

TRANSITION AND WELLBEING RESEARCH PROGRAMME

MENTAL HEALTH AND WELLBEING TRANSITION STUDY

Mental Health Changes Over Time: a Longitudinal Perspective



2019

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Key findings

The *Mental Health Changes Over Time: a Longitudinal Perspective Report* examines the shifts in mental health status over a five-year period (2010–2014) in those who have transitioned out of regular, full-time military service compared with those who remain in the Regular Australian Defence Force (ADF).

This report is part of the Transition and Wellbeing Research Programme (the Programme), which is the most comprehensive study undertaken in Australia on the impact of military service on the mental, physical and social health of serving and ex-serving ADF members and their families. The Programme is made up of three studies, with this report comprising part of the Mental Health and Wellbeing Transition Study. The other two studies are the Impact of Combat Study and the Family Wellbeing Study.

The primary aims of the *Mental Health Changes Over Time: a Longitudinal Perspective 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.

The study sample for this report comprises two groups: Transitioned ADF members who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) as a regular ADF member but have since transitioned, and 2015 regular ADF members who participated in the 2010 MHPWS as a regular ADF member and who remained in the ADF as a regular member in 2015.

Similar to other international military and veteran studies, the results from this report indicate that most people are in good mental health following discharge from active military service. Of those who do go on to develop problems, anxiety disorders and posttraumatic stress disorder (PTSD) were the disorder types most likely to worsen following transition. This risk was heightened if there were indications 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.

Further results are summarised in the key findings below. It is important to note that references to the 'last 12 months' is referring to the 12 months before the date of participation in the study, with all data collection having been undertaken between 1 June and 31 December 2015. Please refer to the glossary for definitions of key terms.

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.

12-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: 18.3% vs Regular ADF: 21.1%) and 2015 (Transitioned: 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 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 were 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

- 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 symptoms

- 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%), based on the Posttraumatic Stress Disorder Checklist – civilian version (PCL-C).
- 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

- Using the Alcohol Use Disorders Identification Test (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

- 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%), based on the Patient Health Questionnaire 9-item scale (PHQ-9).
- 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

- 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%), based on the Dimensions of Anger Reactions 5-item scale (DAR-5).

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.

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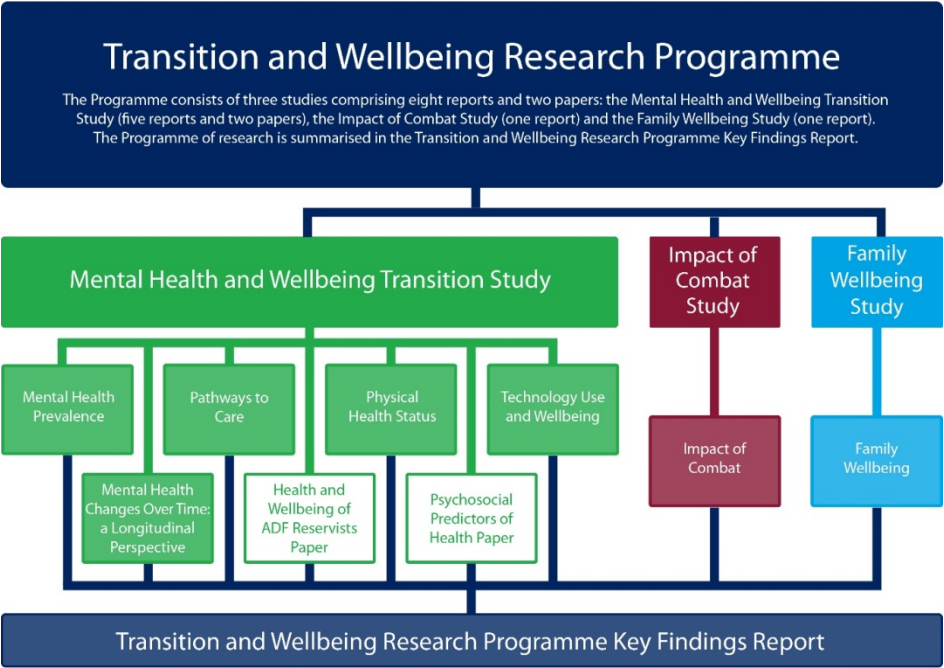
Other key organisation

Australia Post

Transition and Wellbeing Research Programme – an overview

The Transition and Wellbeing Research Programme (the Programme) (see diagram below) 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.



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 the diagram above shows. The table below shows which reports deliver on the objectives of the Programme. This report, *Mental Health Changes Over Time: a Longitudinal Perspective*, is part of the Mental Health and Wellbeing Transition Study and addresses the sixth research objective, which is to 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.

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. 2. Examine self-reported mental health status of Transitioned ADF and the 2015 Regular ADF.	<i>Mental Health Prevalence Report</i>
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 programme. 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.

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1 Introduction

1.1 Challenges for ADF members as they transition to civilian life

There are many challenges faced by military personnel as they discharge from active military service that may contribute to shifting mental health in the period of transition from active service to civilian life. The possible factors that may contribute to shifts in mental health are considered below.

1.1.1 Change of identity

Inherent in training of military personnel is developing a very strong sense of the military self – in particular, how personnel perceive themselves as part of the military culture and organisation (McGurk, Cotting, Britt & Adler, 2006; Williams et al., 2016). This training persists over the course of military service. Transition to civilian life has the potential to markedly challenge one's self-esteem and sense of self-worth. Major transitions in life often result in threats to self-esteem (Caspi & Roberts, 2001), and the centrality of the military identity as one transitions to civilian life can result in a significant reduction in self-esteem (Mobbs & Bonanno, 2018).

There is also suggestion that during the transition period veterans may manage their trauma memories in ways that are detrimental to their mental health. In general, individuals tend to organise their personal autobiographical memories in terms of major turning points or transitions in their lives (Enz & Talarico, 2016). For military personnel, this may include such pivotal transitions as entry into and transition out of the military. These autobiographical memories are closely linked to one's self-identity. One study found that Vietnam veterans with posttraumatic stress disorder (PTSD) who wore military regalia retrieved more war memories than other veterans (McNally, Lasko, Macklin & Pitman, 1995). This is consistent with the notion that these memories reinforce the sense of self as a military person. Veterans can experience a jarring of their self-identities following transition, which can result in a focus on memories that may be centred on their military past rather than on events in their civilian life. The finding that veterans who respond poorly to anniversaries of military events tend to be those who do not adjust following transition (Morgan, Kingham, Nicolaou & Southwick, 1998; Morgan, Hill, Fox, Kingham & Southwick, 1999) suggests that memorialising their military pasts can contribute to greater difficulties during transition in civilian life.

1.1.2 Social needs

Inherent in being a member of the serving military is the constant access to social networks. In contrast, the transition to civilian life is often accompanied by a

fragmentation of social networks, which can result in social isolation. One Canadian study of veterans found that 32% reported major difficulties with maintaining friendships in the civilian context (Black & Papile, 2010). This pattern can be reinforced by the lengthy absences military personnel have from their own family units and social networks, which can impede reintegration with these social networks following transition (Ray & Heaslip, 2011).

1.1.3 Cumulative effects of trauma and stress

One of the common factors that occurs during transition, and in the initial period after leaving military service, is that there is a marked increase in life stressors. Apart from the stress of losing of one's military identity, many stressors occur after transition, including loss of employment, uncertain sources of income, fragmentation of one's social network, loss of status, legal difficulties, and new domestic responsibilities (Morin, 2011). Understandably, the stress that occurs following transition has been found to predict mental and physical problems in the period after leaving the military (Interian, Kline, Janal, Glynn & Losonczy, 2014; Kline et al., 2010). There is much evidence that cumulative trauma and stress contributes to greater PTSD severity (Breslau, Davis, Andreski & Peterson, 1991), which is consistent with evidence that multiple deployments contribute to greater risk for poorer mental health outcomes (Iversen et al., 2009; Seal et al., 2009); although this pattern has not always been observed (Bonanno et al., 2012b; Fear et al., 2010).

1.1.4 Moral injury

Moral injury has been conceptualised in military contexts as 'perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations' (Litz et al., 2009). This construct is distinct from the fear reactions that typically characterise PTSD and instead include a range of emotional responses that encompass guilt, shame, anger, and blame. These experiences can be common in the aftermath of recent conflicts, including peacekeeping activities, because they can arise following unintentional killing of others, including civilians (Maguen et al., 2011), exposure to atrocities (Beckham, Feldman & Kirby, 1998), and disposing of dead bodies (Ursano & McCarroll, 1990). Importantly, moral injury is not responsive to trauma-focused cognitive behaviour therapy for PTSD, which typically reduces PTSD symptoms (Steenkamp et al., 2011).

A recent study of US military combat veterans found that 10.8% reported transgressions by self, 25.5% reported transgressions by others, and 25.5% reported betrayal by others (Wisco et al., 2017); importantly, those with moral injury were twice as likely to attempt suicide following deployment than those without. For those who are transitioning from the military, the impacts of moral injury may be heightened due to a general lack of understanding within civilian cultures of the demands of combat and the difficulties of the rules of engagement during operations. This is highlighted by

one study which found that 84% of veterans did not believe the public understood their problems (Pew Research Center, 2011).

1.1.5 Stoicism and stigma

It has been suggested that the military stereotype of toughness and stoicism may contribute to stress in the transition period (Mobbs & Bonanno, 2018). Stoicism is typically associated with suppression of emotional expression (Wagstaff & Rowledge, 1995), and unsurprisingly it has been found that stoicism can limit treatment seeking (Pinnock, O'Brien & Marshall, 1998). The *Pathways to Care Report* (Forbes et al., 2018) presented a thorough review of help-seeking patterns in the Transition and Wellbeing Research Programme cohort, and highlighted that a proportion of transitioned Australian Defence Force (ADF) members may be at risk of persistent mental health issues because of a reluctance to seek care. This may occur because of a sense of stoicism that one should cope, and stigma arising from concern of others (Clement et al., 2015; Corrigan, Watson & Barr, 2006; Britt et al., 2008; Earnshaw & Chaudoir, 2009).

Further, ex-serving veterans may internalise this view and believe that acknowledging mental health problems suggests that they are weak (Vogel, Wade & Haake, 2006). There is much evidence that military populations experience significant stigma regarding help seeking for mental health problems and that this can impact on seeking treatment following transition to civilian life (Langston, Gould & Greenberg, 2007; Vogt, 2011). Active serving and transitioned veterans also report the anticipation of stigma arising from seeking mental health assistance is a greater obstacle to accessing care than any logistical barriers (Britt et al., 2008; Iversen et al., 2011; Osório, Jones, Fertout & Greenberg, 2013).

1.1.6 Impaired help seeking

One viable reason why transitioned veterans may experience deficits in mental health is that they do not receive sufficient mental health care. This may evolve out of a learned reluctance to seek mental health assistance during service. There is overwhelming evidence from military agencies around the world, for example, that military personnel under-utilise mental health services. In the United States, less than half of the current serving personnel and veterans who could benefit from treatment report accessing relevant services (Hoge et al., 2004; Kehle et al., 2010; Ramchand, Rudavsky, Grant, Tanielian & Jaycox, 2015). In the United Kingdom, 40% of military personnel who experience mental health problems seek help (Sharp et al., 2015), and in Canada, one in four serving military personnel who require assistance had sought help in the past year (Fikretoglu, Guay, Pedlar & Brunet, 2008). Consistent with these rates, the 2010 ADF Mental Health Prevalence and Wellbeing Study found that approximately only half of those with PTSD sought help (McFarlane, Hodson, Van Hooff, Verhagen & Davies, 2011).

The reluctance to seek mental health assistance in the military may be attributed to concerns about adverse impacts on promotion, eligibility for deployment, or stigma from peers and superiors. Although most military organisations around the world do proactively offer mental health assistance, mental health care following transition often requires active help seeking by the veteran because they are no longer in the structured environment of the military. Interestingly, there may be a trend for veterans to access mental health services more frequently than has been previously reported, with a US study of 6,287 US female veterans reporting a need for mental health care (Kimerling et al., 2015), showing that 84% of those who were in need of care, accessed care. From an Australian perspective, a study of Australian peacekeepers (Hawthorne, Korn & Creamer, 2014) found that 83% of peacekeepers with a mental health condition had seen a clinician or a therapist for their mental health concern in the previous three months.

1.2 Background to this report

The current report specifically examines the longitudinal course of mental health across time in a cohort of ADF members who participated in the Military Health Outcomes Program's 2010 ADF Mental Health Prevalence and Wellbeing Study. The findings of this report should be considered in the context of prior Australian and international reports on mental health in both military and veteran populations, as well as previous reports from the Transition and Wellbeing Research Programme. A brief summary of relevant research into mental health in military and veteran populations is provided in Annex B. It is worth noting that these prior studies indicate that:

- there is convergent evidence in Australia and overseas of poorer mental health in veterans relative to active serving defence personnel
- despite this pattern, most defence personnel transition to civilian life with success and display no indications of poor mental health
- the psychological difficulties displayed by a significant minority of veterans is often understood in the context of challenges that veterans face in the aftermath of transition, including changes in identity, employment, social networks, family roles, responsibilities, and financial security.

1.2.1 Mental health in military populations

When considering the impacts of military service on the mental health of ADF members, we also need to understand more broadly the mental health profile of military populations. The 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) found that 22% of the surveyed sample of currently serving ADF members met criteria for a mental disorder in the previous 12 months (McFarlane et al., 2011).

Younger personnel in particular (aged 18 to 37 years) had greater rates of anxiety and depression than their age-matched counterparts in the Australian community. Overall, this study also found that members of the ADF were more likely to be exposed to traumatic and stressful life events (e.g. severe accidents) than civilians (Van Hooff et al., 2012). Three important points emerged from the MHPWS that are also of relevance for the current report. First, there are significant rates of mental disorder and psychological symptoms in the ADF. Second, individuals who have served in the ADF are more likely to suffer cumulative effects of trauma exposure. Third, these cumulative effects in turn promote greater risk of mental disorder (Del Gaizo, Elhai & Weaver, 2011; Karam et al., 2014).

The mental disorder and symptom profiles identified in the MHPWS also need to be considered in the context of the differential patterns of disorder and symptoms identified across age bands. For example, in the 28–37 age band, 28.3% of ADF males had an affective disorder compared to 6.4% of the general population (McFarlane et al., 2011). In contrast, this difference was markedly smaller in the 38–47 age band, where 7.1% of ADF males had an affective disorder compared to 5.1% in the general population. Explaining these age effects requires consideration of the possibility that individuals who remain in the ADF are likely to be those who are resilient and who have completed the earlier years of military service without developing significant symptoms; this interpretation is supported by the finding that the decline in affective disorders with age is significantly greater in the ADF than in the general community (Slade, Johnston, Oakley Browne, Andrews & Whiteford, 2009). The converse of this ‘healthy warrior’ effect may then be seen in those who transition out of the military, as it is probable that a proportion of personnel leave the ADF because of poor mental health, thereby potentially contributing to greater rates of mental health problems in transitioned ADF members. In the ADF, approximately 10% (n = 5,000) of serving men and women will discharge out of regular ADF service or transition into Reserves each year. During the five-year period 2010–2014, an estimated 25,000 ADF members discharged or transitioned into Reserves from regular ADF service. This represents a significant number of ex-serving military men and women who are in the critical early stages of transitioning to civilian life and reintegrating into their community.

1.2.2 ‘Healthy worker effect’

Interpretation of increased mental health problems in veteran populations relative to active serving military cohorts needs to take into account that the rate of problems may be influenced by a number of self-selective factors that can define veteran and active serving populations. One of the most important examples of this is the *healthy worker effect*, whereby members remaining in service are likely to be healthier because their good health permits them to maintain their activities and roles within the military environment. Following on from this, it is logical that those members with fewer years of service may well have poorer mental health outcomes, largely due to

the impact that mental health symptoms can have on their inability to manage their roles, which consequently leads to their transition from service. Evidence from the United Kingdom supports this notion, with several studies now pointing to early service leavers (generally defined as those who leave before completing their minimum 3 to 4.5 years of service) and those who leave at short notice with little time to plan the transition to civilian life (that is, those whose military career was cut short due to redundancy, or medical or disciplinary discharge) being at particular risk (Buckman et al., 2013; King's Centre for Military Health Research, 2010; van Staden et al., 2007). Similarly, whether the transition process is perceived as a positive or negative life event can also significantly impact mental health outcomes (van Staden et al., 2007). One inference from this interpretation is that any observed increased mental health problems in veterans may not necessarily be attributed to transition factors but rather may also reflect difficulties that existed prior to transition and contributed to leaving the military.

1.3 Summary of the Mental Health and Wellbeing Transition Study *Mental Health Prevalence Report*

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% of the Transitioned ADF 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 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 current report examines the issue of symptom and disorder emergence over time by examining the longitudinal mental symptom and disorder course among a cohort of ADF members who were currently serving in 2010, and who may or may not have transitioned in the intervening period before their participation in the Transition and Wellbeing Research Programme.

1.4 Summary of the Mental Health and Wellbeing Transition Study *Pathways to Care Report*

The Mental Health and Wellbeing Transition Study *Pathways to Care Report* (Forbes et al., 2018) focused on patterns of self-reported help seeking among transitioned and Regular serving 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 et al., 2009), and consistent with the high rates reported in the 2010 MHPWS (McFarlane et al., 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 PTSD, which has been shown to be more common in military populations. The current report will allow for the high-level examination of changes in symptom and disorder status over time in a cohort of currently and recently regular serving ADF members.

1.5 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 their time 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 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.

