWS population

9.1 Rates of probable disorder, subsyndromal disorder and no disorder in the longitudinal cohort

A composite probable mental disorder variable, including scores on the Kessler Psychological Distress 10-item scale (K10) and Posttraumatic Stress Disorder Checklist – civilian version (PCL-C), was calculated and used in a series of predictive analyses. The term ‘disorder’ in this chapter is defined in relation to scores on the K10 and PCL-C as follows:

- *No disorder (ref)*: below screening cut-off on K10 (17) and PCL-C (29)
- *Subsyndromal disorder*: above the optimal screening cut-off on either the K10 (17) or PCL-C (29), but below the optimal epidemiological cut-off on both K10 (25) and PCL-C (53)
- *Probable disorder*: above the epidemiological cut-off on either the K10 (25) or PCL-C (53).

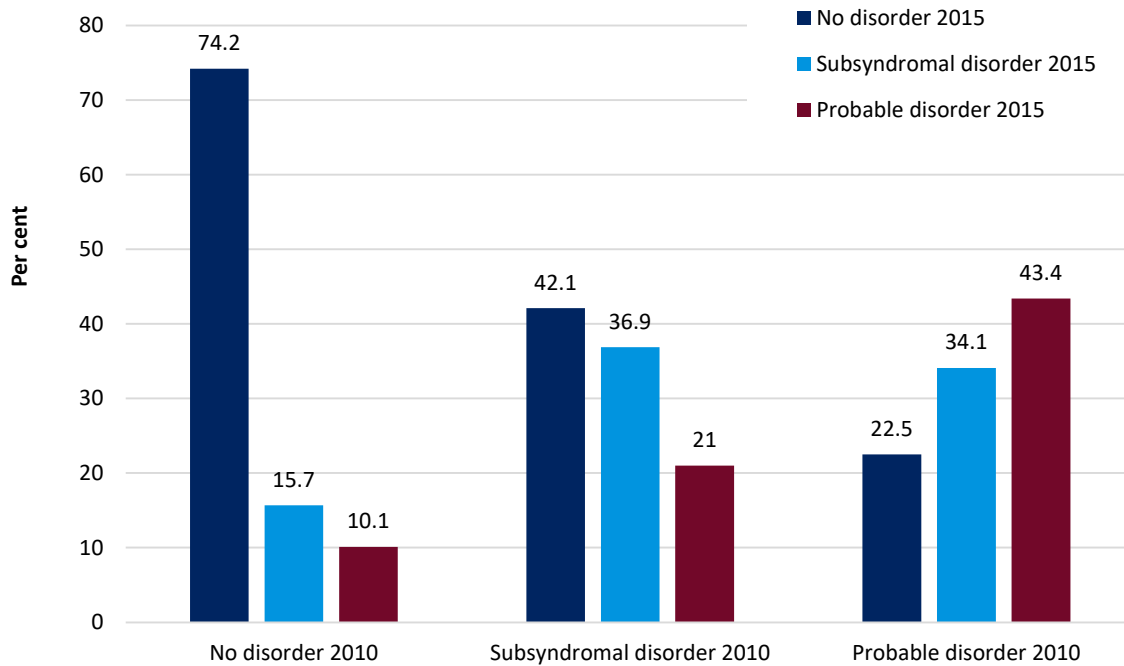
Table 14 and Figure 18 show the proportion of the entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on this measure in 2010 cross-tabulated by the same groupings in 2015. In 2010, 27.2% of the cohort reported subsyndromal disorder and 8.8% reported probable disorder. In 2015, subsyndromal disorder decreased to 23.1%, but probable disorder almost doubled to 16.0%. Among those with no disorder in 2010, 15.7% became new cases of subsyndromal disorder in 2015 and 10.1% became new cases of probable disorder. Of those with subsyndromal disorder in 2010, 36.9% remained subsyndromal in 2015, 21.0% became probable cases and 42.1% no longer reported a disorder. There were 43.4% of those with probable disorder in 2010 who also reported this in 2015, with 34.1% becoming subsyndromal and 22.5% no longer reporting a disorder.

Table 14 Proportion of longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 and PCL-C in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
K10 and PCL-C	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	4864	64.0	3610	74.2	764	15.7	490	10.1
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	2065	27.2	869	42.1	763	36.9	433	21.0
Probable disorder: Above both screening and epidemiological cut-offs	666	8.8	150	22.5	227	34.1	289	43.4
Total	7595	100.0	4629	60.9	1754	23.1	1212	16.0

Note: Unweighted data.

Figure 18 Proportion of longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 and PCL-C in 2010 and 2015 based on self-reported measures



9.2 Univariate and predictive modelling

9.2.1 Predictors of the shift into subsyndromal and probable disorder

In order to examine risk and protective factors for change in mental health status over time, a series of analyses examined a range of demographic and service-related predictors of change in disorder status between 2010 and 2015 (Figure 19).

Service, rank, anger, suicidality, lifetime trauma, deployment exposures and resilience were all associated with the shift from no disorder in 2010 into both subsyndromal and probable disorder in 2015, as well as from subsyndromal disorder in 2010 to probable disorder in 2015.

Service predicted the likelihood of moving from no disorder to subsyndromal disorder between 2010 and 2015. Compared to the Air Force, those in the Navy (OR 1.41; 95% CI 1.09, 1.84) were more likely to be subsyndromal than have no disorder in 2015. Regarding rank, among those with no disorder in 2010, those who were Non-Commissioned Officers (OR 1.56; 95% CI 1.28, 1.91) and those who were Other Ranks (OR 1.45; 95% CI 1.01, 2.09) were more likely to be subsyndromal than have no disorder in 2015 when compared to Officers. Similarly, compared to Officers, those who were Non-Commissioned Officers (OR 1.73; 95% CI 1.34, 2.22) and those who were Other Ranks (OR 2.41; 95% CI 1.62, 3.59) were also more likely to have a probable disorder than no disorder in 2015. Rank was also significantly associated with the likelihood of moving from subsyndromal disorder in 2010 to probable disorder in 2015. Compared to Officers, those who were Non-Commissioned Officers (OR 1.79; 95% CI 1.28, 2.49) and those who were Other Ranks (OR 3.91; 95% CI 2.38, 6.42) were more likely to have progressed to probable disorder than to have no disorder in 2015.