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. The current report first investigates the patterns of changing mental health status over time, and importantly, how the mental health of personnel improved, worsened, or remained stable. The following section outlines what is known to date about the longitudinal nature of

posttraumatic mental health, with specific focus on the longitudinal course of mental health in military and veteran contexts.

1.5.1 The longitudinal nature of posttraumatic mental health

To provide further context for this report, in particular the documenting of change in mental health status over time, it is useful to understand the course of posttraumatic mental health. In recent years, there has been considerable research undertaken on how the incidence of posttraumatic stress disorder (PTSD) changes over time. Much of this work has been conducted in the acute post-trauma phase, and has subsequently tracked rates of PTSD over the following years. Although the traditional view was that PTSD responses typically abated over time (Bryant, 2003), more controlled and longer-term studies have shown that while PTSD rates in a given population tend to be somewhat consistent over time, *individuals* actually fluctuate markedly over time in terms of their PTSD symptoms. For example, a landmark study of civilians in Australia assessed trauma survivors within days of the event, and again at 3, 12, and 24 months (Bryant, O'Donnell, Creamer, McFarlane & Silove, 2013). This study found that although the rates of PTSD remained reasonably stable, people tended to change in terms of their PTSD status considerably over time. Specifically, approximately half of those individuals with PTSD at one assessment did not have it at the next assessment, with these individuals 'migrating' to either subsyndromal or no PTSD status. Similar proportions of the sample then worsened at the subsequent assessment by moving from subsyndromal to full PTSD, or no PTSD to either subsyndromal or full PTSD. Moreover, this fluctuation appears to be driven strongly by the number of current stressors that the individual was experiencing in the period since the traumatic event (Bryant et al., 2017). Two points emerge from the longitudinal research of trauma responses in civilian contexts: (a) mental health status is dynamic and fluid across time, and (b) ongoing stressors play a major role in shaping one's current mental health.

1.5.2 The role of subsyndromal disorder

Subsyndromal PTSD is a significant risk factor for the recurrence of a full-blown PTSD (Smid, Mooren, van der Mast, Gersons & Kleber, 2009). Subsyndromal PTSD is associated with significant health-related difficulties (Pietrzak, Goldstein, Malley, Johnson & Southwick, 2009) and impairment (Stein, Walker, Hazen & Forde, 1997), and predicts subsequent PTSD (O'Donnell, 2013) and suicidal risk (Marshall et al., 2001). These findings highlight the importance of early identification of such symptoms due to the opportunity and potential to intervene and limit worsening of these states to full-blown disorder.

In the context of military and emergency service personnel, it has especially been recognised that subsyndromal symptoms represent a significant risk in terms of impairment. In this setting, these symptoms represent an important focus for clinical intervention despite not satisfying the full diagnostic criteria (Kornfield, Klaus, McKay,

Helstrom & Oslin, 2012). Reflecting this pattern, one study of police officers four years after the 11 September 2001 attacks in the United States found that 5.4% had full-blown PTSD and 15.4% had subsyndromal PTSD; importantly, there were significant associations with alcohol abuse and somatic symptoms in both the full PTSD and subsyndromal groups (Pietrzak et al., 2012). This paper concluded that it was important to have a dimensional perspective of PTSD ‘particularly in professions such as police, as operational definitions and conventional screening cut-points may underestimate the psychological burden for this population’. The relationship between subsyndromal PTSD and pain is also an issue that has been highlighted in the literature (Jenewein, Wittmann, Moergeli, Creutzig & Schnyder, 2009). There is further evidence that presence of key symptoms following trauma exposure can subsequently lead to PTSD. For example, one study of police officers found that development of nightmares is prodromal to subsequent PTSD (Neylan et al., 2002).

The importance of screening programs was further highlighted for military populations in this regard, in the 2010 MHPWS, which found that increasing exposure to trauma was associated with subsyndromal symptoms (McFarlane et al., 2011). This indicated that individuals with subsyndromal symptoms appear to be at risk of further symptom exacerbation with further exposures. These findings particularly underscore the importance of the early identification of a pattern of progressive increasing symptomatology. The linear relationship between the numbers of traumas an individual has been exposed to and the onset of PTSD symptoms has also been found in other samples (Del Gaizo et al., 2011). This literature highlights the importance of mapping the course of symptoms within individuals across time, with any screening program ideally performed by the same assessor. At a minimum, there should be a review of any prior assessments so as to map the progressive longitudinal trajectory of an individual’s symptoms or distress.

1.5.3 The longitudinal course of mental health in military and veteran populations

There has been much longitudinal research over the past decade on military samples, particularly those deployed to the Middle East. These studies have primarily focused on active serving military personnel and have adopted one of two designs: (a) assessing characteristics prior to deployment and determining mental health outcomes after deployment, or (b) assessing experiences during deployment and assessing mental health outcomes after returning from their deployment. Importantly, these studies have focused on active serving military personnel rather than considering the longitudinal course of mental health from active service through to civilian life.

1.5.4 Long-term reactions

Several longitudinal studies have focused on military cohorts that have been assessed over decades after deployment to war zones. The findings of these studies have been mixed, which is likely attributable to changing methodological approaches and

measurement tools as time has elapsed. One early study of Second World War veterans found that stress reactions increased over a 20-year period following combat exposure (Archibald & Tuddenham, 1965). An Israeli study of personnel who served during the 1973 Yom Kippur War also found an increase in PTSD rates over a 20-year period (Solomon, 1993). Another study reported a decline in rates of PTSD over a 14-year period in Vietnam era veterans (Koenen, Stellman, Stellman & Sommer, 2003).

The major mental health study of US troops deployed to Vietnam was the National Vietnam Veterans Readjustment Study, which was conducted 10 years after the war ended (Kulka et al., 1990). At that time, it was reported that 15.2% of men and 8.5% of women met criteria for current PTSD. A recent 25-year follow-up of this cohort (Marmar et al., 2015) broadly supported the proposal that PTSD diagnosis and symptoms fluctuate substantially over time. The rates of PTSD for men and women were substantially lower at the 25-year follow-up, at 4.5% and 6.1%, respectively; however, it is worth noting that a different definition of PTSD was used for this study (the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5)), which is markedly different from the one used in the initial study. Interestingly, 10.8% – while not meeting full criteria – met at least subsyndromal levels of PTSD. Importantly, 16.0% of veterans reported an increase of more than 20 points on the Mississippi Scale for Combat-Related PTSD, and 7.6% reported a decrease of more than 20 points. The predictors of current PTSD that were identified included poor social support and increased stressors in the past year (Steenkamp et al., 2017). This underscores the enormous fluctuations that occurred with many veterans over this time. Although the overall rates of PTSD tend to reduce over the decades following deployment, for a significant proportion of personnel mental health problems appear to increase. This conclusion is further supported by longitudinal evidence that older male veterans who initially display PTSD report poorer mental health as they transition to retirement (Schnurr, Lunney, Sengupta & Spiro, 2005).

1.5.5 Intermediate reactions to deployment

A limitation of longitudinal studies of Vietnam and other cohorts that have been followed up decades after deployment is that they do not shed light on more immediate effects as time elapses in the months and years after deployment or combat exposure. In the wake of recent wars in Iraq and Afghanistan, a range of studies have focused on the course of mental health in these contexts. This review now summarises lessons from these studies.

Few studies have assessed longitudinal changes in mental health status in military personnel in more intermediate time frames after deployment. Consistent with studies of long-term follow-up, there is evidence that rates of PTSD in deployed personnel can increase in the post-deployment period. For example, one study of US personnel found an increase of 14.2% in PTSD rates in the period between post-deployment and one-

year follow-up (Vasterling et al., 2016). Relevant to this report, PTSD symptoms increased in ex-serving veterans more than active duty military personnel. This accords with a Dutch study that reported a marked increase in PTSD symptoms between post-deployment and five-year follow-up (Eekhout, Reijnen, Vermetten & Geuze, 2016). Another study that tracked PTSD symptoms in military personnel in primary care settings found that the majority of those with PTSD continued to have PTSD 12 months later (Bray et al., 2016).

The Millennium Cohort Study, which assessed a population-based representative sample of 8,178 US military personnel, included assessments at baseline, and again every three years for a total 10-year follow-up period (Bonanno et al., 2012b; Donoho, Bonanno, Porter, Kearney & Powell, 2017). This study used latent growth mixture modelling, which is a statistical approach that focuses on levels of PTSD severity, rather than diagnostic categories, and models classes of people who fall into distant trajectories over time. This approach, which requires multiple assessments, allows a more robust assessment of long-term adjustment. The key findings to emerge from this study were (a) that PTSD severity increased in a proportion of personnel following initial deployment, (b) that PTSD severity increased in a proportion of personnel at least three years after their initial deployment, and (c) that PTSD severity increased in a proportion of personnel at least six years after initial deployment. Importantly, those personnel who showed increased PTSD severity over time tended to display some PTSD symptoms initially. It is also worth noting that when other factors were controlled for, there was no difference in the course of PTSD over time between men and women (Jacobson, Donoho, Crum-Cianflone & Maguen, 2015). These patterns reinforce previous reports that PTSD is a fluctuating condition, and that it can increase over time in those who initially displayed some degree of PTSD symptoms.

A very consistent finding across all longitudinal studies that have used latent growth mixture modelling is that most military personnel who are deployed are resilient and consistently show good mental health over time (Berntsen et al., 2012; Bonanno et al., 2012b; Donoho et al., 2017; Isaacs et al., 2017). 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). When combat exposure is controlled for, resilient personnel tend to show initial PTSD symptoms in the immediate aftermath of deployment, but thereafter show consistently low symptomatology (Boasso, Steenkamp, Nash, Larson & Litz, 2015).

Longitudinal studies have also been conducted on suicidal risk in the military. Suicide attempts in military agencies have increased over the past decade, and so considerable attention has been given to the course and risk for suicidality (Schoenbaum et al., 2014). These studies indicate that females, personnel at early stages of their careers,

and non-deployed personnel are at increased risk (Ursano et al., 2015). Moreover, longitudinal work suggests that among those with at least one prior deployment, risk for suicide attempts was higher in those with either PTSD or depression after return from deployment, particularly at the six-month post-deployment mark (Ursano et al., 2016).

1.5.6 Lessons from delayed-onset PTSD

There are relevant lessons to learn about the course of mental health responses in military populations from studies of delayed-onset PTSD. This form of PTSD is defined by DSM-5 as PTSD that meets criteria for the disorder after a delay of at least six months following exposure to a traumatic event. Although this form of PTSD was initially conceptualised as occurring after a period of six months in which the trauma survivor was ‘symptom-free’, more recent conceptualisations have converged on the view that trauma survivors may have a degree of symptoms but they worsen over time to the point that the person eventually meets full criteria for PTSD. It is for this reason that DSM-5 clarified that delayed-onset PTSD referred to cases in which the condition worsened over time to eventually meet criteria for the disorder (Friedman, Resick, Bryant & Brewin, 2011a).

Numerous longitudinal studies have been conducted that have mapped the course of PTSD reactions and determined the rates of delayed-onset PTSD. Interestingly, delayed-onset PTSD appears to occur more often in military than civilian populations. For example, one systematic review of 19 studies of trauma survivor cohorts found that delayed-onset PTSD accounted for 38.2% and 15.3%, respectively, of military and civilian cases of PTSD (Andrews, Brewin, Philpott & Stewart, 2007). Notably, all participants who reported delayed-onset PTSD had symptoms in the acute phase, indicating that their conditions worsened over time. In terms of the time frames in which this worsening occurred in military samples, it was observed in cohort studies that assessed veterans at six months (Helzer, Robins & McEvoy, 1987; Prigerson, Maciejewski & Rosenheck, 2001), 1 to 2 years (Solomon & Mikulincer, 2006; Southwick, Morgan, Darnell & Bremner, 1995), and 5 years (Op den Velde et al., 1996).

These convergent studies indicate that there is a sizable proportion of people with PTSD who develop worsening symptoms over time, and it appears this is a more common pattern in military/veteran populations than civilian populations. Importantly, there is evidence that veterans who develop delayed-onset PTSD display more depressive symptoms and alcohol abuse in the period before they develop PTSD than those who develop immediate PTSD; further, veterans with delayed-onset PTSD experience more life stressors in the year prior to developing PTSD (Andrews, Brewin, Stewart, Philpott & Hejdenberg, 2009).

1.5.7 The role of sensitisation

There are well-established neurobiological models that can explain the observed increase in mental health problems in populations, such as veterans, who have experienced cumulative trauma. Sensitisation models propose that once someone has been severely stressed by a traumatic event, a predisposition subsequently exists to have an excessive response to less severe stressful stimuli that occur subsequently. This occurs because neural circuitry, and in particular the limbic system, is sensitised following the initial traumatic experience (Post, Weiss & Smith, 1995). This pattern has been observed across much fundamental research with both animals and humans who have been exposed to a prior stressful aversive event (Stam, 2007a; Stam, 2007b).

Supporting this model is evidence that previous traumatic events are linked to greater reactivity to subsequent stressors (Breslau et al., 1991; King, King, Foy & Gudanowski, 1996). Moreover, one of the major predictors of subsequent worsening of PTSD severity is the frequency of post-trauma stressors (Boscarino & Adams, 2009; Horesh, Solomon, Keinan & Ein-Dor, 2013; Smid et al., 2012). It has also been observed that trauma survivors who subsequently develop PTSD do not display elevated startle responses immediately after the traumatic event but do so in the following months (Griffin, 2008; Shalev et al., 2000). This pattern suggests there is a progressive neural sensitisation following exposure to a traumatic event that can contribute to PTSD.

In the context of military personnel, this theory has been demonstrated in a longitudinal study of Dutch military personnel, who were assessed prior to deployment, and again at 2, 7, 14, and 26 months after deployment (Smid, Kleber, Rademaker, van Zuiden & Vermetten, 2013). This study found that military personnel who were highly exposed to combat stress during deployment responded more strongly to post-deployment stressors in the year after deployment; this pattern was not found in those with low levels of combat stress. These findings are consistent with sensitisation models. Considering the frequency of increased stress that occurs in the post-trauma period, including the stressors experienced by military personnel as they transition from military service to civilian life, trauma survivors may experience a poor trajectory of mental health as a result of the combined effects of the initial traumatic experiences and the subsequent susceptibility to ongoing stressors (McFarlane, 2010).

1.5.8 Impact of cumulative stress exposure

When discussing cumulative stress exposure, it is relevant to consider the literature on first responders because, although they have distinct organisational cultures, career paths, deployment cycles, and rates of trauma exposure, they also have many commonalities with military personnel. Specifically, it can be argued that over the course of many years, first responders (including police, firefighters, and paramedics) can be repeatedly exposed to more traumatic events than many military personnel.

Accordingly, it is worth considering these populations in regard to the effects of cumulative exposure to trauma and stress.

A meta-analysis of studies of PTSD in first responders indicates that the rates of PTSD across studies is approximately 10%, which is markedly higher than observed in the general population (Berger et al., 2012). One reason commonly offered for the elevated rates of PTSD in these populations is the cumulative trauma exposure experienced by them (Neria, DiGrande & Adams, 2011). Supporting this proposal is evidence that the number of distressing missions attended by firefighters predicts PTSD severity (Wagner, Heinrichs & Ehler, 1998), and mood and alcohol use disorders (Kaufmann, Rutkow, Spira & Mojtabai, 2013).

Despite the considerable attention given to active duty first responders, there is less attention given to retired personnel. There is evidence of heightened levels of depression and PTSD in retired firefighters (Chiu et al., 2011; Chiu et al., 2010). In studies of first responders after the 11 September 2001 attacks in the United States, PTSD increased to 19.5% about six years after the attacks (Brackbill et al., 2009). In a study directly relevant to the Australian context, a comparison of mental health outcomes in active duty and retired firefighters found that retired firefighters had significantly higher rates of PTSD (17.9% vs 7.7%), depression (18.1% vs 4.9%), and heavy drinking (7.2% vs 4.1%) than active duty firefighters (Harvey et al., 2016). Moreover, the more firefighters had been exposed to severe traumatic events (e.g. fatal accidents), the greater the likelihood they developed PTSD, depression, and heavy drinking. This study highlighted that among firefighters, retirement is associated with greater mental health problems, and these are linked to greater trauma exposure. That is, it is difficult to disentangle the relative contributions of cumulative trauma exposure and retirement that may contribute to increased rates of psychological problems.

In terms of suicidal risk, there is considerable evidence that first responders are at greater risk for suicidality than the general population, despite the fact that the strict screening that occurs during recruitment of these personnel should result in lower suicidal risk. One meta-analysis of 63 different studies found strong evidence for increased suicidal risk across emergency service personnel (Stanley, Hom & Joiner, 2016). Across a number of studies, there is evidence that risk for suicide increases as a result of PTSD (Maia et al., 2007; Steyn, Vawda, Wyatt & Williams, 2013) and the cumulative effects of ongoing stress, organisational dissatisfaction, and legal difficulties (Berg, Hem, Lau, Loeb & Ekeberg, 2003; O'Hara, Violanti, Levenson & Clark, 2013). Relevant to the current report is some evidence that first responders may be more at risk of suicide during periods of career transition; specifically, the repeated finding that suicide risk is higher among those of lower rank, fewer years of service, and those in a volunteer role may suggest that suicide risk is heightened when personnel transition in

their role, particularly when they are not in a structured organisational (i.e. professional) setting (O'Hara et al., 2013; Stanley, Hom, Hagan & Joiner, 2015).

1.6 Aims, definitions, structure and scope

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. It is only through this understanding that targeted policy and programs can be developed to meet the needs of individuals in each stage of their military career.

The Military Health Outcomes Program (MilHOP) studies provided valuable information for developing policy and programs within DVA and the Department of Defence (Defence). For example, the finding that non-operational service can involve significant risk to ADF members led to new Defence policy initiatives to increase access to mental health services for *all* ADF members. Within DVA, the eligibility criteria for members and families to access the Veterans and Veterans Families Counselling Service was expanded to include more types of non-operational service; for example, border protection, training accidents and disaster relief. Further, members with more than three years of peacetime service became eligible to access health care for PTSD, depression, anxiety and substance use disorders without the need to submit a claim. Importantly, the MilHOP studies provided a framework for future research, which has been a significant driver for this Programme.

The Mental Health and Wellbeing Transition Study aimed to examine the prevalence of mental disorders and self-reported mental health and wellbeing in the first five years after transition, as this is a critical period to target for early intervention. Importantly, an understanding of the difference between mental health and wellbeing in those currently serving, those who have transitioned to the Reserves and those discharged and in the community is needed to start examining protective and risk factors in the Australian context. The current study builds on the findings from the earlier reports of the Transition and Wellbeing Research Programme, addressing the issue of the longitudinal course of mental health in contemporary Australian Defence Force members, including as they transition from regular service to civilian life.

1.6.1 Aims of this report

The primary aims of this report are to:

- examine the longitudinal course of mental disorder and symptoms among a cohort of ADF members who previously participated in the MilHOP

- explore a range of potential demographic, service-related and transition-related predictors of the course of mental health outcomes between active service and transition.

1.6.2 Structure of this report

This 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 between 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 2015 mental health status. Finally, these findings are discussed in terms of current knowledge about the course of mental health, and possible implications for the ADF and DVA in planning mental health strategies for the future.

1.6.3 Defining transition from regular military service

The Transition and Wellbeing Research Programme targeted transition across a five-year time frame (January 2010 to December 2014), commencing *after* military members left full-time Regular ADF service. In Australia, when an ADF member leaves full-time regular service, they are either discharged completely (if they are involuntarily discharged; that is, on medical or administrative grounds) or they transfer into the Active or Inactive Reserves. Therefore, the term ‘Transitioned ADF’ is used to denote all regular service leavers, including Ex-Serving ADF members and Active (minimum requirement of 20 days’ service per year and ongoing training) and Inactive/Standby Reserves (no minimum requirement and no training obligation). As such, Active Reservists are generally those most engaged with Defence, and ex-serving members are least engaged, so the impact of this level of continued engagement will also be examined.

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 (ORs): 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. 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. CIDs were 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.

2 Methodology

Chapter 2 outlines the methodology for this report. For the full methodology, including a comprehensive description of all measures used in the survey, refer to Annex A.

2.1 Study design

In phase 1 of the Mental Health and Wellbeing Transition Study, 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 questionnaire version that was relevant to their current ADF status – Transitioned ADF, 2015 Regular ADF or Ab initio Reservist – and regarding demographics, 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 (CIDI) (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).

This instrument was chosen because it is widely used in epidemiological surveys worldwide and is fully structured. The Hunter Research Foundation conducted the interviews. All interviewers were trained in the computer-assisted personal interview version of CIDI and had experience working with veterans. Further details of the self-report survey measures and the 12-month and lifetime ICD-10 mental disorders examined using the CIDI are provided in Section 2.5.

2.2 Samples

The current report utilises one of the Programme's six overlapping samples (a detailed description of all six samples used in the broader Transition and Wellbeing Research Programme can be viewed in Annex A).

2.2.1 Sample 6: MHPWS sample

This longitudinal cohort comprised all individuals who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) component of the Military Health Outcomes Program (MilHOP). 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.

This sample comprises 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.

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, were included in the longitudinal cohort for the current report.

DVA and Defence have commissioned several reports from the research Programme, and Table A.1 in Annex A presents the samples that each report covers. All samples were drawn from the Military and Veteran Research Study Roll, which is described in subsection A.11.2 of Annex A.

Data for all samples was taken from the Military and Veteran Research Study Roll, generated for the Programme and held at the Australian Institute of Health and Welfare (AIHW). The Study Roll was generated from members' data from Defence, contact data from DVA and contact details from ComSuper, and cross-referenced against the National Death Index. For all individuals in the Transitioned ADF and the 2015 Regular ADF, basic demographic characteristics to be used in weighting were held by the AIHW until the end of the data collection. These data were then provided to researchers in either identified or de-identified form, depending on participation and consent status.

2.2.2 2015 Transition and Wellbeing Research Programme survey eligibility

A total of 20,908 individuals who participated in the 2010 MHPWS component of the Military Health Outcomes Program 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 and have remained a Regular ADF member (MHPWS 2015 Regular ADF).

2.2.3 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 was 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.

Stratification procedure

Selection procedure 1: self-report measures

The 60th and 80th percentiles of the PCL-C and AUDIT distributions from the previous surveys were used as cut-offs for each measure to form three bands to stratify the sample for subsequent interview. The 80th percentile was suitable as a cut-off for 'high scorers' as it was deemed a conservative diagnostic boundary for the detection of caseness. The 60th percentile was chosen as a secondary cut-off to represent those who displayed significant symptoms in their responses to the phase 1 questionnaire and thus could include a number of 'false negatives', specifically, individuals with mental health problems who would have otherwise been missed by the 80th percentile cut-offs. The lowest scorers (Band 1) were individuals who had a lower probability of false negative diagnoses. The specific scores on the PCL-C and AUDIT represented within each of these bands are as follows:

- Band 3: PCL-C > 33 or AUDIT > 10
- Band 2: (25 < PCL-C ≤ 33 and AUDIT ≤ 10) or (PCL-C ≤ 33 and 7 < AUDIT ≤ 10)
- Band 1: PCL-C ≤ 25 and AUDIT ≤ 7.

To ensure that high scorers on the Kessler Psychological Distress 10-item scale (K10) were not being excluded by this stratification process, possibly creating a systematic underestimate of the prevalence estimates of mental disorders, the distribution of high K10 scores (above 25) was compared for those participants who were selected for interview and those not selected. A very small proportion of high K10 scorers were not selected. Hence, the decision to use the PCL-C and AUDIT to select the phase 1 respondents for interview did not create any substantial error by consistently missing individuals with a diagnosable mental disorder.

Selection procedure 2: demographic characteristics

In addition to the PCL-C and AUDIT, sex and Service were used to select participants in phase 2. This step was taken because of the greater number of males and Army personnel in the ADF. Females were oversampled to ensure sufficient numbers from each Service.

In total, 3,688 of the 16,184 eligible participants were selected to be offered an interview in 2010.

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. The following eligibility criteria applied:

1. They were a currently serving, Regular ADF member.
2. They were a participant in the 2010 ADF Mental Health Prevalence and Wellbeing Study or the Middle East Area of Operations Census Study and either:
 - (a) they completed and scored highly on *any* of the following self-report measures:
 - K10 (a score of 30 or greater, indicating very high psychological distress)
 - PCL-C (a score of 50 or greater, indicating very high risk)
 - AUDIT (a score of 20 or greater, indicating Zone IV risk)

- (b) they responded 'yes' to any of the suicide questions (including the Patient Health Questionnaire 9-item scale (PHQ-9) question related to suicidal ideation and self-harm).
- 3. They completed their survey before 31 January 2011.
- 4. They provided consent to being contacted to do a telephone interview about their health and wellbeing.

At the commencement of the CIDI duty of care protocol in September 2010, interviews were prioritised as follows:

- 1. Recent responders with suicidal ideation.
- 2. Current high K10, PCL-C and AUDIT scorers (who had completed the questionnaire in the last month).
- 3. Current high K10, PCL-C and AUDIT scorers (those completing the questionnaire between 1 month and 2 months ago).
- 4. Past survey completers who had indicated suicidal ideation.
- 5. Past high scorers on K10, PCL-C or AUDIT.

2.3 Response rates

2.3.1 Survey responders

Figure 2.1 and Table 2.1 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.

The MHPWS sample consisted of 54,009, of which 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 Programme. 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 2.1 also presents the unweighted demographic characteristics of Transitioned ADF and 2015 Regular ADF survey respondents.

Figure 2.1 Survey response rates for Transitioned ADF and 2015 Regular ADF

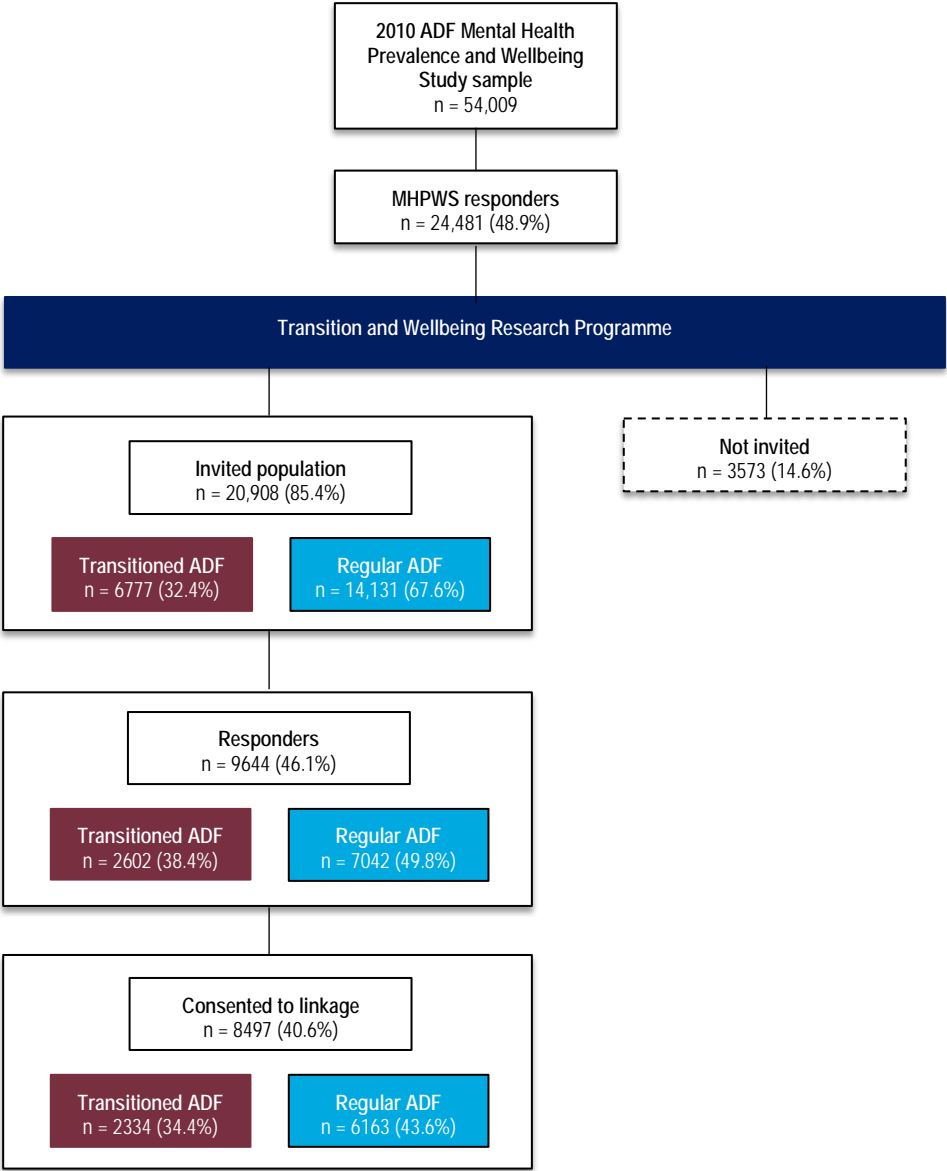


Table 2.1 Unweighted demographic characteristics and survey response rates for Transitioned ADF and 2015 Regular ADF

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%).

The characteristics of survey respondents were as follows:

Age – 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. 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 were similar.

Service – 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 Services had similar response rates. Responders very closely reflected the invited population.

Sex – 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%).

Rank – 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.

Medical fitness – Not surprisingly, Transitioned ADF were more likely to be unfit on transition from Regular ADF (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. Responders very closely reflected the invited population.

2.3.2 CIDI responders

Figure 2.2 and Table 2.2 show the total populations for the Transitioned ADF and the 2015 Regular ADF, the number from each population who were invited to participate in a CIDI, and the proportion of those invited who responded.

The sample selected for an MHPWS CIDI consisted of 4,565 participants, of which 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 2.2 also presents the unweighted demographic characteristics of Transitioned ADF and 2015 Regular ADF CIDI responders.

Figure 2.2 CIDI response rates for Transitioned ADF and 2015 Regular ADF

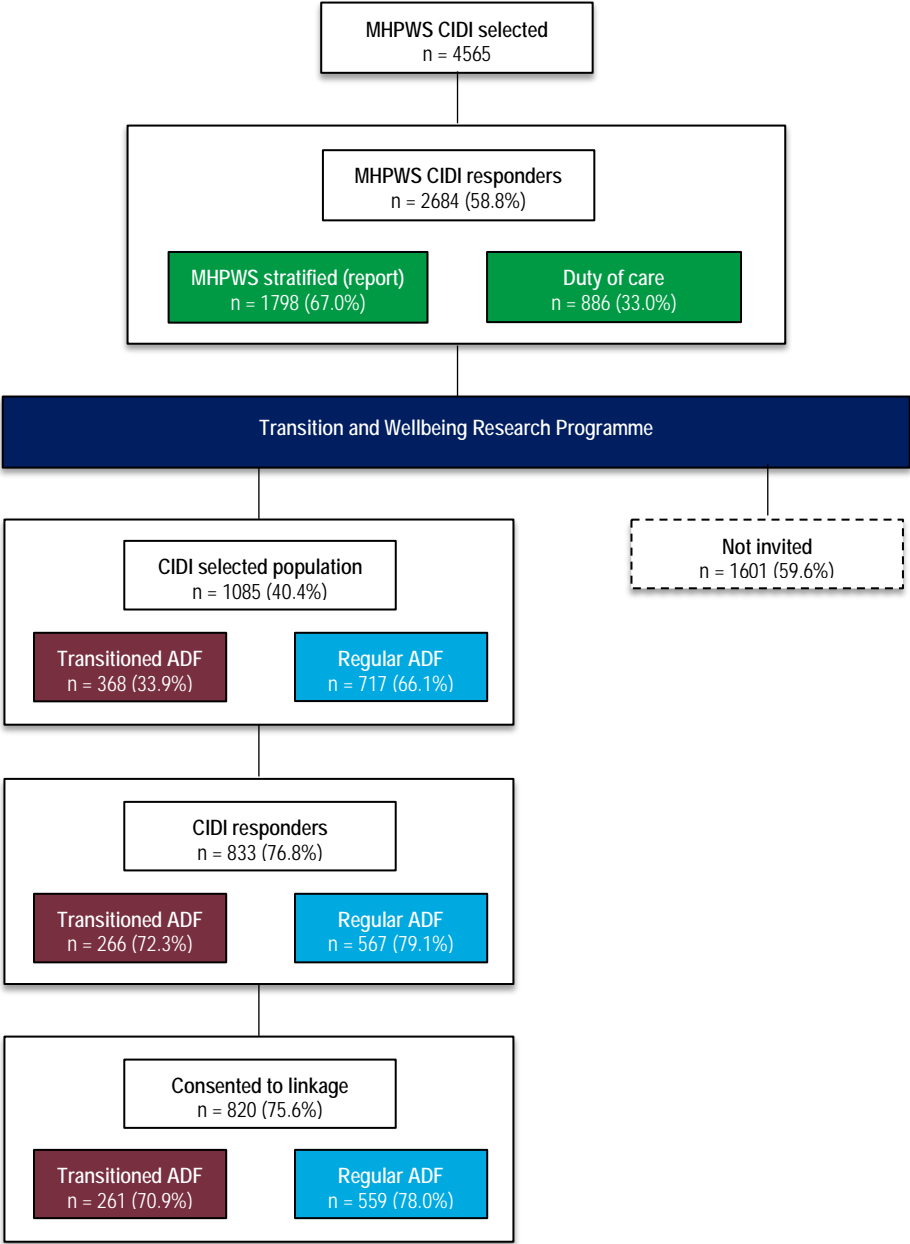


Table 2.2 Unweighted demographic characteristics and CIDI response rates for Transitioned ADF and 2015 Regular ADF

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	–#	–	57.1	5	0.7	–#	–	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 size too small to be reported.

Notes

Unweighted data.

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

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

The characteristics of CIDI respondents were as follows:

Age – Response rates 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 were similar.

Service – 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 survey 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 Services had similar response rates. CIDI responders closely reflected the invited population.

Sex – 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%).

Rank – 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.

Medical fitness – 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.

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 Transition and Wellbeing Research 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.

Depressive symptoms

Self-reported depression was examined using the Patient Health Questionnaire 9-item scale (PHQ-9) (Kroenke, Spitzer & Williams, 2001). 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.

Psychological distress

The Kessler Psychological Distress 10-item scale (K10) (Kessler et al., 2002) is a short 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, and were used to identify levels of psychological distress in the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Posttraumatic stress disorder

The Posttraumatic Stress Disorder Checklist – civilian version (PCL-C) (Weathers, Litz, Herman, Huska & Keane, 1993) is 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.