These patterns suggest that Officers are more resilient over time than other ADF personnel, possibly reflecting factors that are associated with their officer status. In any case, it suggests that monitoring and management of mental health following discharge may need to be tailored somewhat differently according to one's ADF rank. On the one hand, Officers appear to be less at risk of developing a new disorder or a worsening of an existing problem following discharge than other personnel. Despite this, even Officers can develop mental

health difficulties and accordingly one needs to consider other risk factors, including subsyndromal levels of symptoms during military service, when planning services for Officers after discharge.

Among those with no disorder in 2010, scoring above the cut-off for problematic anger in 2010 was associated with a greater likelihood of subsyndromal disorder (OR 2.48; 95% CI 1.47, 4.18) and probable disorder (OR 1.99; 95% CI 1.04, 3.80) compared to no disorder in 2015. Among those with subsyndromal disorder in 2010, scoring above the cut-off for problematic anger in 2010 was also associated with a greater likelihood of moving to probable disorder (OR 2.14; 95% CI 1.43, 3.18), compared to having no disorder in 2015.

Several explanations may be offered for the predictive role of anger in leading to subsequent worsening of disorder. First, anger is one feature of posttraumatic stress disorder (PTSD), and so early indications of anger may reflect one aspect of PTSD that may be a risk factor for worsening of symptoms over time (Barrett et al., 2013; Jakupcak et al., 2007). Second, anger can undermine social, occupational, and interpersonal functioning, which can in turn compound psychological functioning (Meffert et al., 2014). Third, anger can inhibit fear responses, which may disrupt emotional processing of negative experiences and lead to worsening of PTSD and other fear disorder symptoms (Foa, Riggs, Massie & Yarczower, 1995).

Suicidality predicted the likelihood of moving from no disorder to probable disorder between 2010 and 2015. Specifically, those reporting suicidality in 2010 were more likely to move from having no disorder in 2010 to probable disorder in 2015 compared to those who did not report suicidality (OR 3.11; 95% CI 1.65, 5.86).

Most attention on suicidality has focused on prediction of suicidal ideation (because of its risk status for subsequent suicide attempts). It should be noted, however, that suicidality can also be used as an important predictor of subsequent disorders following discharge. The sense of hopelessness that ADF members may feel during military service may be a precursor to development of a range of disorders after transition. It is possible that the sense of hopelessness or futility that may be experienced during ADF service may limit capacity to engage in gainful employment, seek out social interactions, or be involved in meaningful activities – all factors that can contribute to worsening mental health. Accordingly, indications of suicidal risk during ADF service should not only be regarded as an important target of intervention to abort any development of suicidal intent, but also as a means to assist defence personnel who may require assistance to manage broader social and emotional needs.

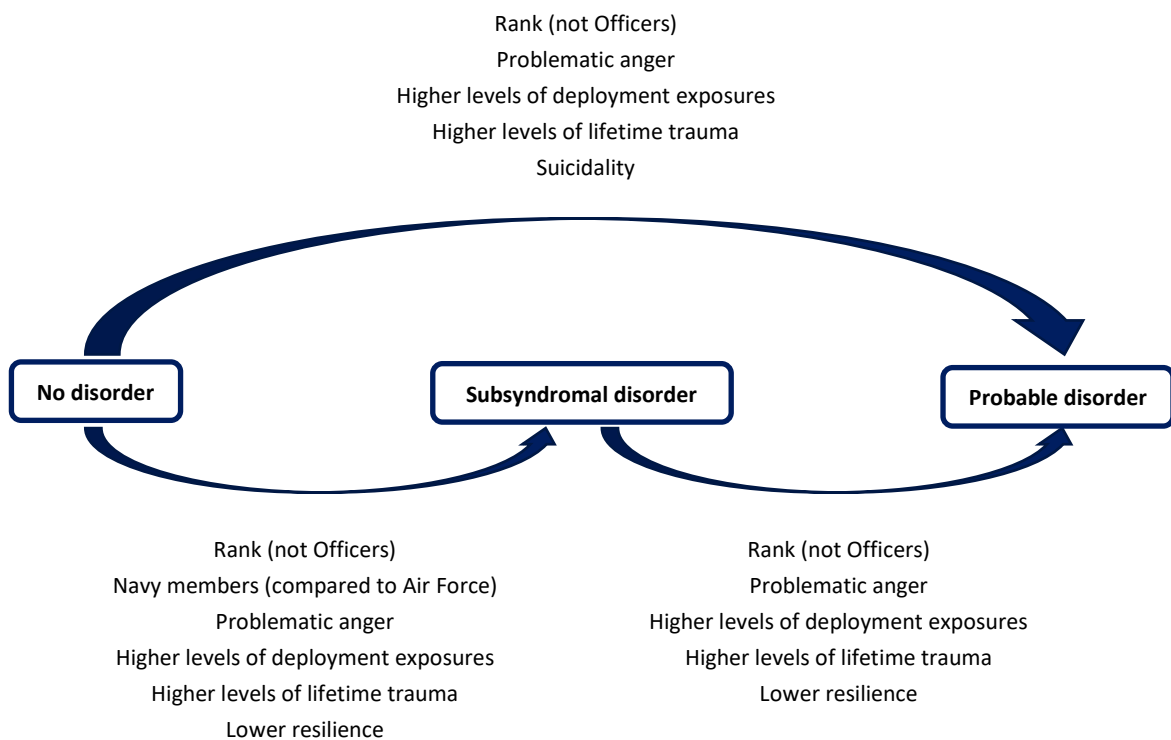
Among those with no disorder in 2010, the association between lifetime trauma exposure and the probability of having subsyndromal or probable disorder in 2015 progressively increased with additional traumas. Specifically, the odds of having subsyndromal disorder was greater among those with 2 to 3 lifetime trauma types (OR 1.65; 95% CI 1.28, 2.12), and greater again among those reporting 4+ types (OR 3.17; 95% CI 2.45, 4.11) when compared with those reporting 0 to 1 lifetime trauma exposure types. Only reporting 4+ lifetime trauma exposure types was associated with having probable disorder (OR 2.16; 95% CI 1.59, 2.94). Similarly, among those with subsyndromal disorder in 2010, reporting 4+ lifetime trauma exposure types was associated with greater likelihood of having a probable disorder (OR 2.96; 95% CI 1.98, 4.44) compared to being disorder free in 2015. Regarding deployment-related traumatic exposures, compared to those with low deployment exposures, those with high deployment exposures were more likely to move from having no disorder in 2010 to subsyndromal (OR 1.87; 95% CI 1.44, 2.43) or probable disorder (OR 1.89; 95% CI 1.37, 2.61) compared to no disorder in 2015. Having high deployment exposure (compared to low) was associated with the likelihood of moving from subsyndromal disorder in 2010 to having a probable disorder (OR 2.97; 95% CI 2.04, 4.32) compared to being disorder free in 2015.