Alcohol consumption and problem drinking

Alcohol consumption and problem drinking were examined using the Alcohol Use Disorders Identification Test (AUDIT) (Saunders, Aasland, Babor, de la Fuente & Grant, 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 an instrument that is widely used in epidemiological and clinical practice for defining at-risk patterns of drinking (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). Currently, the recommended World Health Organization risk categories are utilised with ADF populations and are also therefore the scoring categories utilised in this study. This process identifies four bands of risk: Band 1 (scores of 0–7) represents those who would benefit from alcohol education; Band 2 (8–15) represents those who are likely to require simple advice; Band 3 (scores of 16–19) are those where counselling and continued monitoring is recommended; and Band 4 (scores of 20–40) requires diagnostic evaluation and treatment, including counselling and monitoring (Babor, de la Fuente, Saunders & Grant, 1989; Babor et al., 2001).

Twelve-month suicidal ideation and behaviour

Twelve-month suicidal ideation and behaviour was assessed via four items that looked specifically at suicidal thoughts, plans and attempts. Three of the items in this section were adapted from the National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2008), and the final item was devised by researchers for use in the current study.

Anger symptoms

The Dimensions of Anger Reactions 5-item scale (DAR-5) (Forbes et al., 2004) assesses anger frequency, intensity, duration, and anger's perceived negative impact on social relationships, as rated over the past four weeks. Respondents were instructed to rate the amount of time they had experienced each of the five symptoms of anger over the last four weeks on a 5-point scale ranging from 1 ('none of the time') to 5 ('all of the time'). Items are summed to create a total score (range 5 to 25), with higher scores indicating a higher frequency of anger.

Physical violence

Two items addressing participants' personal experiences with physical violence or threatened violence were taken from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011). Participants were asked whether they had got into a fight or hit someone in the last month, or whether they had threatened someone with physical violence in the last month. Both items were scored on a 5-point scale ranging from 'never' to 'five or more times', which was further collapsed into two categories for the current report – 'never' and 'one or more times'.

The following additional survey measures are examined in 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 two-item Connor-Davidson Resilience Scale (CD-RISC 2) (Connor & Davidson, 2003). These 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 PTSD module of the Composite International Diagnostic Interview Version 3 (CIDI 3.0) (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.

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, PTSD, 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).

For the full methodology, including a comprehensive description of all measures used in the survey, refer to Annex A.

3 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.

Refer to the glossary for definitions of key terms used in this chapter.

3.1 Demographic characteristics of the Transitioned ADF and the 2015 Regular ADF

Table 3.1 describes the demographic characteristics of the longitudinal cohort of Transitioned ADF and 2015 Regular ADF.

There were similar proportions of Transitioned ADF and 2015 Regular ADF who were 'in a relationship and living together' and 'in a relationship not living together'; however, 2015 Regular ADF had a higher proportion reporting 'not in a relationship' (12.2% vs 6.3%).

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

There were no differences in whether the respondents reported having stable housing over the past two months.

Table 3.2 describes the service characteristics of the Transitioned ADF and 2015 Regular ADF.

Compared to 2015 Regular ADF, more Transitioned ADF served in the Regular ADF 1 month to 7.9 years, or 20+ years, whereas more Regular ADF served 8 to 19.9 years. Almost half of responders in both groups reported serving 20+ years.

3.2 Demographic characteristics of Transitioned ADF

As seen in Table 3.3, 38.4% of Transitioned ADF responders remained in the ADF as Active Reservists and 30.1% as Inactive Reservists. Regardless of Reservist status, the majority reported transitioning between one and four years ago. 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%; with this percentage increasing to over 60% when including 'end of fixed period' (1.9%) and 'end of initial enlistment period' (1.5%). 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%), '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%).

Table 3.1 Unweighted demographic characteristics in Transitioned and 2015 Regular ADF

Demographic characteristics	Transitioned ADF n = 2334		2015 Regular ADF n = 6163		Total n = 8497	
	n	%	n	%	n	%
Relationship status						
In a relationship and living together	357	15.3	820	13.3	1177	13.9
In a relationship not living together	1784	76.4	4502	73.0	6286	74.0
Not in a relationship	147	6.3	752	12.2	899	10.6
Education						
Primary/secondary school	493	21.1	1267	20.6	1760	20.7
Certificate	621	26.6	1244	20.2	1865	21.9
Diploma	468	20.1	1410	22.9	1878	22.1
University	721	30.9	2158	35.0	2879	33.9
Employment status						
Full-/part-time paid work	1574	67.4	6163	100.0	7737	91.1
Unpaid work	81	3.5	–	–	81	1.0
Unemployed/looking for work	103	4.4	–	–	103	1.2
Unemployed – sickness allowance/disability support pension	195	8.4	–	–	195	2.3
Student	66	2.8	–	–	66	0.8
Retired	281	12	–	–	281	3.3
Main source of income						
Wage/salary/own business/partnership	1340	57.4	6163	100.0	7503	88.3
Age pension	196	8.4	–	–	196	2.3
Invalidity service pension	133	5.7	–	–	133	1.6
VEA/SRCA/MRCA compensation	74	3.2	–	–	74	0.9
Dividends/interest/investments	17	0.7	–	–	17	0.2
Other pension/benefit/allowance	84	3.6	–	–	84	1.0
Superannuation	280	12.0	–	–	280	3.3
Other	161	6.9	–	–	161	1.9
Stable housing						
No	59	2.5	148	2.4	207	2.4
Yes	2217	95.0	5896	95.7	8113	95.5

VEA = Veterans' Entitlements Act; SRCA = Safety, Rehabilitation and Compensation Act; MRCA = Military Rehabilitation and Compensation Act.

Missing: 2015 Regular ADF: Relationship status – 89 (1.4%), Education – 84 (1.4%), Stable housing – 119 (1.9%). Transitioned ADF: Relationship status – 46 (2.0%), Education – 31 (1.3%), Employment – 34 (1.5%), Main income – 49 (2.1%), Stable housing – 58 (2.5%).

Table 3.2 Unweighted service characteristics in Transitioned and 2015 Regular ADF

Service characteristics	Transitioned ADF n = 2334		2015 Regular ADF n = 6163		Total n = 8497	
	n	%	n	%	n	%
Time in Regular ADF						
1 month – 3.9 years	32	1.4	– [#]	–	35	0.4
4 – 7.9 years	381	16.3	414	6.7	795	9.4
8 – 11.9 years	321	13.8	1041	16.9	1362	16.0
12 – 15.9 years	278	11.9	1046	17.0	1324	15.6
16 – 19.9 years	156	6.7	775	12.6	931	11.0
20+ years	1123	48.1	2804	45.5	3927	46.2

[#] Cell size too small to be reported.

Missing: 2015 Regular ADF: Time in Regular ADF – 80 (1.3%). Transitioned: Time in Regular ADF – 43 (1.8%).

Table 3.3 Unweighted transition characteristics in Transitioned ADF

Transition characteristics	Transitioned ADF n = 2334	
	n	%
Serving status		
Ex-serving	729	31.2
Reservist		
Active Reservist	897	38.4
Inactive Reservist	702	30.1
Years since transitioned		
0	226	9.7
1	430	18.4
2	419	18.0
3	513	22.0
4	417	17.9
5+	221	9.5
Type of discharge/resignation		
Compulsory age	133	5.7
Own request	1346	57.7
Unsuitable for further training	12	0.5
End of fixed period	44	1.9
End of initial enlistment period/return of service obligation	36	1.5
Limited tenured appointment (Officers)	15	0.6
Not offered re-engagement	6	0.3
Accepted voluntary redundancy	118	5.1
Compassionate grounds	10	0.4
Non-voluntary discharge – administrative	23	1.0
Medical discharge	435	18.6
Other	103	4.4
Main reason for transition		
Better employment prospects in civilian life	144	6.2
Lack of promotion prospects	91	3.9
Inability to plan life outside of work	32	1.4
Impact of service life on family	257	11.0
Pressure from family	24	1.0
Didn't want to be away from home	65	2.8
Pregnancy	–#	–
Posting issues (i.e. unhappy with location or nature of postings)	142	6.1
Too many deployments	–#	–
Not enough deployments	22	0.9
Because of my experiences on deployment	16	0.7
Work not exciting or challenging enough	41	1.8
Dissatisfaction with pay	16	0.7
Personal experience of harassment/bullying/discrimination in the ADF	73	3.1
Personal experience of violence in the ADF	–#	–
Disciplinary action or criminal offence	–#	–
My service was terminated	54	2.3
Physical health problems	143	6.1
Mental health problems	138	5.9
Other	95	4.1

Cell size too small to be reported.

Missing: Serving status – 6 (0.3%), Years since transitioned – 106 (4.6%), Type of discharge – 53 (2.3%), Main reason – 973 (41.7%).

Table 3.4 summarises employment and Department of Veterans' Affairs (DVA) support characteristics for Transitioned ADF members. Just over half of the Transitioned ADF responders reported being engaged in civilian employment (55.3%). For those individuals, the most common industries of employment were government administration and defence (29.0%), transport and storage (9.1%), and health and community services (9.0%). Industry of employment was not reported for 1.4%. 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%).

As seen in Table 3.5, 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.

Table 3.4 Unweighted civilian employment and DVA support in Transitioned ADF

Civilian employment and DVA support	Transitioned ADF n = 2334	
	n	%
Civilian employment		
Employed	1291	55.3
Not employed	1006	43.1
Hours worked in past week[#]		
0–20 hours	119	9.2
21–40 hours	611	47.3
41–60 hours	428	33.2
61–80 hours	48	3.7
80+ hours	51	4.0
Civilian employment industry[#]		
Agriculture, forestry and fishing	22	1.7
Mining	102	7.9
Manufacturing	47	3.6
Electricity, gas and water supply	33	2.6
Construction	68	5.3
Wholesale trade	9	0.7
Retail trade	53	4.1
Accommodation, cafes and restaurants	18	1.4
Transport and storage	117	9.1
Communication services	56	4.3
Finance and insurance	16	1.2
Property and business services	36	2.8
Government administration and defence	374	29.0
Education	61	4.7
Health and community services	116	9.0
Cultural and recreational services	15	1.2
Personal and other services	73	5.7
Emergency services	57	4.4
Unemployment: at least 3-month period since transition		
Yes	906	38.8
No	1365	58.5
DVA support since transition		
Treatment support (White Card or Gold Card)	1052	45.1
White Card	918	39.3
Gold Card	137	5.9

[#] Proportion of employed Transitioned ADF only.

Missing: Civilian employment – 37 (1.6%), Hours worked – 34 (2.6%), Industry – 18 (1.4%), Unemployment – 63 (2.7%).

Table 3.5 Unweighted ex-service organisation engagement and incarcerations in Transitioned ADF

Ex-service organisation engagement and incarcerations	Transitioned ADF n = 2334	
	n	%
No. of ex-service organisations joined		
None	1267	54.3
1	533	22.8
2	147	6.3
3	40	1.7
4	13	0.6
5+	9	0.4
No. of other voluntary groups joined		
None	1198	51.3
1	440	18.9
2	220	9.4
3	91	3.9
4	24	1.0
5+	18	0.8
Criminal behaviour since transition		
Arrested	26	1.1
Conviction	20	0.9
Imprisoned	— [#]	—

[#] Cell size too small to be reported.

Missing: Ex-service organisations – 1592 (68.2%), Other organisations – 343 (14.7%).

4 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 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 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 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%).

Refer to the glossary for definitions of key terms used in this chapter.

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 the 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, data are 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 in the following tables is 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.

4.1 Anxiety, affective and alcohol disorders

Table 4.1 presents the unweighted prevalence of 12-month ICD-10 anxiety, affective and alcohol disorders in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015. Figure 4.1 illustrates the per cent change in rates of 12-month ICD-10 anxiety, affective and alcohol disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF.

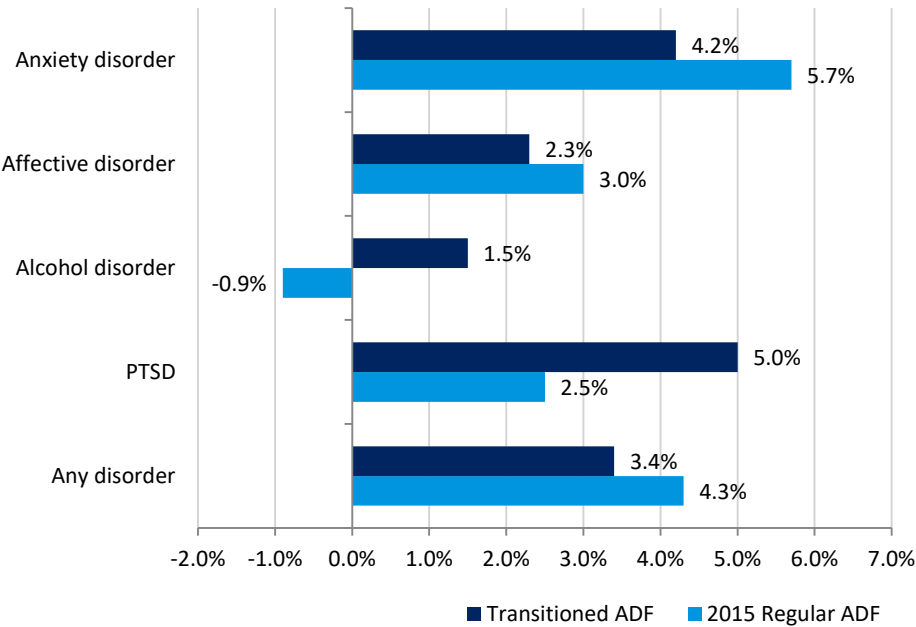
In both 2010 and 2015, the highest rates of disorder were reported for anxiety disorders (32.6% in 2010 and 37.8% in 2015). Anxiety disorders were the only disorder group that showed a significant change over time, with a greater proportion of participants meeting criteria for anxiety disorders in 2015 (37.8%) compared to 2010 (32.6%) (OR 1.29; 95% CI 1.04, 1.59). 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 for 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 4.1 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: Transitioned 2015 vs Regular 2015	2015: Transitioned 2015 vs Regular 2015	2015 total vs 2010 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.

Figure 4.1 Per cent change in rates of 12-month ICD-10 anxiety, affective and alcohol disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF



For affective disorders, 18.3% of the longitudinal cohort met criteria for these in 2010, and 21.1% in 2015, and these rates were not significantly different. There was no difference in the rates of affective disorders for those who had transitioned compared to those who remained in the Regular ADF in 2015, in either year (2010: 21.1% vs 17.0%; OR 1.30; 95% CI 0.90, 1.89), (2015: 23.4% vs 20.0%; OR 1.22; 95% CI 0.85, 1.73).

Alcohol disorders were detected at relatively low rates overall, with no significant difference over time, with 6.5% in 2010 and 6.3% in 2015. Those of the longitudinal cohort who had transitioned compared to remaining in the Regular ADF in 2015 had similar proportions of alcohol disorders in 2010 (7.7% vs 5.9%; OR 1.32; 95% CI 0.74, 2.35), with higher levels in 2015 among those who had transitioned in 2015 (9.2% vs 5.0%; OR 1.92; 95% CI 1.09, 3.38). This was due to an increase between time points among Transitioned ADF and a slight decrease among 2015 Regular ADF.

When PTSD was separated out from the other anxiety disorders, results showed that 13.4% of the longitudinal cohort met criteria for this disorder in 2010 and 16.7% in 2015, and these rates did not significantly differ. Those in the cohort who had transitioned in 2015 had higher rates in both 2010 and 2015 compared to those who remained in the Regular ADF in 2015. This difference was larger for PTSD specifically than any of the disorder categories (2010: 19.5% vs 10.6%; OR 2.06; 95% CI 1.37, 3.09),

(2015: 24.5% vs 13.1%; OR 2.16; 95% CI 1.49, 3.14). Transitioned ADF showed a larger increase over the two time points than Regular ADF.

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).

4.2 Anxiety disorders

This section looks at the rates of 12-month ICD-10 anxiety disorders in the longitudinal cohort. Eight types of anxiety disorders were examined, and are outlined below:

- **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:** regular panic attacks that are unpredictable in nature.
- **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.
- **Social phobia:** marked fear or avoidance of being the centre of attention or being 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:** 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, dentists or hospitals, and accompanied by anxiety symptoms as described under 'agoraphobia' (above).
- **Generalised anxiety disorder (GAD):** 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' (above). 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.

- **Obsessive-compulsive disorder (OCD):** 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.
- **Posttraumatic stress disorder (PTSD):** 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 (increased arousal and sensitivity to cues) or inability to recall important parts of the experience.

Table 4.2 shows the unweighted prevalence of 12-month ICD-10 anxiety disorders in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015. Figure 4.2 illustrates the per cent change in rates of 12-month ICD-10 anxiety disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF.

The highest rates of 12-month ICD-10 anxiety disorders among the cohort were found for panic attack and PTSD in both 2010 (13.8% and 13.4%) and 2015 (16.0% and 16.7%). Comparatively low rates of panic disorder, GAD and OCD were found in 2010 (4.1%, 2.8%, 3.9%) and 2015 (4.1%, 5.4%, 4.9%).

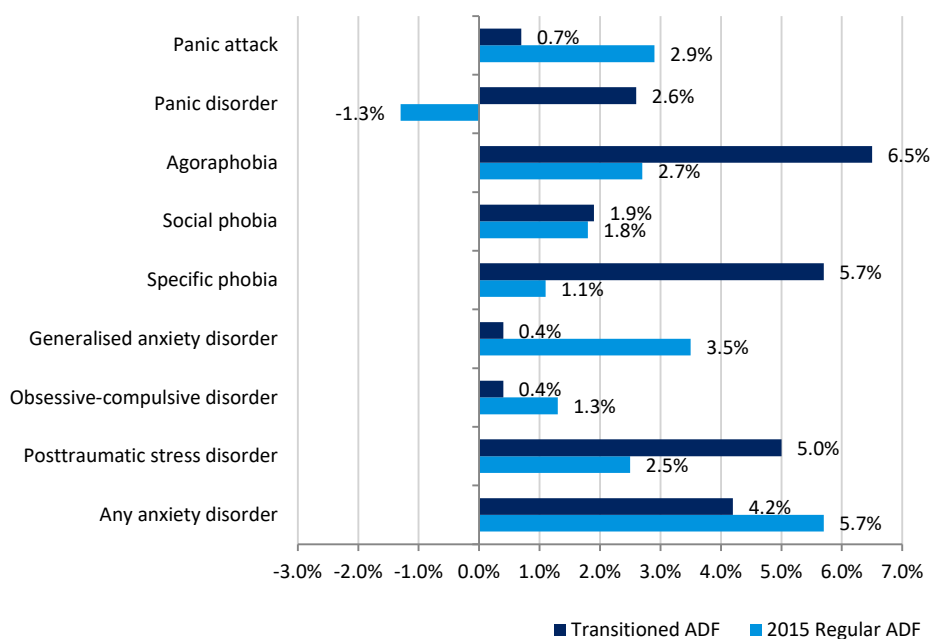
All disorders were either detected at similar rates in 2010 and 2015 among those who had transitioned compared to those who remained in the Regular ADF in 2015, or were higher among those who had transitioned. Similar proportions of those who had transitioned compared to those who remained in the Regular ADF in 2015 met criteria for panic attacks in 2010 (16.9% vs 12.3%; OR 1.44; 95% CI 0.96, 2.17) and 2015 (2015 Transitioned ADF 17.6%; 2015 Regular ADF 15.2%; OR 1.19; 95% CI 0.81, 1.77). This was a result of a slightly larger increase among those who remained in the Regular ADF compared to those who had transitioned. Panic disorder rates were similar in 2010 among those who had transitioned compared to those who remained in the Regular ADF in 2015 (5.4% vs 3.6%; OR 1.53; 95% CI 0.76, 3.07), but higher in 2015 among those who had transitioned (8.0% vs 2.3%; OR 3.68; 95% CI 1.81, 7.46). This was the greatest difference found between groups, resulting from an increase in prevalence between time points among those who had transitioned, and a decrease among those who remained in the Regular ADF.

Table 4.2 Rates of 12-month ICD-10 anxiety disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme						Odds ratio		
ICD-10 anxiety disorder	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: Transitioned 2015 vs Regular 2015	2015: Transitioned 2015 vs Regular 2015	2015 total vs 2010 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.

Figure 4.2 Per cent change in rates of 12-month ICD-10 anxiety disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF



Rates of agoraphobia increased between 2010 (5.4%) and 2015 (9.3%) in the longitudinal cohort (OR 1.82; 95% CI 1.24, 2.69). 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). 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%; 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 GAD increased between 2010 (2.8%) and 2015 (5.4%) in the longitudinal cohort (OR 1.97; 95% CI 1.18, 3.30). Rates of GAD 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); however, 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. Social phobia and OCD did not differ in 2010 or 2015 between those who had transitioned compared to those who remained in the Regular ADF in 2015. PTSD and any anxiety disorder have been discussed in the previous section.

4.3 Affective disorders

This section looks at rates of 12-month ICD-10 affective disorder in the longitudinal cohort. The following three types of affective disorder were included:

- **Depressive episodes** are a characteristic of a major depressive disorder and require 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, reduced 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 a hypomanic or manic episode.
- **Dysthymia** is 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 depressive disorder. Hierarchy rules were applied to dysthymia, such that to have this mental disorder, a person could not have met criteria for a hypomanic or manic episode, and could not have reported episodes of severe or moderate depression within the first two years of dysthymia.
- **Bipolar affective disorder** is 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 last 12 months, as follows:
 - **Hypomanic episodes** 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 mental 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.
 - **Mania** is similar to hypomania but is 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.

Table 4.3 shows the unweighted prevalence of 12-month ICD-10 affective disorders in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015. Figure 4.3 illustrates the per cent change in rates of 12-month ICD-10 affective disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF.

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. Much lower rates of dysthymia (2010: 2.2%, 2015: 4.5%) and bipolar affective disorder (2010: 4.1%, 2015: 5.9%) were detected. 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%; OR 2.11; 95% CI 1.19, 3.74). Rates of all other affective disorders did not significantly change in the cohort as a whole between 2010 and 2015.

Rates of all disorders except dysthymia were similar in both 2010 and 2015 among those who had transitioned compared to those who remained in the Regular ADF in 2015. For dysthymia, those who had transitioned had higher rates in 2015 compared to those who remained in the Regular ADF (7.3% vs 3.2%; OR 2.36; 95% CI 1.22, 4.58). This resulted from a large increase in prevalence between 2010 and 2015 among those who had transitioned. Any affective disorder has been discussed previously.

Figure 4.3 Per cent change in rates of 12-month ICD-10 affective disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

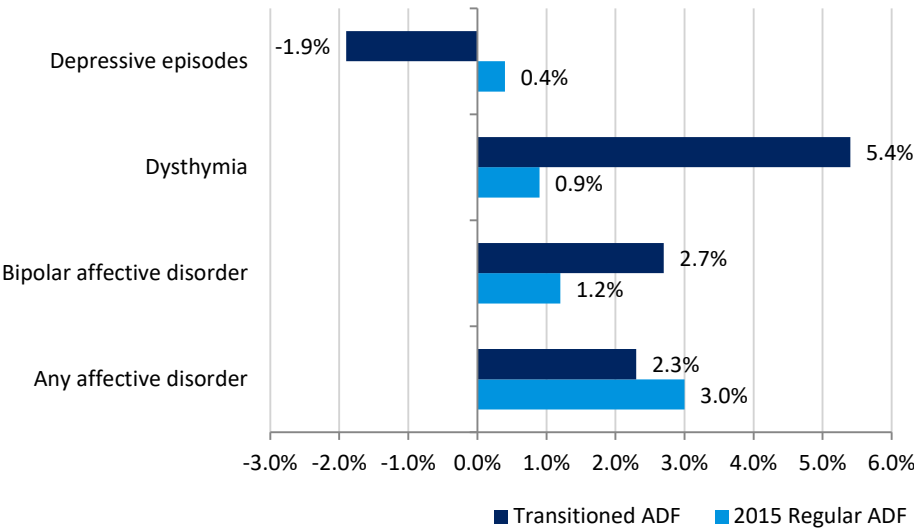


Table 4.3 Rates of 12-month ICD-10 affective disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

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: Transitioned 2015 vs Regular 2015	2015: Transitioned 2015 vs Regular 2015	2015 total vs 2010 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.

4.4 Alcohol disorders

This section looks at rates of lifetime and 12-month ICD-10 alcohol disorder in the longitudinal cohort. The following two types of alcohol disorder were included:

- **Alcohol harmful use:** a pattern of alcohol use that is damaging to health. The damage may be physical or mental (in the absence of the diagnosis of dependence syndrome (ICD-10). Diagnosis requires high levels of alcohol consumption that are damaging 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 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 related to their drinking during the last 12 months. A person could not meet criteria for alcohol harmful use if they met criteria for alcohol dependence.
- **Alcohol dependence:** a cluster of cognitive, behavioural and physiological characteristics indicating that the person continues to use alcohol despite significant alcohol-related problems (ICD-10). This is characterised by 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 several associated problems. A diagnosis is given if the person reported three or more of the following symptoms in the last 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
 - a reduction in important activities because of or in order to drink.

Table 4.4 shows the unweighted prevalence of 12-month ICD-10 alcohol disorders in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015. Figure 4.4 illustrates the per cent change in rates of 12-month ICD-10 alcohol disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF.

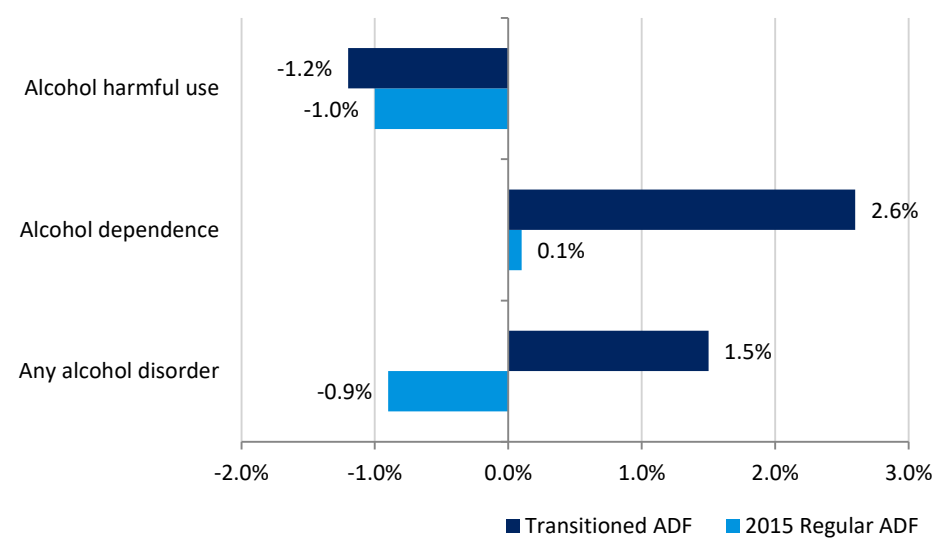
Table 4.4 Rates of 12-month ICD-10 alcohol disorders in 2010 and 2015 in Transitioned ADF and 2015 Regular ADF

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: Transitioned 2015 vs Regular 2015	2015: Transitioned 2015 vs Regular 2015	2015 total vs 2010 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.

Overall, alcohol disorders were detected at relatively low levels, and did not significantly differ between 2010 and 2015 among the cohort as a whole. Alcohol dependence (2010: 3.5%, 2015: 4.5%) was detected at higher levels at both time points than alcohol harmful use (2010: 2.9%, 2015: 1.8%). Alcohol harmful use was similar in 2010 among those who had transitioned and those who remained in the Regular ADF in 2015 (4.6% vs 2.1%; OR 2.20; 95% CI 0.97, 4.96), but higher in 2015 among those who had transitioned (3.4% vs 1.1%; OR 3.29; 95% CI 1.16, 9.35). Alcohol dependence did not differ between groups at either time point. Any alcohol disorder has been discussed previously.

Figure 4.4 Per cent change in rates of 12-month ICD-10 alcohol disorders between 2010 and 2015 in Transitioned ADF and 2015 Regular ADF



4.5 MHPWS 12-month ICD-10 CIDI disorder predicting Transition and Wellbeing Research Programme 12-month ICD-10 CIDI disorder

Table 4.5 shows the proportions of 12-month ICD-10 disorder and no disorder on the CIDI in 2010 cross-tabulated by the same grouping of CIDI diagnoses in 2015, among the entire longitudinal cohort, and according to whether they had transitioned (Transitioned ADF) compared to remained in the Regular ADF in 2015 (2015 Regular ADF).

Table 4.5 Proportion of entire longitudinal cohort meeting criteria for 12-month disorder in 2010 who do/do 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
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
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

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
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
Any disorder	No	476	40	29.6	95	70.4	94	27.6	247	72.4	134	28.2	342	71.8
	Yes	344	95	75.4	31	24.6	148	67.9	70	32.1	243	70.6	101	29.4

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

Of the cohort who had no anxiety disorder in 2010, similar proportions of those who had transitioned (22.4%) and those who remained in the Regular ADF (24.0%) became new cases in 2015. 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%).

For panic attack, again similar proportions of those who had transitioned (11.5%) compared to those remaining in the Regular ADF (12.9%) became new cases in 2015. However, of those reporting any anxiety disorder in 2010, again, 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, those who had transitioned (11.7%) had greater proportions of new cases in 2015 compared to those who remained in the Regular ADF (6.0%), and a greater proportion of those who had transitioned compared to those remaining in the Regular ADF retained their disorder in 2015 compared to Regular ADF (50.0% vs 22.7%).

For social phobia, a slightly greater proportion of those who had transitioned compared to those who remained in the Regular ADF were new cases in 2015 (9.7% vs 6.9%). In contrast, a lower proportion of those who had transitioned compared to those who remained in the Regular ADF retained their disorder in 2015 (28.0% vs 36.6%).

For specific phobia, a greater proportion of those who had transitioned became new cases in 2015 compared to those who remained in the Regular ADF (11.9% vs 7.8%), and a greater proportion of those who transitioned retained their disorder in 2015 compared to those who remained in the Regular ADF (50.0% vs 27.7%).

The proportion of new GAD and 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%).

For 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%). Similarly, a greater proportion of those who had transitioned (51.0%) retained their disorder in 2015 compared to those who remained in the Regular ADF (44.1%).

Of those who had no affective disorder in 2010, similar proportions of those who had transitioned and those who remained in the Regular ADF in 2015 became new disorder cases in 2015 (17.0% vs 15.1%), or retained their disorder in 2015 (Transitioned ADF 47.3%; Regular ADF 44.2%).

For depressive episodes, similar proportions of those who had transitioned and those who remained in the Regular ADF became new cases in 2015 (11.0% vs 11.1%). However, of those reporting a depressive episode in 2010, a slightly 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%).

The proportion of new dysthymia and bipolar affective disorder cases in 2015 was small. Slightly more of those who had transitioned (6.6%) became new cases of dysthymia in 2015 compared to those who remained in the Regular ADF (3.1%), and a much greater proportion of those who had transitioned (40.0%) retained their disorder in 2015 compared to those who remained in the Regular ADF (7.7%). For bipolar affective disorder, slightly more of those who had transitioned (6.5%) became new cases in 2015 compared to those who remained in the Regular ADF (3.7%), and a slightly smaller proportion of those who had transitioned (30.8%) retained their disorder in 2015 compared to those who remained in the Regular ADF (38.1%).

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%).

For alcohol harmful use specifically, proportions of new cases in 2015 were very low, with only slightly more of those who were transitioned (2.8%) being new cases compared to those who remained in the Regular ADF (1.1%). There were no retained cases of alcohol harmful use among those who remained in the Regular ADF, while among those who transitioned, 16.7% retained their disorder.

New cases of alcohol dependence were slightly greater among those who had transitioned (5.1%) compared to those who remained in the Regular ADF (2.8%); however, a smaller proportion of those who had transitioned (25.0%) retained their disorder in 2015 compared to those who remained in the Regular ADF (33.3%).

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%).

5 Self-reported mental health in the longitudinal cohort

Psychological distress (K10)

- On the 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.

Refer to the glossary for definitions of key terms used in this chapter.

This chapter provides a detailed descriptive summary of 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 are examined cross-sectionally at both time points for ADF members who have transitioned from the Regular ADF since 2015 (Transitioned ADF) compared to 2015 Regular ADF within the longitudinal cohort. All results were descriptively compared in this chapter, with no statistical comparisons made, and no odds ratios presented.

The key measures used in this chapter are (further details of how these measures are scored are provided in the relevant sections that follow):

- **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 disorder symptoms:** The PTSD Checklist – civilian version (PCL-C) (Weathers et al., 1993), a 17-item scale for measuring PTSD symptoms

- **Alcohol use and problem drinking:** The Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 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 et al., 2001), the 9-item depression module of the PHQ
- **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. These screening cut-offs maximise potential identification of true cases but include a larger proportion of 'false positives' than the epidemiological cut-offs. Screening cut-offs are also reported in this chapter.

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'.

In the following sections, 'no disorder', 'subsyndromal disorder' and 'probable disorder' are reported.

5.1 Psychological distress (K10) in the longitudinal cohort

This section of the report will provide a detailed summary of the pattern of psychological distress reported by the longitudinal cohort across two time points: the 2010 MHPWS assessment, and the 2015 Transition and Wellbeing Research Programme assessment.

The K10 is a 10-item screening questionnaire for psychological distress that was developed for use in the United States National Health Interview Survey (Kessler et al., 2002). Originally designed as a short, easily administered screen for psychological distress, the K10 is typically used to inform and complement clinical interviews and to quantify levels of distress in those who are in particular need of treatment. It is commonly used in mental health screening within the ADF.

Respondents were instructed to rate the amount of time they had experienced one of 10 emotional states during the last four weeks (e.g. tired for no good reason, nervous, hopeless, depressed). The 10 questions are scored from 1 to 5, whereby the respondent must indicate how often they have been feeling that way using one of the following response options: 'all of the time' (5), 'most of the time', 'some of the time', 'a little of the time', or 'none of the time' (1). Scores for the 10 questions are then summed to give a total score from 10 to 50.

In addition to mean K10 scores, two sets of cut-offs derived from the 2010 ADF Mental Health Prevalence and Wellbeing Study were utilised in this section of the report: optimal screening cut-off, and optimal epidemiological cut-off. Psychometric analysis of the K10 indicated different optimal screening cut-offs for affective disorder (19) and anxiety disorder (17) (McFarlane et al., 2011). In order to most effectively capture both disorders, the conservative optimal screening cut-off of 17 was used. This cut-off can be used to identify individuals who might need care. To ascertain the level of probable disorder in the population, a more stringent epidemiological cut-off of 25 was applied.

Table 5.1 and Figure 5.1 show mean K10 scores in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015.

In the cohort as a whole, mean K10 scores were 15.4 (SE 0.1) in 2010 and increased slightly to 16.9 (SE 0.1) in 2015. Those who had transitioned in 2015 reported greater mean scores at both time points compared with those who remained in the Regular ADF (2010: 16.5 (SE 0.1) vs 15.1 (SE 0.1), 2015: 19.0 (SE 0.2) vs 16.2 (SE 0.1)), and the increase in scores over time was slightly greater in those who had transitioned compared to those who remained in the Regular ADF.