There is abundant evidence for the dosage effect between amount of trauma and likelihood of developing PTSD (May & Wisco, 2016), with some evidence that the influence of trauma severity is more pronounced in military than civilian samples (Brewin, Andrews & Valentine, 2000). This also accords with evidence that exposure to death and trauma is a vulnerability factor for suicidality (LeBouthillier, McMillan, Thibodeau & Asmundson, 2015; Stanley, Hom, Hagan & Joiner, 2015). It is worth noting that this predictor included *lifetime* trauma exposure and not simply traumatic events experienced during deployments or ADF service. It has

previously been noted that lifetime rates of sexual trauma, such as experiencing rape and sexual assault, as well as interpersonal traumas, are more prevalent in the Regular ADF than in the Australian community, with the majority of these events first occurring before enlistment (Van Hooff et al., 2012). This pattern suggests that consideration for early intervention should be given to those ADF members who are more highly exposed to traumatic events (either prior to or during ADF service), as this represents a marked risk factor for worsening of symptoms following discharge.

Resilience was associated with a lower likelihood of shifting from no disorder in 2010 into subsyndromal disorder in 2015, as well as from subsyndromal disorder in 2010 into probable disorder in 2015. Among those with no disorder in 2010, higher resilience was associated with lower likelihood of having subsyndromal compared to no disorder in 2015 (OR 0.88; 95% CI 0.82, 0.95). Higher self-reported resilience was also associated with less likelihood of moving from subsyndromal disorder in 2010 to probable disorder (OR 0.88; 95% CI 0.79, 0.98).

Figure 19 Predictors of the shift into subsyndromal and probable disorder in 2015



10 Implications and future directions

This chapter summarises the findings from the longitudinal analyses in the context of potential implications for how the mental health of Transitioned ADF may be understood and managed. One of the major conclusions to emerge from these findings is the differential course of psychological problems over time between Regular and Transitioned ADF members. Across psychological problems, Regular ADF members tended to have a more episodic course than Transitioned members, who tended to have a more consistent pattern of problems. For example, whereas 55% of Transitioned members with probable posttraumatic stress disorder (PTSD) in 2010 still had PTSD in 2015, just 17.7% of Regular ADF members still had probable PTSD in 2015. This reflects a tendency for Regular ADF members to show remission over time, whereas the Transitioned members did not show this pattern. In contrast, Transitioned personnel showed an increase in some conditions over time, and this is particularly reflected in increased anxiety disorders.

10.1 Sensitisation of stress reactions during and following ADF service

A recurrent theme to emerge from these findings was that anxiety disorders and PTSD (or associated symptoms) tended to worsen following transition, and this risk was heightened if there were indications of risk of these problems during ADF service. As noted in the discussion in Chapter 7 of the *Mental Health Changes Over Time: a Longitudinal Perspective* report, this pattern accords with considerable evidence that anxiety conditions can worsen over time as a function of sensitisation of neural processes that occurs following initial exposure to stressful events. Given the heightened risk of individuals who display subsyndromal or probable disorder levels of anxiety or PTSD during ADF service, there is an opportunity for targeted intervention to limit the likelihood of those individuals suffering persistent or worsened symptoms after transition. It should be emphasised that it may be easier to reach these individuals while they are still active serving ADF members, since many transitioned individuals are not readily tracked and monitored to determine their mental health status. The finding that subsyndromal levels of anxiety or PTSD pose a marked risk for subsequent worsening after discharge highlights the issue that one should not focus only on those individuals who display full disorders, but rather equal attention should be given to those with the early signs of anxiety or PTSD.

10.2 Early detection of suicide risk

The *Mental Health Prevalence Report* has highlighted that members who transition out of the ADF are at heightened risk of suicidality (Van Hooff et al., 2018). Most worryingly, in the current report, the rate of suicidality doubled in those who transitioned between 2010 and 2015, to the extent that one in four personnel who transitioned out of the ADF reported suicidality. There is an opportunity for early intervention for many of these individuals because two-thirds of ADF personnel who reported suicidality during ADF service still reported suicidality after transition. There are numerous evidence-supported strategies that can be implemented to reduce suicidal risk, and the possibility of implementing these more effectively in those who indicate risk during ADF service may have long-term benefits.

10.3 Prevention of alcohol abuse

Evidence of subsyndromal or probable alcohol abuse during ADF service represented a risk factor for personnel who transition out of the ADF developing an alcohol use disorder. Alcohol problems represent a marked health and social issue for veteran communities around the world, and the current data suggest that preventative steps could be taken to address the early trajectory of problematic drinking while personnel are still in the ADF.

10.4 Screening of ADF members prior to and following transition

There was ample evidence from this research program that many mental health issues that arise following transition can be potentially detected through screening while personnel are serving in the ADF. This notion of mental health screening is well known to the ADF, and underpins the annual checks that are conducted of personnel. However, the findings in this report emphasise that renewed attention may be given to screenings prior to transition, because in some cases this will be a final opportunity to screen personnel before they leave the structured environment of the ADF. It has been well documented that screenings in the absence of properly prepared and evidence-based programs to address the issues identified in the screening process can be ineffective (Rona et al., 2017; Rona et al., 2006). The repeated observation in the report that at-risk individuals can be identified prior to transition highlights that careful preparation and provision of best-evidence care should be provided to those at-risk individuals prior to leaving the ADF.

Another major trend in the current report is that many cases of anxiety, depression, suicidality, and alcohol problems emerged for the first time after discharge. This pattern highlights that there is a continued need to raise awareness of these issues. The *Mental Health Prevalence Report* noted that many of the mental health issues that arose following discharge developed in the initial year after leaving the ADF, which highlights the importance of connecting these ADF members to primary care and mental health services where needed after transition, and the need to renew efforts, where possible, to improve awareness and early identification of mental health symptoms. The ADF does not have a formal role to play in the management of mental health in veterans, whereas the Department of Veterans' Affairs (DVA) offers many proactive services, but many transitioned ADF members are not engaged with DVA. The *Pathways to Care Report* (Forbes et al., 2018) highlighted that many transitioned ADF with mental health problems did engage with services after discharge; however, many of these services were not optimal. This represents a major challenge for those responsible for managing the mental health care of veterans. On the basis of the current report, there are huge potential gains to be made by early interventions in the transition period that (a) identify emerging mental health problems in the period after leaving the ADF, and (b) ensure that veterans with any mental health problem are directed to evidence-based care. Although the benefits of early intervention are well documented in the context of mental health, this remains a major challenge in Australia because identifying veterans in need and matching all of them with appropriate services has yet to be achieved. It should be noted that Australia is not alone in this regard, as military and veteran organisations around the world face comparable challenges.

10.5 Need for ongoing monitoring of current cohort

The shifting nature of mental health over time in this study has highlighted the changing needs of veterans. What is unknown is how veterans' mental health develops over subsequent years after discharge, as they settle into civilian life. There is scant knowledge internationally of long-term trajectories of veteran mental health, and none in Australia. Accordingly, policy development and future planning will be significantly enhanced by future assessment of the mental health of the current cohort.

Acronyms and abbreviations

ABS	Australian Bureau of Statistics
ADF	Australian Defence Force
AIFS	Australian Institute of Family Studies
AIHW	Australian Institute of Health and Welfare
AUDIT	Alcohol Use Disorders Identification Test
CD-RISC 2	Connor-Davidson Resilience Scale (two-item version)
CI	confidence interval
CIDI	Composite International Diagnostic Interview
CTSS	Centre for Traumatic Stress Studies
DAR-5	Dimensions of Anger Reactions 5-item scale
Defence	Department of Defence
DSM-IV	<i>Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition</i>
DSM-5	<i>Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition</i>
DVA	Department of Veterans' Affairs
GAD	generalised anxiety disorder
GAD-7	Generalised Anxiety Disorder 7-item scale
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
K10	Kessler Psychological Distress 10-item scale
MEAO	Middle East Area of Operations
MEC	Medical Employment Classification
MECRB	Medical Employment Classification Review Board
MHPWS	Mental Health Prevalence and Wellbeing Study
MilHOP	Military Health Outcomes Program
NCO	Non-Commissioned Officer
NDI	National Death Index
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
OCD	obsessive-compulsive disorder
OR	odds ratio
PCL-C	Posttraumatic Stress Disorder Checklist – civilian version
PHQ-9	Patient Health Questionnaire 9-item scale
PMKeyS	Personnel Management Key Solution
Programme	Transition and Wellbeing Research Programme
PTSD	posttraumatic stress disorder

Glossary

Affective disorders. A class of mental disorders. The Mental Health and Wellbeing Transition Study examined three types of affective disorder: depressive episodes, dysthymia and bipolar affective disorder. A key feature of these mental disorders is mood disturbance.

Agoraphobia. Marked fear or avoidance of situations such as crowds, public places, travelling alone, or travelling away from home, which is accompanied by palpitations, sweating, shaking, or dry mouth, as well as other anxiety symptoms such as chest pain, choking sensations, dizziness, and sometimes feelings of unreality, fear of dying, losing control, or going mad.

Alcohol dependence. Characterised by an increased prioritisation of alcohol in a person's life. The defining feature of alcohol dependence is a strong, overwhelming desire to use alcohol, despite experiencing a number of associated problems. A diagnosis was given if the person reported three or more of the following symptoms in the previous 12 months:

- a strong and irresistible urge to consume alcohol
- a tolerance to the effects of alcohol
- an inability to stop or reduce alcohol consumption
- withdrawal symptoms upon cessation or reduction of alcohol intake
- continuing to drink despite it causing emotional or physical problems
- reduction in important activities because of drinking or in order to drink.

Alcohol harmful use. Diagnosis of 'alcohol harmful use' not only requires high levels of alcohol consumption, but that the alcohol use is damaging to the person's physical or mental health. Each participant was initially asked if they consumed 12 or more standard alcoholic drinks in a 12-month period. If so, they were then asked a series of questions about their level of consumption. A diagnosis of alcohol harmful use was applied if the alcohol interfered with either work or other responsibilities; caused arguments with their family or friends; was consumed in a situation where the person could get hurt; resulted in being stopped or arrested by police; or if the participant continued to consume alcohol despite experiencing social or interpersonal problems as a consequence of their drinking during the previous 12 months. A person could not meet criteria for alcohol harmful use if they met criteria for alcohol dependence.

Alcohol Use Disorders Identification Test (AUDIT). Alcohol consumption and problem drinking was examined using the Alcohol Use Disorders Identification Test (Saunders et al., 1993), a brief self-report screening instrument developed by the World Health Organization. This instrument consists of 10 questions to examine the quantity and frequency of alcohol consumption, possible symptoms of dependence, and reactions or problems related to alcohol. The AUDIT is widely used in epidemiological and clinical practice for defining at-risk patterns of drinking.