Table 5.1 Mean K10 scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

K10	Transitioned ADF n = 2173		2015 Regular ADF n = 5775		Total n = 7948	
	Mean	SE	Mean	SE	Mean	SE
2010 ADF Mental Health Prevalence and Wellbeing Study	16.5	0.1	15.1	0.1	15.4	0.1
2015 Transition and Wellbeing Research Programme	19.0	0.2	16.2	0.1	16.9	0.1

Note: Unweighted data.

Figure 5.1 Mean K10 scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

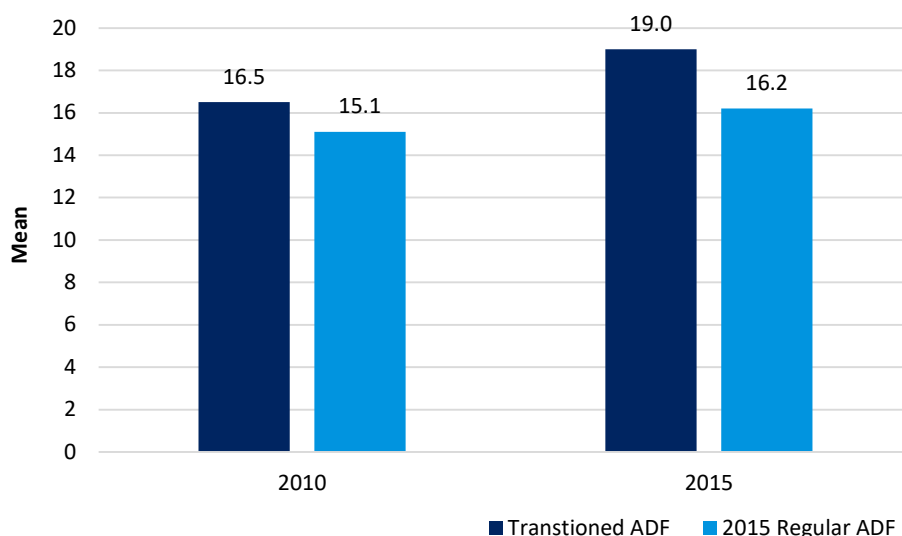


Table 5.2 and Figure 5.2, Table 5.3 and Figure 5.3, and Table 5.4 and Figure 5.4 show the proportion of those with no disorder, subsyndromal disorder and probable disorder on the K10 in 2010 cross-tabulated by the same grouping of K10 scores in 2015, among the entire longitudinal cohort and according to whether they had transitioned or remained in the Regular ADF in 2015.

In 2010, 22.5% of the longitudinal cohort reported subsyndromal disorder symptoms and 7.8% reported probable disorder symptoms on the K10. In 2015, subsyndromal disorder symptoms fell to 18.4% but probable disorder cases almost doubled to 14.9%. Of those reporting no disorder in 2010, 12.7% became new cases of subsyndromal disorder and 10.2% became new cases of probable disorder. Of those with subsyndromal disorder in 2010, almost half (47.6%) no longer met any criteria in 2015, 32.5% remained in this category, and 19.8% now had a probable disorder. Of those with probable disorder on the K10 in 2010, 42.5% remained in this category in 2015, 28.9% fell to having a subsyndromal disorder, and 28.6% no longer reported a disorder.

Among those who had transitioned, 63.3% had no disorder on the K10 in 2010, 25.2% reported subsyndromal disorder and 11.5% had probable disorder. In 2015, 56.2% had no disorder, subsyndromal disorder fell to 21.1% and probable disorder almost doubled to 22.6%. Of those who had no disorder on the K10 in 2010, 16.1% had a subsyndromal disorder in 2015 and 15.2% had a probable disorder. Of those with a subsyndromal disorder in 2010, 32.7% remained in this category, 42.2% no longer had a disorder, and 25.2% now had a probable disorder. Of those with a probable disorder in 2010, over half (58.0%) still had a probable disorder, 23.2% now had a subsyndromal disorder and 18.8% no longer met criteria for a disorder.

Those who remained in the Regular ADF reported lower levels of disorder on the K10 in 2010 and 2015 compared to those who had transitioned. In 2010, 72.2% of those who went on to remain in the Regular ADF had no disorder on the K10, 21.4% had subsyndromal disorder and 6.3% met criteria for probable disorder. In 2015, similar proportions reported no disorder (70.7%), subsyndromal fell to 17.4% and probable disorder increased to 11.9%. Of those with no disorder in 2010, 11.5% were new cases of subsyndromal disorder in 2015 and 8.5% were new cases of probable disorder. Of those with subsyndromal disorder in 2010, half (50.0%) no longer had a disorder in 2015, 32.5% remained subsyndromal and 17.5% became new cases of probable disorder. Of those with a probable disorder in 2010, 35.2% no longer had a disorder in 2015, 32.8% fell to subsyndromal and 32.0% remained probable.

When comparing Transitioned ADF and 2015 Regular ADF, patterns were similar except for two notable differences: a larger proportion of 2015 Regular ADF who had no disorder on the K10 in 2010 remained disorder free in 2015 (79.9% vs 68.7%), and a larger proportion of Transitioned ADF who had probable disorder in 2010 remained cases of probable disorder in 2015 (58.0% vs 32.0%).

Table 5.2 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 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	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	5547	69.8	4279	77.1	703	12.7	565	10.2
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1785	22.5	850	47.6	581	32.5	354	19.8
Probable disorder: Above both screening and epidemiological cut-offs	616	7.8	176	28.6	178	28.9	262	42.5
Total	7948	100.0	5305	66.7	1462	18.4	1181	14.9

Note: Unweighted data.

Figure 5.2 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015

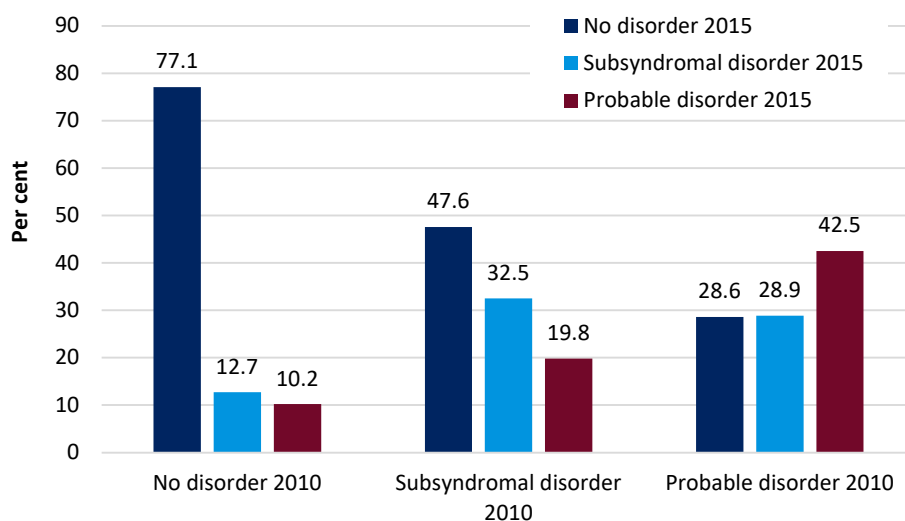


Table 5.3 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
K10	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	1375	63.3	944	68.7	222	16.1	209	15.2
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	548	25.2	231	42.2	179	32.7	138	25.2
Probable disorder: Above both screening and epidemiological cut-offs	250	11.5	47	18.8	58	23.2	145	58.0
Total	2173	100.0	1222	56.2	459	21.1	492	22.6

Note: Unweighted data.

Figure 5.3 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015

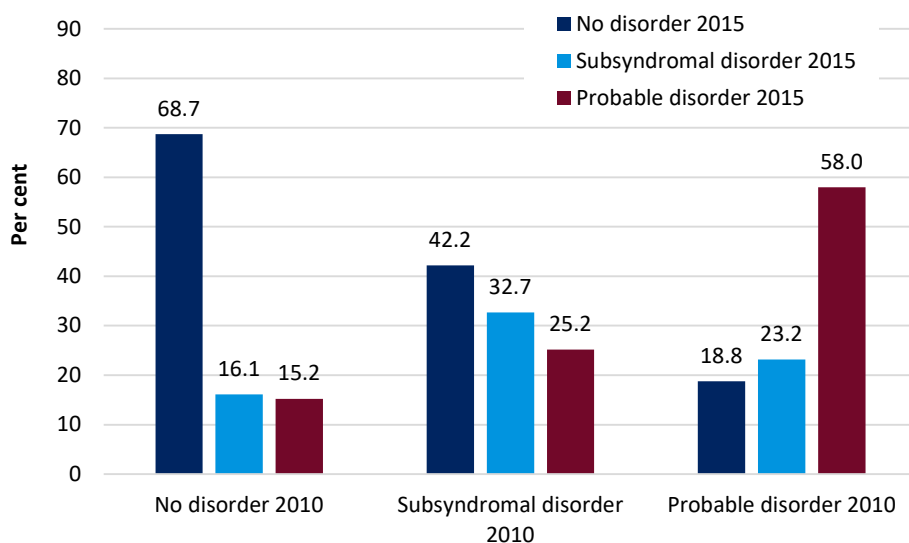
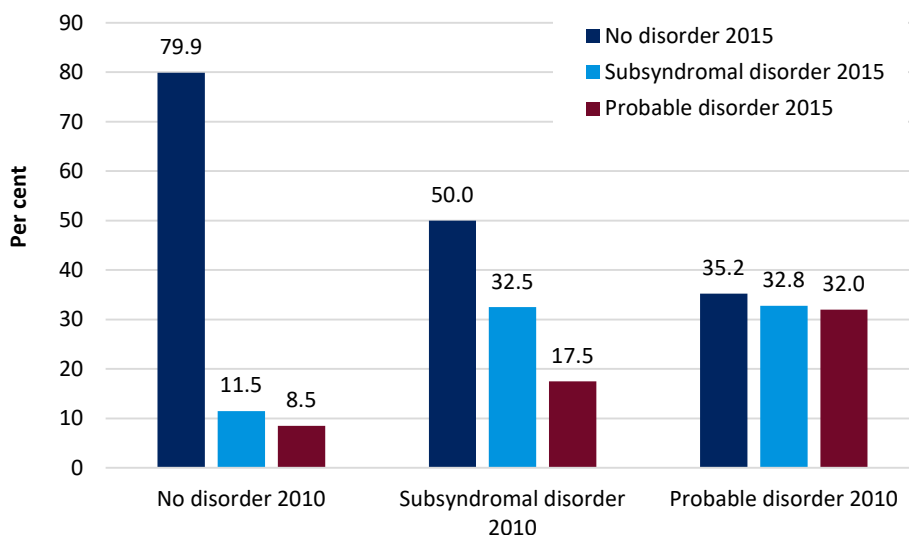


Table 5.4 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
K10	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	4172	72.2	3335	79.9	481	11.5	356	8.5
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1237	21.4	619	50.0	402	32.5	216	17.5
Probable disorder: Above both screening and epidemiological cut-offs	366	6.3	129	35.2	120	32.8	117	32.0
Total	5775	100.0	4083	70.7	1003	17.4	689	11.9

Note: Unweighted data.

Figure 5.4 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 in 2010 and 2015



5.2 Posttraumatic stress disorder symptoms (PCL-C) in the longitudinal cohort

This section will provide a detailed summary of the pattern of posttraumatic stress disorder (PTSD) symptoms reported by the longitudinal cohort across two time points: the 2010 MHPWS assessment, and the 2015 Transition and Wellbeing Research Programme assessment.

Respondents were instructed to indicate how much they were bothered by each symptom in the last month by using one of the following response options: 'not at all' (1), 'a little bit' (2), 'moderately' (3), 'quite a bit' (4), or 'extremely' (5). The 17-item Posttraumatic Stress Disorder Checklist – civilian version (PCL-C) was used instead of the PCL-5 (PCL for the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5)) in order to allow comparisons to be made with the 2010 Regular ADF cohort. Additional questions relating to DSM-5 PTSD were included in the survey but will not be addressed in this section.

The 17 questions of the PCL-C were scored from 1 to 5 and summed to give a total score of between 17 and 85. From this, mean PCL-C scores were derived and reported for Transitioned ADF and Regular ADF at each time point.

In addition to mean PCL-C scores, an optimal screening cut-off of 29 and an optimal epidemiological cut-off of 53 were used. These cut-offs were derived from the 2010 ADF Mental Health Prevalence and Wellbeing Study.

Table 5.5 and Figure 5.5 show mean PCL-C scores in 2010 and 2015 for the longitudinal cohort according to whether they had transitioned or remained in the Regular ADF in 2015.

Mean PCL-C scores were 23.5 (SE 0.1) in 2010 and increased to 25.8 (SE 0.1) in 2015. Those who had transitioned reported higher mean scores in both 2010 and 2015 than those who remained in the Regular ADF (2010: 25.6 (SE 0.3) vs 22.7 (SE 0.1), 2015: 30.3 (SE 0.4) vs 24.1 (SE 0.1)). Those who had transitioned also had a greater increase in mean scores compared to those who remained in the Regular ADF.

Table 5.5 **Mean PCL-C scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort**

K10	Transitioned ADF n = 2027		2015 Regular ADF n = 5476		Total n = 7503	
	Mean	SE	Mean	SE	Mean	SE
2010 ADF Mental Health Prevalence and Wellbeing Study	25.6	0.3	22.7	0.1	23.5	0.1
2015 Transition and Wellbeing Research Programme	30.3	0.4	24.1	0.1	25.8	0.1

Note: Unweighted data.

Figure 5.5 **Mean PCL-C scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort**

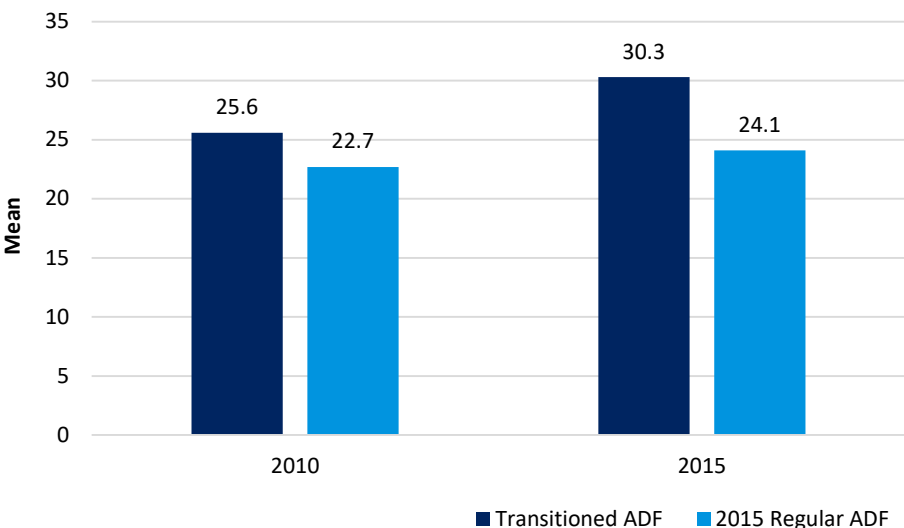


Table 5.6 and Figure 5.6, Table 5.7 and Figure 5.7, and Table 5.8 and Figure 5.8 show the proportion with no disorder, subsyndromal disorder and probable disorder on the PCL-C in 2010 cross-tabulated by the same grouping of PCL-C scores in 2015, among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

In 2010, 81.1% did not meet criteria for any disorder on the PCL-C, 16.2% met criteria for subsyndromal disorder, and 2.7% met criteria for probable disorder. In 2015, 75.3% had no disorder, and subsyndromal disorder increased to 19.2% and probable disorder to 5.5%. Of those with no disorder on the PCL-C in 2010, 83.2% continued to have no disorder in 2015, 14.1% now had a subsyndromal disorder and 2.6% now had a probable disorder. Of those with subsyndromal disorder in 2010, 40.3% remained subsyndromal, 45.4% no longer had a disorder on the PCL-C and 14.3% now met criteria for a probable disorder. Of those with a probable disorder in 2010, 37.6%

remained in this category, 45.4% fell to subsyndromal and 17.1% no longer had a disorder.

Among those who had transitioned, 75.0% did not meet criteria for a disorder 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 increased to 25.0% and probable disorder increased to 12.2%. Of those with no disorder in 2010, 19.8% became new cases of subsyndromal disorder in 2015 and 6.3% became new cases of probable disorder. Of those with subsyndromal disorder in 2010, 42.0% remained subsyndromal, 34.7% no longer had a disorder and 23.4% now met criteria for probable disorder. Of those with probable disorder in 2010, over half (55.0%) remained probable in 2015, 34.9% were now subsyndromal and 10.1% no longer met criteria for disorder.

Those who remained in the Regular ADF reported lower levels of disorder on the 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 1.8% had probable disorder. In 2015, 79.9% had no disorder, and subsyndromal disorder increased slightly to 17.1% and probable disorder to 3.0%. Of those with no disorder in 2010, 86.3% still had no disorder in 2015, 12.3% now had a subsyndromal disorder and 1.4% now had a probable disorder. Of those with subsyndromal disorder in 2010, 39.5% remained in this category, 50.6% no longer had a disorder and 9.9% now had a probable disorder. Of those with a probable disorder in 2010, 17.7% still had a probable disorder in 2015, 57.3% now had a subsyndromal disorder and 25.0% no longer had a disorder.