Anxiety disorders. A class of mental disorder that involves the experience of intense and debilitating anxiety. The anxiety disorders covered in the survey were panic attacks, panic disorder, social phobia, specific phobia, agoraphobia, generalised anxiety disorder, PTSD and obsessive-compulsive disorder.

Australian Bureau of Statistics (ABS). Australia's national statistical agency, providing trusted official statistics on a wide range of economic, social, population and environmental matters of importance to Australia. To enable comparison of estimates in the Transitioned ADF with an Australian community population, direct

standardisation was applied to estimates in the 2014–2015 ABS National Health Survey (NHS) data. The NHS is the most recent in a series of Australia-wide ABS health surveys, assessing various aspects of the health of Australians, including long-term health conditions, health risk factors and health service use.

Australian Defence Force (ADF). The ADF is constituted under the *Defence Act 1903* (Cth) and, together with the Department of Defence, is collectively known as Defence. Defence’s mission is to defend Australia and its national interests. In fulfilling this mission, Defence serves the government of the day and is accountable to the Australian Parliament, which represents the Australian people to efficiently and effectively carry out the government’s defence policy. The current program of research aims to examine the mental, physical and social health of serving and ex-serving ADF members, and their families. It builds on previous research to inform effective and evidence-based health service provision for contemporary service members and veterans.

Australian Institute of Family Studies (AIFS). The Australian Government’s key research body in the area of family wellbeing. AIFS conducts original research to increase understanding of Australian families and the issues that affect them. The current research was conducted by a consortium of Australia’s leading research institutions led by the Centre for Traumatic Stress Studies at the University of Adelaide, and AIFS.

Australian Institute of Health and Welfare (AIHW). Australia’s national agency for health and welfare statistics and information. The AIHW was commissioned in this Programme to develop the Military and Veteran Research Study Roll by integrating contact information from various sources and databases.

Bipolar affective disorder. A class of mental disorder associated with fluctuations of mood that are significantly disturbed. These fluctuations of mood are markedly elevated on some occasions (hypomania or mania) and can be markedly lowered on other occasions (depressive episodes). A diagnosis of bipolar affective disorder was applied in this study if the individuals met criteria for mania or hypomania in the previous 12 months.

Centre for Traumatic Stress Studies (CTSS). A centre at the University of Adelaide that seeks to improve evidence-based practice by informing and applying scientific knowledge in the field of trauma, mental disorder and wellbeing in at-risk populations. The Transition and Wellbeing Research Programme was conducted by a consortium of Australia’s leading research institutions, led by the CTSS and the Australian Institute of Family Studies.

Class of mental disorder. Mental disorders are grouped into classes of disorder that share common features. Three classes of mental disorders were included in the survey: affective disorders, anxiety disorders and alcohol disorders.

Comorbidity. The occurrence of more than one disorder at the same time. Comorbidity was defined by grouping any alcohol disorders, any affective disorders, any anxiety disorders (excluding PTSD), and PTSD according to their co-occurrence. In addition to a breakdown of the individual patterns of co-occurrence, five categories were defined representing those with no mental disorder, and those with one, two, three or four disorder categories.

Composite International Diagnostic Interview (CIDI). The World Mental Health Survey Initiative version of the World Health Organization’s Composite International Diagnostic Interview Version 3 (CIDI 3.0) (Kessler & Ustun, 2004) provides an assessment of mental disorders based on the definitions and criteria of two classification systems: the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) (American Psychiatric Association, 1994) and the World Health Organization’s International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) (World Health Organization, 1994). This instrument was used in phase 2 of the current research Programme.

Confidence interval (CI). This measurement gives an estimated range of values that is likely to include an unknown population parameter – the estimated range being calculated from a given set of sample data.

Department of Veterans' Affairs (DVA). Delivers government programs for war veterans, and members of the ADF and the Australian Federal Police and their dependants. In 2014, DVA, in collaboration with the Department of Defence, commissioned the Transition and Wellbeing Research Programme, one of the largest and most comprehensive military research projects undertaken in Australia.

Deployment status. The Mental Health and Wellbeing Transition Study defined deployment status, based on survey responses, as:

- **Never deployed:** Individuals who did not endorse any deployments listed in the self-report survey (Your Military Career: Deployments) and did not endorse any deployment exposures (Your Military Career: Deployment Exposure)
- **Deployed:** Individuals who endorsed one or more of the listed deployments (Your Military Career: Deployments) or endorsed one or more of the deployment exposures (Your Military Career: Deployment Exposure).

Depressive episodes. Characteristic of a major depressive disorder, an episode requires that an individual has suffered from depressed mood lasting a minimum of two weeks, with associated symptoms or feelings of worthlessness, lack of appetite, difficulty with memory, reduction in energy, low self-esteem, concentration problems and suicidal thoughts. Depressive episodes can be mild, moderate or severe. All three are included under the same heading. Hierarchy rules were applied to depressive episodes, such that a person could not have met criteria for either a hypomanic or manic episode.

Diagnostic criteria. The survey was designed to estimate the prevalence of common mental disorders defined according to clinical diagnostic criteria, as directed by the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). Diagnostic criteria for a disorder usually involve specification of:

- the nature, number and combination of symptoms
- the time period over which the symptoms have been continuously experienced
- the level of distress or impairment experienced
- the circumstances for exclusion of a diagnosis, such as it being due to a general medical condition or the symptoms being associated with another mental disorder.

Dimensions of Anger Reactions 5-item scale (DAR-5). A concise measure of anger consisting of five items that address anger frequency, intensity, duration, aggression and interference with social functioning. Items are scored on a five-point Likert scale, generating a severity score ranging from 5 to 25, with higher scores indicating worse symptomatology. This scale has been used previously to assess Australian Vietnam veterans, as well as US Afghanistan and Iraq veterans, and shows strong unidimensionality, and high levels of internal consistency and criterion validity.

DVA client. A term used when referring to Department of Veterans' Affairs (DVA) clients for the purpose of analyses.

In constructing the DVA dataset for the Military and Veteran Research Study Roll, DVA created an indicator for assessing confidence in the accuracy of veterans' address details, based on the level of DVA's interaction with each veteran. Each of the following groups were considered a DVA client:

- High – where a veteran is in receipt of a fortnightly payment (such as income support or compensation pension) from DVA, it was a sign of regular ongoing contact with the client, and therefore DVA would have a high level of confidence that the client's address would be up to date and correct.

- Medium – where a veteran only holds a treatment card (i.e. does not also have an ongoing payment), there is a lower level of ongoing contact with the department, and therefore the level of confidence that DVA can assign to the accuracy of the client’s address is lower.
- Low – not all veterans who have their illness/injury liability claim accepted as service-related by DVA automatically receive a treatment card or pension payment; however, they would still be considered DVA clients.

For the purposes of this report, any individual in the study population who met the above criteria was flagged as a ‘DVA client’. Those with this flag were compared against those without this flag.

Dysthymia. Characterised as a chronic or pervasive disturbance of mood, lasting several years, that is not sufficiently severe or in which the depressive episodes are not sufficiently prolonged to warrant a diagnosis of a recurrent depressive disorder. Hierarchy rules were applied to dysthymia such that in order to have this disorder, a person could not have met criteria for either a hypomanic or manic episode and could not have reported episodes of severe or moderate depression within the first two years of dysthymia.

Ex-service organisation. Provides assistance to current and former ADF members. Services can include, but are not necessarily limited to, welfare support, help with DVA claims, and employment programs and social support.

Generalised anxiety disorder (GAD). A generalised and persistent worry, anxiety or apprehension about everyday events and activities, lasting a minimum of six months, that is accompanied by anxiety symptoms as described under ‘agoraphobia’. Other symptoms may include symptoms of tension, such as inability to relax and muscle tension, and other non-specific symptoms, such as irritability and difficulty in concentrating.

Generalised Anxiety Disorder 7-item scale (GAD-7). A brief seven-item screening measure based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* criteria for generalised anxiety disorder. Originally validated for use in primary care, the GAD-7 performs well in detecting probable cases of the disorder, with a sensitivity of 89% and a specificity of 82%.

Gold Card. A DVA health card for all conditions. Gold Card holders are entitled to DVA funding for services for all clinically necessary healthcare needs and all health conditions, whether or not they are related to war service. The card holder may be a veteran or the widow/widower or dependant of a veteran. Only the person named on the card is covered.

Hypomanic episodes. Episodes that last at least four consecutive days and are considered abnormal to the individual. These episodes are characterised by increased activity, talkativeness, elevated mood, disrupted concentration, decreased need for sleep and disrupted judgement, manifesting as risk-taking (for example, mild spending sprees). In a subgroup of people, these disorders are particularly characterised by irritability. To meet criteria for the ‘with hierarchy’ version, the person cannot have met criteria for an episode of mania.

Kessler Psychological Distress 10-item scale (K10). A short 10-item screening questionnaire that yields a global measure of psychological distress based on symptoms of anxiety and depression experienced in the most recent four-week period. Items are scored from 1 to 5 and are summed to give a total score of between 10 and 50. Various methods have been used to stratify the scores of the K10. The categories of low (10–15), moderate (16–21), high (22–29) and very high (30–50) that are used in this report are derived from the cut-offs of the K10 that were used in the 2007 Australian Bureau of Statistics National Survey of Mental Health and Wellbeing (Slade et al., 2009).

Lifetime prevalence. A prevalence that meets diagnostic criteria for a mental disorder at any point in the respondent’s lifetime.

Lifetime trauma. Exposure questions used in this study were drawn from the PTSD module of the Composite International Diagnostic Interview (Haro et al., 2006). Participants were asked to indicate whether or not they had experienced the following traumatic events: combat (military or organised non-military group); being a peacekeeper in a war zone or a place of ongoing terror; being an unarmed civilian in a place of war, revolution, military coup or invasion; living as a civilian in a place of ongoing terror for political, ethnic, religious or other reasons; being a refugee; being kidnapped or held captive; being exposed to a toxic chemical that could cause serious harm; being in a life-threatening automobile accident; being in any other life-threatening accident; being in a major natural disaster; being in a man-made disaster; having a life-threatening illness; being beaten by a spouse or romantic partner; being badly beaten by anyone else; being mugged, held up or threatened with a weapon; being raped; being sexually assaulted; being stalked; having someone close to you die; having a child with a life-threatening illness or injury; witnessing serious physical fights at home as a child; having someone close experience a traumatic event; witnessing someone badly injured or killed or unexpectedly seeing a dead body; accidentally injuring or killing someone; purposefully injuring, torturing or killing someone; seeing atrocities or carnage such as mutilated bodies or mass killings; experiencing any other traumatic event.

Mania. Similar to hypomania but more severe in nature. Lasting slightly longer (a minimum of a week), these episodes often lead to severe interference with personal functioning. In addition to the symptoms outlined under 'hypomania', mania is often associated with feelings of grandiosity, marked sexual indiscretions and racing thoughts.

Medical discharge. The involuntary termination of the ADF member's employment on the grounds of permanent or at least long-term unfitness to serve, or unfitness for deployment to operational (warlike) service.

Medical Employment Classification (MEC). An administrative process designed to monitor physical fitness and medical standards in the ADF. The MEC is divided into four levels (either current or on discharge from Regular ADF service):

- **MEC 1:** Members who are medically fit for employment in a deployed or seagoing environment without restriction.
- **MEC 2:** Members with medical conditions that require access to various levels of medical support or employment restrictions. However, they remain medically fit for duty in their occupation in a deployed or seagoing environment. In allocating subclassifications of MEC 2, access to the level of medical support will always take precedence over specified employment restrictions.
- **MEC 3:** Members who are medically unfit for duty in their occupation in a deployed or seagoing environment. The member so classified should be medically managed towards recovery and should be receiving active medical management with the intention of regaining MEC 1 or 2 within 12 months of allocation of MEC 3. After a maximum of 12 months, their MEC status is to be reviewed. If still medically unfit for military duties in any operational environment, they are to be downgraded to MEC 4 or, if appropriate, referred to a Medical Employment Classification Review Board (MECRB) for consideration of an extension to remain at MEC 3.
- **MEC 4:** Members who are medically unfit for deployment or seagoing service in the long term. Members who are classified as MEC 4 for their military occupation will be subject to review and confirmation of their classification by an MECRB.