When comparing Transitioned ADF and 2015 Regular ADF, more 2015 Regular ADF who had no disorder on the PCL-C in 2010 remained disorder free in 2015 (86.3% vs 73.9%), and more 2015 Regular ADF who had probable disorder in 2010 had no disorder in 2015 (50.6% vs 34.7%). Conversely, more Transitioned ADF who had probable disorder in 2010 remained cases of probable disorder in 2015 (55.0% vs 17.7%).

Table 5.6 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on 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	
PCL-C	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	6082	81.1	5061	83.2	860	14.1	161	2.6
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1216	16.2	552	45.4	490	40.3	174	14.3
Probable disorder: Above both screening and epidemiological cut-offs	205	2.7	35	17.1	93	45.4	77	37.6
Total	7503	100.0	5648	75.3	1443	19.2	412	5.5

Note: Unweighted data.

Figure 5.6 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PCL-C in 2010 and 2015 based on self-reported measures

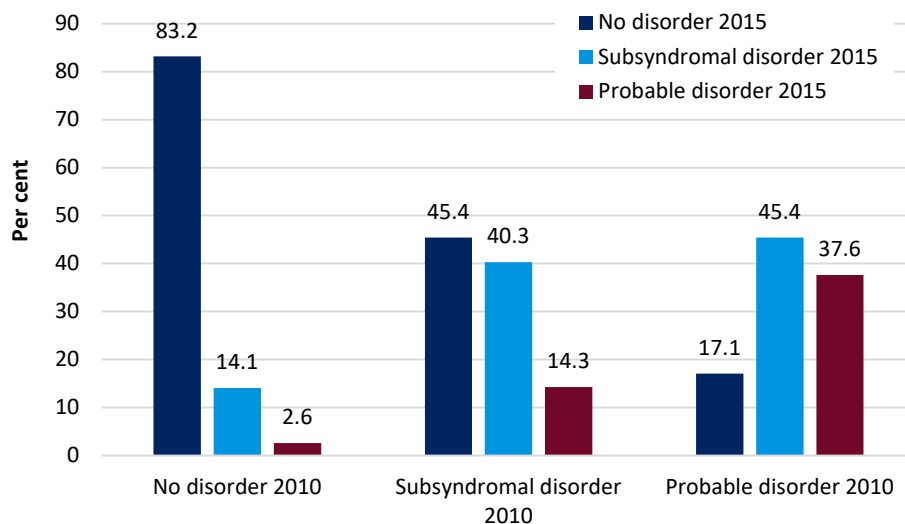


Table 5.7 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PCL-C in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
PCL-C	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	1520	75.0	1124	73.9	301	19.8	95	6.3
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	398	19.6	138	34.7	167	42.0	93	23.4
Probable disorder: Above both screening and epidemiological cut-offs	109	5.4	11	10.1	38	34.9	60	55.0
Total	2027	100.0	1273	62.8	506	25.0	248	12.2

Note: Unweighted data.

Figure 5.7 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

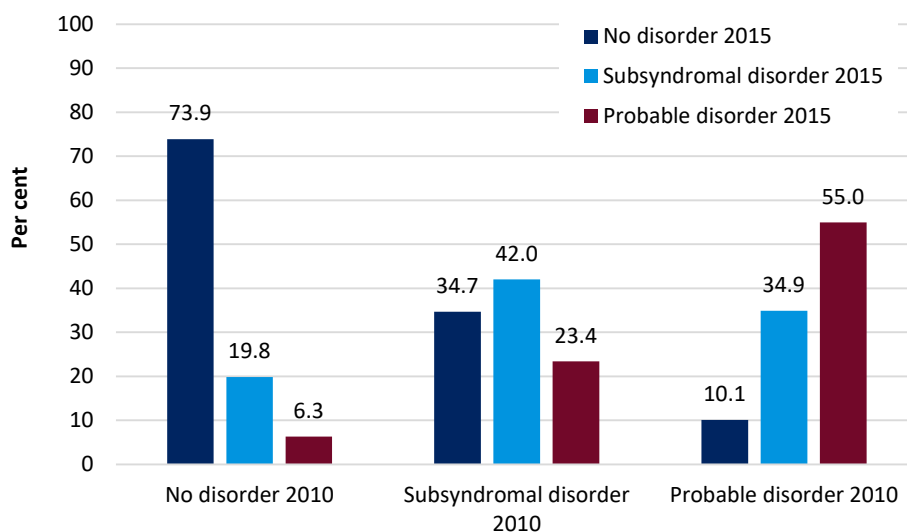
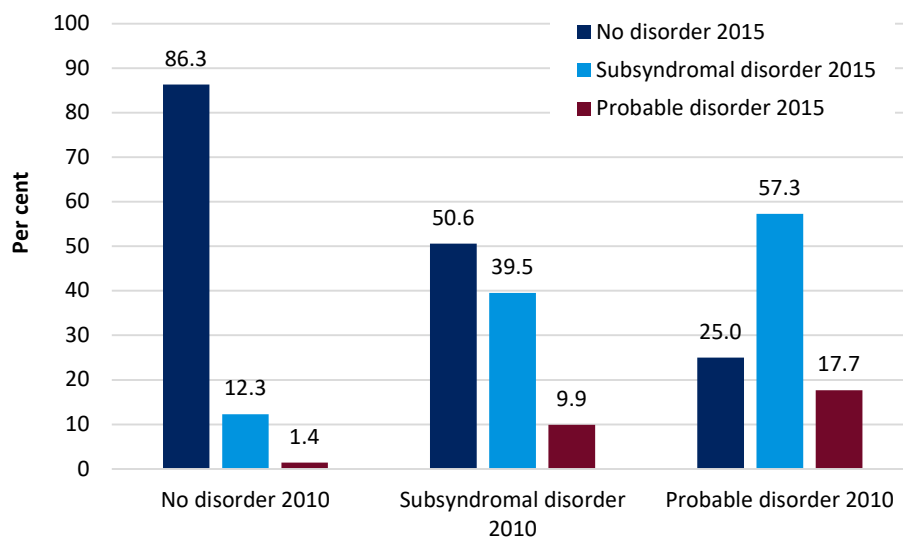


Table 5.8 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PCL-C in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
PCL-C	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	4562	83.3	3937	86.3	559	12.3	66	1.4
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	818	14.9	414	50.6	323	39.5	81	9.9
Probable disorder: Above both screening and epidemiological cut-offs	96	1.8	24	25.0	55	57.3	17	17.7
Total	5476	100.0	4375	79.9	937	17.1	164	3.0

Note: Unweighted data.

Figure 5.8 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



5.3 Alcohol use and problem drinking (AUDIT) in the longitudinal cohort

This section of the report will provide a detailed summary of the pattern of self-reported alcohol use and problem drinking reported by the longitudinal cohort across two time points: the 2010 MHPWS assessment, and the 2015 Transition and Wellbeing Research Programme assessment.

The Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993) is a brief self-report instrument that is widely used in epidemiological and clinical practice for defining at-risk patterns of drinking. It was developed by the World Health Organization for the primary care setting after an extensive six-nation validation trial that included Australia (Babor et al., 2001).

The AUDIT examines the quantity and frequency of alcohol consumption, possible symptoms of dependence, and the reactions or problems related to alcohol. The first eight questions use a five-item continuous scale (scored 0 to 4), while the last two questions use a three-item scale (scored 0, 2 or 4). A final score is reached by summing across all 10 questions.

The AUDIT has been utilised by the ADF as an educational, epidemiological and clinical tool since the start of the ADF Mental Health Strategy. It was officially recognised as a tool to 'identify people whose drinking may pose a risk to their health, or who are already experiencing alcohol-related problems, including dependence' in ADF Health Bulletin Number 15/2003 (Department of Defence, 2003). It has been part of the Post-Operational Psychological Screen process since its introduction in 1999 (Steele & Goodman, 2006), and was used in the 2010 ADF Mental Health Prevalence and Wellbeing Study to examine self-reported alcohol use and problems in the entire ADF.

In addition to mean AUDIT scores, an optimal screening cut-off of 8 and an optimal epidemiological cut-off of 20 was used. These cut-offs were derived from the 2010 ADF Mental Health Prevalence and Wellbeing Study.

Table 5.9 and Figure 5.9 show mean AUDIT scores in 2010 and 2015 for the longitudinal cohort according to whether they had transitioned or remained in the Regular ADF in 2015.

Mean AUDIT scores were the same in both 2010 and 2015 (2010: 5.6 (SE 0.0), 2015: 5.6 (SE 0.1)). Mean scores were higher among those who had transitioned compared to those who remained in the Regular ADF, but more so in 2015 (2010: 5.9 (SE 0.1) vs 5.5 (SE 0.1), 2015: 6.8 (SE 0.1) vs 5.2 (SE 0.1)). Mean scores increased at the second time point for those who had transitioned, but decreased for those who remained in the Regular ADF.

Table 5.9 Mean AUDIT scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

AUDIT	Transitioned ADF n = 2050		Regular ADF n = 5553		Total n = 7603	
	Mean	SE	Mean	SE	Mean	SE
2010 ADF Mental Health Prevalence and Wellbeing Study	5.9	0.1	5.5	0.1	5.6	0.0
2015 Transition and Wellbeing Research Programme	6.8	0.1	5.2	0.1	5.6	0.1

Note: Unweighted data.

Figure 5.9 Mean AUDIT scores in Transitioned ADF and Regular ADF in the longitudinal cohort

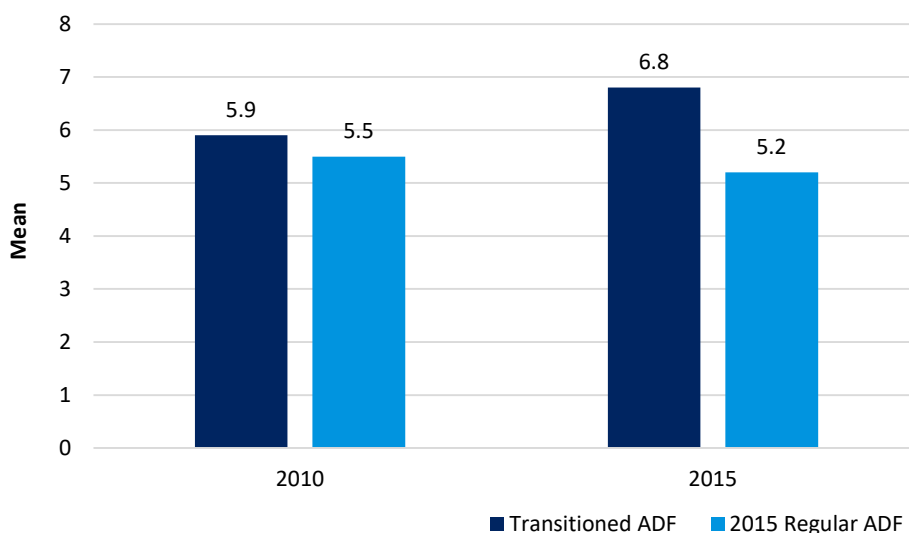


Table 5.10 and Figure 5.10, Table 5.11 and Figure 5.11, and Table 5.12 and Figure 5.12 show the proportion with no disorder, subsyndromal disorder and probable disorder on the AUDIT in 2010 cross-tabulated by the same grouping of AUDIT scores in 2015, among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF.

In 2010, 76.7% had no disorder on the AUDIT, 22.3% had subsyndromal disorder and 1.0% had probable disorder. In 2015, a similar 77.4% had no probable disorder, subsyndromal dropped slightly to 20.3% and probable disorder increased to 2.4%. Of those with no disorder on the AUDIT in 2010, 88.6% still had no disorder in 2015, 10.7% were new cases of subsyndromal disorder and 0.7% were new cases of probable disorder. Of those with subsyndromal disorder in 2010, half (51.7%) remained subsyndromal in 2015, 41.9% had no disorder and 6.4% now had a probable disorder.

Of those with probable disorder in 2010, 35.9% still had probable disorder in 2015, 48.7% now had a subsyndromal disorder and 15.4% no longer had a disorder.

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, and subsyndromal disorder increased slightly to 25.4% and probable disorder to 5.4%. For those with no disorder on the AUDIT, 82.7% had no disorder in 2015, 15.2% now had a subsyndromal disorder and 2.1% now had a probable disorder. Of those with a subsyndromal disorder in 2010, 55.9% remained subsyndromal, 32.2% no longer had a disorder and 11.9% now had a probable disorder. There were 48.8% of the sample who were probable cases of disorder at both time points, and 43.9% went from being a probable case to a subsyndromal case.

Those who remained in the Regular ADF reported lower levels of disorder on the AUDIT in 2010 and 2015 compared to those who had transitioned. In 2010, 77.5% of those remaining in the Regular ADF did not meet criteria for disorder on the AUDIT in 2010, 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%, and those meeting criteria for subsyndromal disorder dropped slightly to 18.4% and increased slightly for probable disorder to 1.2%. The majority of those not meeting disorder criteria in 2010 remained in this category in 2015 (90.6%), with only 9.2% becoming new cases of subsyndromal disorder and 0.2% becoming probable disorder cases. Of those who were subsyndromal in 2010, half (50.0%) remained subsyndromal, 45.8% no longer met criteria for a disorder and 4.2% became probable cases on the AUDIT. Of those with probable disorder in 2010, 21.6% remained in this category in 2015, 54.1% became subsyndromal and 23.4% no longer met criteria.

When comparing Transitioned ADF and 2015 Regular ADF, more 2015 Regular ADF who had probable disorder on the AUDIT in 2010 had no disorder in 2015 (24.3% vs 7.3%). Conversely, more Transitioned ADF who had probable disorder in 2010 remained cases of probable disorder in 2015 (48.8% vs 21.6%).

Table 5.10 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT 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	
AUDIT	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	5828	76.7	5161	88.6	625	10.7	42	0.7
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1697	22.3	711	41.9	877	51.7	109	6.4
Probable disorder: Above both screening and epidemiological cut-offs	78	1.0	12	15.4	38	48.7	28	35.9
Total	7603	100.0	5884	77.4	1540	20.3	179	2.4

Note: Unweighted data.

Figure 5.10 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT in 2010 and 2015 based on self-reported measures

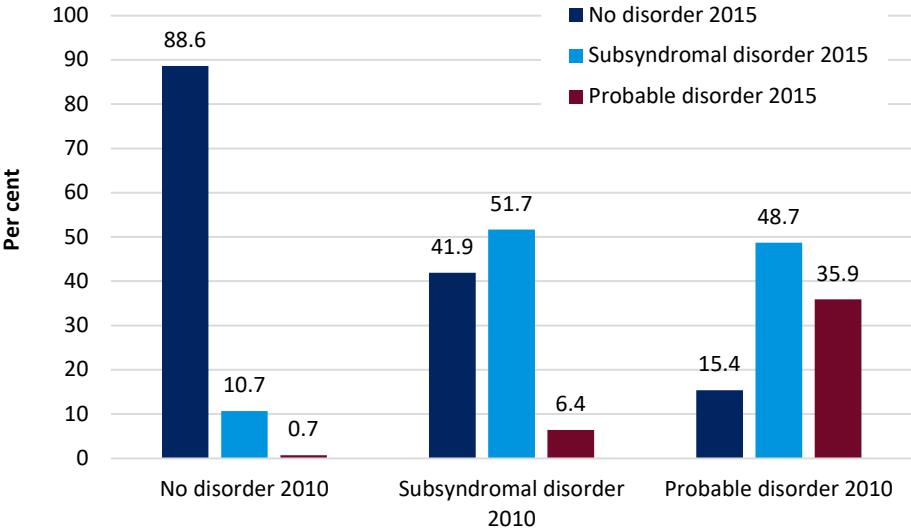


Table 5.11 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
AUDIT	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	1522	74.2	1259	82.7	231	15.2	32	2.1
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	487	23.8	157	32.2	272	55.9	58	11.9
Probable disorder: Above both screening and epidemiological cut-offs	41	2.0	– [#]	–	18	43.9	20	48.8
Total	2050	100.0	1419	69.2	521	25.4	110	5.4

[#] Cell size too small to be reported.
Note: Unweighted data.