Medical fitness. A status defined as:

- **Fit:** Those who are categorised as fully employable and deployable, or deployable with restrictions. Participants are classified as 'fit' if they fall into MEC 1 or 2 as described above, or are assigned a perturbed MEC value of 'fit'.

- **Unfit:** Those not fit for deployment, their original occupation and/or further service. This can include those undergoing rehabilitation or transitioning to alternative return-to-work arrangements or in the process of medically separating from the ADF. Participants are classified as 'unfit' if they fall into MEC 3 or 4 as described above, or are assigned a perturbed MEC value of 'unfit'.

Mental disorders. Defined according to the detailed diagnostic criteria within the World Health Organization's International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). This publication reports data for ICD-10 criteria.

Mental Health Prevalence and Wellbeing Study (MHPWS). A 2010 study that was part of the Military Health Outcomes Program, the first comprehensive investigation of the mental health of serving ADF members.

Middle East Area of Operations (MEAO). Australia's military involvement in Afghanistan and Iraq is often referred to as the Middle East Area of Operations. Thousands of members have deployed to the MEAO since 2001, with many completing multiple tours of duty. The Transition and Wellbeing Research Programme will build on the Military Health Outcomes Program, which detailed the prevalence of mental disorder in serving ADF members.

Military and Veteran Research Study Roll. Participants' contact details and demographic information were obtained via the creation of a study roll by the Australian Institute of Health and Welfare. This process involved integrating contact information from the following sources:

- Defence's Personnel Management Key Solution (PMKeyS) database
- DVA client databases
- National Death Index
- ComSuper member database
- Military Health Outcomes Program (MilHOP) dataset.

Military Health Outcomes Program (MilHOP). A program that investigated the prevalence of mental disorders among serving ADF members in 2010, as well as deployment-related health issues for those deployed to the Middle East Area of Operations. The Transition and Wellbeing Research Programme addresses a number of gaps identified following the MilHOP, including the mental health of Reservists, ex-serving members and ADF members in high-risk roles, as well as the trajectory of disorder and pathways to care for individuals previously identified with a mental disorder in 2010.

National Death Index (NDI). A Commonwealth database that contains records of deaths registered in Australia since 1980. Data comes from the Registry of Births, Deaths and Marriages in each jurisdiction, the National Coronial Information System and the Australian Bureau of Statistics. Before contacting participants, the Military and Veteran Research Study Roll was cross-checked against the NDI to ensure we did not attempt to approach deceased members.

National Health and Medical Research Council (NHMRC). Australia's peak funding body for medical research. The NHMRC has funded previous investigations undertaken by the Centre for Traumatic Stress Studies.

National Health Survey (NHS). The 2014–2015 National Health Survey is the most recent in a series of Australia-wide ABS health surveys, assessing various aspects of the health of Australians, including long-term health conditions, health risk factors, and health service use.

Obsessive-compulsive disorder (OCD). A disorder characterised by obsessional thoughts (ideas, images, impulses) or compulsive acts (ritualised behaviour). These thoughts and acts are often distressing and typically cannot be avoided, despite the sufferer recognising their ineffectiveness.

Optimal epidemiological cut-off. The value that brings the number of false positives (mistaken identifications of a disorder) and false negatives (missed identifications of a disorder) closest together, thereby counterbalancing these sources of error most accurately. Therefore, this cut-off would give the closest estimate to the true prevalence of a 30-day ICD-10 disorder as measured by the Composite International Diagnostic Interview and should be used to monitor disorder trends.

Optimal screening cut-off. The value that maximises the sum of the sensitivity and specificity (the proportion of those with and without a disease who are correctly classified). This cut-off can be used to identify individuals who might need further care.

Panic attack. Sudden onset of extreme fear or anxiety, often accompanied by palpitations, chest pain, choking sensations, dizziness, and sometimes feelings of unreality, fear of dying, losing control or going mad.

Panic disorder. Recurrent panic attacks that are unpredictable in nature.

Patient Health Questionnaire 9-item scale (PHQ-9). Self-reported depression was examined using the PHQ-9. The nine items of the PHQ-9 are scored from 0 to 3 and summed to give a total score of between 0 and 27. The PHQ-9 provides various levels of diagnostic severity, with higher scores indicating higher levels of depression symptoms.

Personnel Management Key Solution (PMKeyS). An integrated human resource management system that provides the ADF with a single source of personnel management information. PMKeyS manages information about the entire ADF workforce – Navy, Army and Air Force.

Posttraumatic stress disorder (PTSD). A stress reaction to an exceptionally threatening or traumatic event that would cause pervasive distress in almost anyone. Symptoms are categorised into three groups: re-experiencing memories or flashbacks, avoidance symptoms, and either hyperarousal symptoms (increased arousal and sensitivity to cues) or inability to recall important parts of the experience.

Posttraumatic Stress Disorder Checklist – civilian version (PCL-C). A 17-item self-report measure designed to assess the symptomatic criteria of PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*. The 17 questions of the PCL-C are scored from 1 to 5 and are summed to give a total symptom severity score of between 17 and 85. An additional four items from the newly released PCL-5 were also included, giving researchers flexibility to also measure PTSD symptoms according to the most recent definitional criteria.

Prevalence of mental disorders. The proportion of people in a given population who meet diagnostic criteria for any mental disorder in a given time frame. (See also ‘twelve-month prevalence’ and ‘lifetime prevalence’.)

Probable mental disorder. Where probable rates of mental disorder are presented, these are based on self-report epidemiological cut-offs.

Rank status. Three levels of rank were used in the Mental Health and Wellbeing Transition Study:

- **Commissioned Officer (OFFR):** Senior Commissioned Officers (Commander, Lieutenant Colonel, Wing Commander and above) and Commissioned Officers (Lieutenant Commander, Major, Squadron Leader and more junior ranks)
- **Non-Commissioned Officer (NCO):** Senior Non-Commissioned Officers (Petty Officer, Sergeant and more senior ranks), and Junior Non-Commissioned Officers (Leading Seaman, Corporal and more junior ranks)
- **Other Ranks:** Able Seaman, Seaman, Private, Leading Aircraftman, Aircraftman or equivalent.

Reason for discharge. The reason for transitioning out of the ADF. In the Transition and Wellbeing Research Programme, the reason for discharge was derived from responses on the self-report survey, and classified accordingly:

- **Medical discharge:** Involuntary termination of the ADF member's employment on the grounds of permanent or at least long-term unfitness to serve, or unfitness for deployment to operational (warlike) service
- **Other:** All other types of discharge, including compulsory age retirement, resignation at own request, assessed as unsuitable for further training, end of fixed-period engagement, end of initial enlistment period or return of service obligation, end of limited-tenure appointment, not offered re-engagement, accepted voluntary redundancy, compassionate grounds, and non-voluntary administrative discharge.

Service status. The ADF comprises:

- **the Royal Australian Navy:** A maritime force that contributes to regional security, supports global interests, shapes the strategic environment and protects national interests
- **the Australian Army:** The military land force, a potent, versatile and modern army that contributes to the security of Australia, protecting its interests and people
- **the Royal Australian Air Force:** Provides immediate and responsive military options across the spectrum of operations as part of a whole-of-government joint or coalition response, either from Australia or deployment overseas. The Air Force does this through its key air power roles – control of the air; precision strikes; intelligence, surveillance and responses; and air mobility – enabled by combat and operational support.

Social phobia. The marked fear or avoidance of being the centre of attention or in situations where it is possible to behave in a humiliating or embarrassing way, accompanied by anxiety symptoms, as well as either blushing, fear of vomiting, or fear of defecation or micturition.

Specific phobia. The marked fear or avoidance of a specific object or situation, such as animals, birds, insects, heights, thunder, flying, small enclosed spaces, sight of blood or injury, injections, and dentists or hospitals, and accompanied by anxiety symptoms as described under 'agoraphobia'.

Stratification. Grouping outcomes by variables of interest. In the *Mental Health Prevalence Report* (Van Hooff et al., 2018), 12-month diagnosable mental disorder and self-reported suicidality were stratified by age, sex, rank, Service, years of service in the Regular ADF, deployment status, transition status, years since transition, reason for transition, and DVA client status.

Study Roll. see Military and Veteran Research Study Roll.

Subsyndromal disorder. Characterised by or exhibiting symptoms that are not severe enough for diagnosis as a clinically recognised syndrome.

Suicidal ideation. Serious thoughts about taking one's own life.

Suicidality. Suicidal ideation (serious thoughts about taking one's own life), and suicide plans and attempts.

Transitioned ADF members. ADF members who have left military service. For the purpose of the current study, this includes all ADF members who transitioned from the Regular ADF between 2010 and 2014, including those who transitioned into the Active Reserves and Inactive Reserves.

Transitioned status. Transitioned ADF members were categorised into one of three groups, which broadly represented their level of continued association and contact with Defence and their potential access to support services provided by Defence:

- **Ex-Serving:** A person who was a Regular ADF member before 2010, has since transitioned out of the ADF and is no longer engaged with Defence in a Reservist role. The individual is classified as discharged from Defence
- **Inactive Reservist:** A person who was a Regular ADF member before 2010, but has since transitioned into an Inactive Reservist role
- **Active Reservist:** A person who was a Regular ADF member before 2010, but has since transitioned into an Active Reservist role.

Twelve-month prevalence. Meeting diagnostic criteria for a lifetime ICD-10 mental disorder and then having reported symptoms in the 12 months before the interview.

Two-phase design. A well-accepted epidemiological approach to investigating the prevalence of mental disorders. In the first phase, participants completed a screening questionnaire, which was generally economical in terms of time and resources. Based on the results of this screening and the demographic information provided, certain participants were selected for a more accurate but costly formal diagnostic interview.

Veterans' health cards. DVA, on behalf of the Australian Government, uses health cards as a convenient method for veterans, war widows/widowers and their eligible dependants to access health and other care services. Arrangements are based on providing access to clinically appropriate treatment that is evidence-based. There are Gold, White and Orange Cards.

Weighting. Allowing for the inference of results for the entire population. Weighting involved allocating a representative value or 'weight' to the data for each responder, based on key variables. The weight indicated how many individuals in the entire population were represented by each responder. Weighting was applied to:

- correct for differential non-response
- adjust for any systematic biases in the responders (for example, oversampling of high scorers for the Composite International Diagnostic Interview).

White Card. A DVA health card for specific conditions. A White Card entitles the holder to care and treatment for:

- injuries or conditions that are accepted as being caused by war or service-related
- malignant cancer, pulmonary tuberculosis, PTSD, anxiety and/or depression, whether or not it was caused by war
- symptoms of unidentifiable conditions that arise within 15 years of service (other than peacetime service).

Services covered by a White Card are the same as those for a Gold Card, but must be for treatment of conditions that are accepted as being caused by war or service-related.

World Mental Health Survey Initiative version of the World Health Organization's Composite International Diagnostic Interview. see Composite International Diagnostic Interview (CIDI).

Years of regular service. The following categories were used in the Mental Health and Wellbeing Transition Study to define the number of years of regular service: 3 months to 3.9 years, 4 to 7.9 years, 8 to 11.9 years, 12 to 15.9 years, 16 to 19.9 years and 20+ years.

Years since transition. To ascertain the number of years since transition from regular service, participants were asked to indicate what year they transitioned to Active Reserves, Inactive Reserves or were discharged out of the Service (Ex-Serving). Options included zero, one, two, three, four or five years.

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