Figure 5.11 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

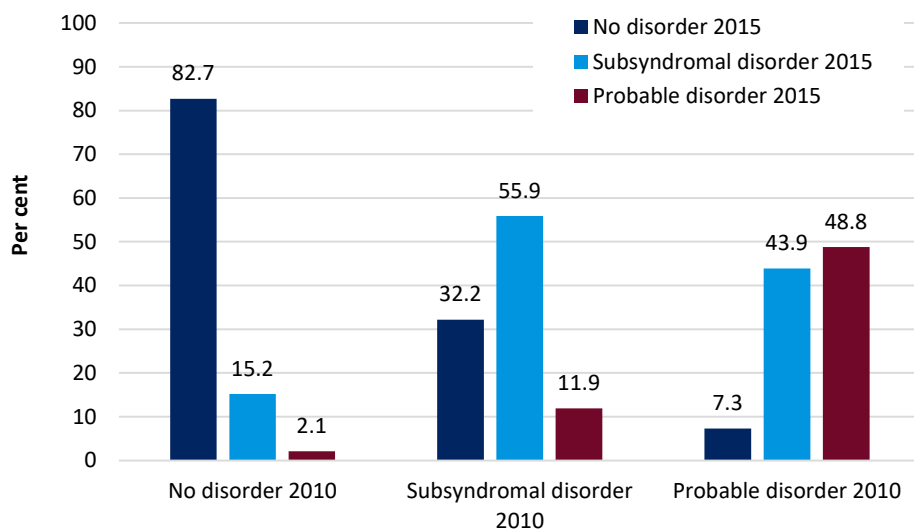
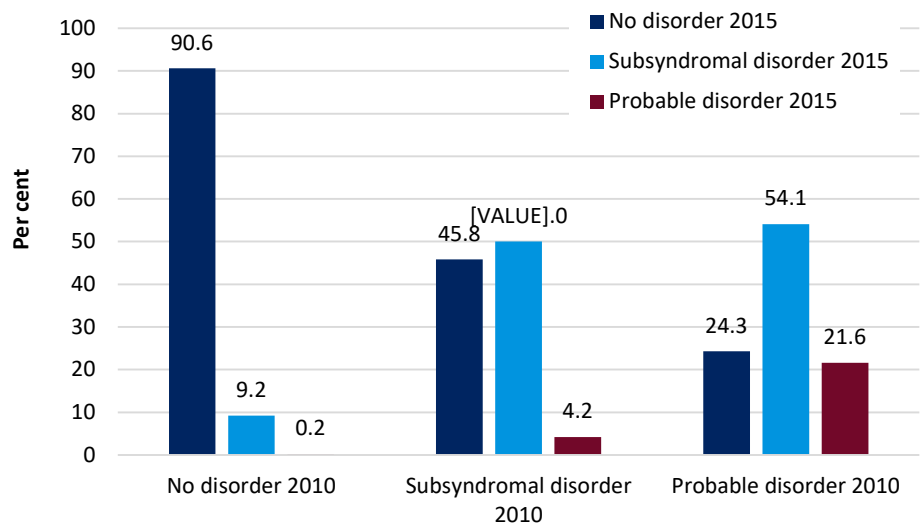


Table 5.12 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on AUDIT in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
AUDIT	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	4306	77.5	3902	90.6	394	9.2	10	0.2
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1210	21.8	554	45.8	605	50.0	51	4.2
Probable disorder: Above both screening and epidemiological cut-offs	37	0.7	9	24.3	20	54.1	8	21.6
Total	5553	100.0	4465	80.4	1019	18.4	69	1.2

Note: Unweighted data.

Figure 5.12 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



5.4 Depressive symptoms (PHQ-9) in the longitudinal cohort

This section looks at self-reported depressive symptomatology reported by the longitudinal cohort across two time points: the 2010 MHPWS assessment, and the 2015 Transition and Wellbeing Research Programme assessment.

The nine items forming the depression module of the Patient Health Questionnaire 9-item scale (PHQ-9) were designed to correspond with the nine criteria used to form a diagnosis of *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) depressive disorder (Kroenke et al., 2001). Participants rated the severity of each symptom item over the past two weeks on a 4-point (i.e. 0 to 3) Likert scale. Items were then summed to generate a continuous measure of depressive symptoms (with possible scores ranging from 0 to 27). The PHQ-9 is widely used and has shown strong psychometric properties, including high diagnostic validity, internal consistency, and test–retest reliability (Gilbody, Richards, Brealey & Hewitt, 2007; Kroenke et al., 2001; Manea, Gilbody & McMillan, 2012; Wittkamp, Naeije, Schene, Huyser & van Weert, 2007).

In addition to mean PHQ-9 scores, two sets of cut-off values derived from the 2010 ADF Mental Health Prevalence and Wellbeing Study were used in this section of the report: an optimal epidemiological cut-off of 18 and an optimal screening cut-off of 6.

The optimal screening cut-off is the value that maximises the sum of the sensitivity and specificity (the proportion of those with and without an affective disorder who are correctly classified) and can be used to identify individuals who might need care, while the epidemiological cut-off is much more stringent and is therefore used as an indicator of probable disorder.

Table 5.13 and Figure 5.13 show mean PHQ-9 scores in 2010 and 2015 for the longitudinal cohort according to whether they had transitioned or remained in the Regular ADF in 2015.

Mean PHQ-9 scores were 3.1 (SE 0.0) in 2010, and increased to 5.3 (SE 0.1) in 2015. Those who had transitioned reported higher mean scores than those who remained in the Regular ADF at both time points, but this difference was greater in 2015 (2010: 3.9 (SE 0.1) vs 2.8 (SE 0.0), 2015: 6.9 (SE 0.2) vs 4.7 (SE 0.1)). Scores increased slightly more between 2010 and 2015 for those who transitioned compared to those who remained in the Regular ADF.

Table 5.13 Mean PHQ-9 scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

PHQ-9	Transitioned ADF n = 5607		2015 Regular ADF n = 2105		Total n = 7712	
	Mean	SE	Mean	SE	Mean	SE
2010 ADF Mental Health Prevalence and Wellbeing Study	3.9	0.1	2.8	0.0	3.1	0.0
2015 Transition and Wellbeing Research Programme	6.9	0.2	4.7	0.1	5.3	0.1

Note: Unweighted data.

Figure 5.13 Mean PHQ-9 scores in Transitioned ADF and Regular ADF in the longitudinal cohort

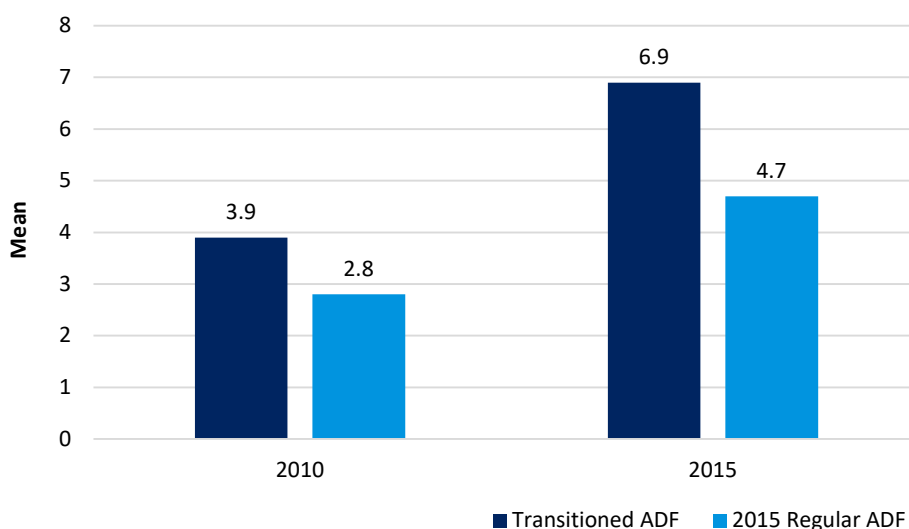


Table 5.14 and Figure 5.14, Table 5.15 and Figure 5.15, and Table 5.16 and Figure 5.16 show the proportion of those with no disorder, subsyndromal disorder and probable disorder on the PHQ-9 in 2010 cross-tabulated by the same grouping of PHQ-9 scores in 2015 among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

In 2010, 80.4% of the sample did not have a disorder on the PHQ-9, 18.1% had a subsyndromal disorder and 1.5% had a probable disorder. In 2015, only 63.8% did not have a disorder, with subsyndromal disorder increasing to 30.7% and probable disorder to 5.5%. Of those with no disorder in 2010, 72.3% remained this way in 2015, while 24.8% became new cases of subsyndromal disorder and 3.0% became new cases of probable disorder. Over half of those who had subsyndromal disorder in 2010 also did in 2015 (55.4%), while 30.5% no longer met criteria for disorder on the PHQ-9, and 14.2% were new cases of probable disorder. Of those meeting probable disorder in

2010, 39.5% still had a probable disorder in 2015, 48.2% were subsyndromal and 12.3% had no disorder.

Among those who had transitioned, 73.7% had no disorder on the PHQ-9 in 2010, 23.6% had subsyndromal disorder and 2.7% had probable disorder. In 2015, those with no disorder reduced substantially to 54.9%, and those with subsyndromal disorder increased to 33.6% and probable disorder to 11.5%. Of those with no disorder on the PHQ-9 in 2010, 66.1% also had no disorder in 2015, 27.4% had subsyndromal disorder and 6.4% had probable disorder. There were 51.9% who had subsyndromal disorder at both time points, with 24.9% of subsyndromal in 2010 having no disorder in 2015, and 23.1% having probable disorder. Of those with probable disorder in 2010, 48.2% also met criteria for probable disorder in 2015, 41.1% met criteria for subsyndromal disorder and 10.7% no longer met criteria for disorder.

Those who remained in the Regular ADF reported lower levels of disorder on the PHQ-9 in 2010 and 2015 compared to those who had transitioned. In 2010, 82.9% of those remaining in the Regular ADF had no disorder on the PHQ-9, 16.1% had subsyndromal disorder and 1.0% had probable disorder. In 2015, 67.1% had no disorder on the PHQ-9, and subsyndromal disorder increased to 29.6% and probable disorder to 3.3%. Of those who had no disorder in 2010, 74.3% still had no disorder in 2015, 23.9% were cases of subsyndromal disorder and 1.8% were new cases of probable disorder. Of those who were subsyndromal in 2010, 57.3% remained subsyndromal, 33.5% no longer had a disorder on the PHQ-9, and 9.2% developed a probable disorder. Of those with probable disorder in 2010, 31.0% remained in this group at 2015, 55.2% had subsyndromal disorder and 13.8% no longer had a disorder.

When comparing Transitioned ADF and 2015 Regular ADF, more 2015 Regular ADF who had no disorder on the PHQ-9 in 2010 remained disorder free in 2015 (74.3% vs 66.1%). Conversely, more Transitioned ADF who had probable disorder in 2010 remained cases of probable disorder in 2015 (48.2% vs 31.0%).

Table 5.14 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 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	
PHQ-9	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	6200	80.4	4481	72.3	1536	24.8	183	3.0
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1398	18.1	426	30.5	774	55.4	198	14.2
Probable disorder: Above both screening and epidemiological cut-offs	114	1.5	14	12.3	55	48.2	45	39.5
Total	7712	100.0	4921	63.8	2365	30.7	426	5.5

Note: Unweighted data.

Figure 5.14 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 in 2010 and 2015 based on self-reported measures

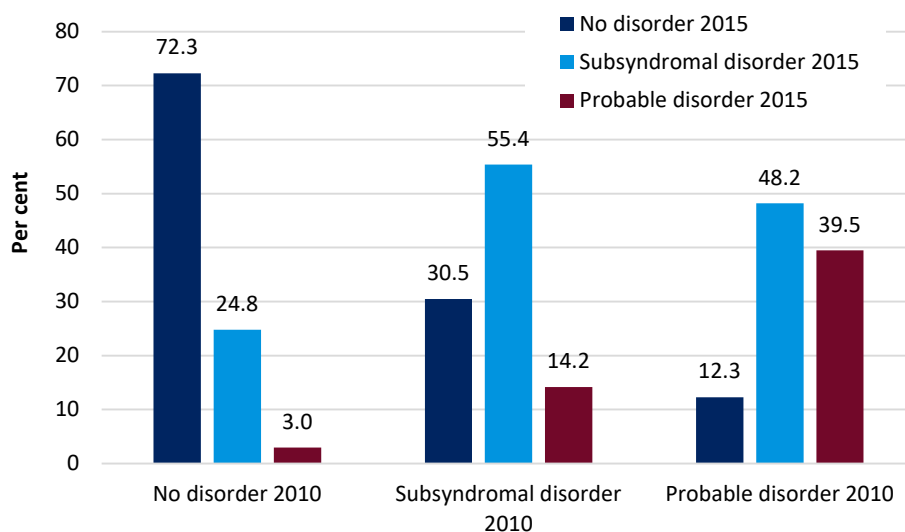


Table 5.15 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
PHQ-9	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	1552	73.7	1026	66.1	426	27.4	100	6.4
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	497	23.6	124	24.9	258	51.9	115	23.1
Probable disorder: Above both screening and epidemiological cut-offs	56	2.7	6	10.7	23	41.1	27	48.2
Total	2105	100.0	1156	54.9	707	33.6	242	11.5

Note: Unweighted data.

Figure 5.15 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

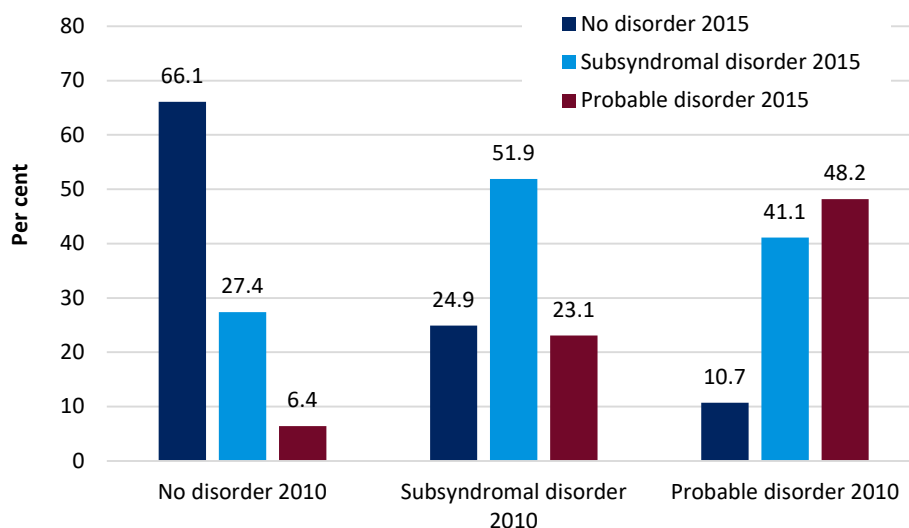
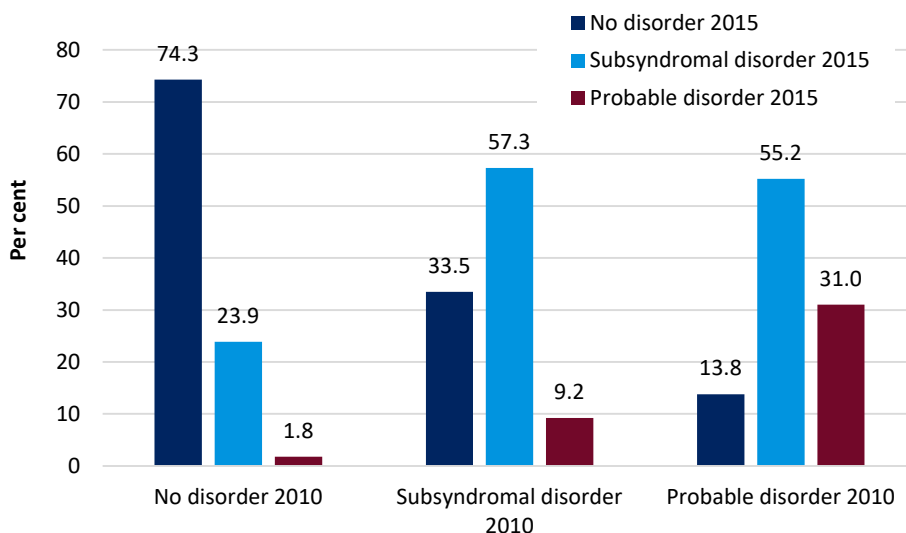


Table 5.16 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on PHQ-9 in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme					
			No disorder		Subsyndromal disorder		Probable disorder	
PHQ-9	n	%	n	%	n	%	n	%
No disorder: Below both screening and epidemiological cut-offs	4648	82.9	3455	74.3	1110	23.9	83	1.8
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	901	16.1	302	33.5	516	57.3	83	9.2
Probable disorder: Above both screening and epidemiological cut-offs	58	1.0	8	13.8	32	55.2	18	31.0
Total	5607	100.0	3765	67.1	1658	29.6	184	3.3

Note: Unweighted data.

Figure 5.16 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



5.5 Suicidal ideation, plans and attempts in the longitudinal cohort

Participants were asked four questions about suicidal ideation, plans and attempts:

- **Suicidal ideation Q1:** In the last 12 months, have you ever felt that your life was not worth living?
- **Suicidal ideation Q2:** In the last 12 months, have you ever felt so low that you thought about committing suicide?
- **Suicide plan:** In the last 12 months, have you made a suicide plan?
- **Suicide attempt:** In the last 12 months, have you attempted suicide?

Participants indicated whether they had experienced any of these items in the last 12 months. Proportions of responses to these items are presented below. Additionally, a dichotomous variable was created indicating whether the participant reported any suicidality item or whether they reported no suicidality items.

Table 5.17 and Figure 5.17 show the frequency of scores on the four suicide items in 2010 and 2015 for the longitudinal cohort according to whether they had transitioned or remained in the Regular ADF in 2015.

There were 8.2% of respondents who reported they felt their life was not worth living in 2010, and this almost doubled to 15.8% in 2015. This was the most reported suicidality item. This was reported in higher levels by those who had transitioned compared to those who remained in the Regular ADF at both time points, and those who had transitioned showed a much greater increase between time points (2010: 11.3% vs 7.0%, 2015: 26.2% vs 11.9%).

The next highest reported suicidality item was feeling so low that the respondent thought about committing suicide. This was reported by 4.7% of participants in 2010, which increased to 10.6% in 2015. Again, those who had transitioned reported higher levels than those who remained in the Regular ADF, with this difference larger in 2015 as the increase was greater among those who had transitioned (2010: 6.9% vs 3.9%, 2015: 18.6% vs 7.6%).

A substantially smaller proportion of participants overall reported making a suicide plan. In 2010, this was 1.1%, which increased to 3.4% in 2015. Those who had transitioned reported higher rates than those who remained in the Regular ADF at both time points, and their rates increased much more between 2010 and 2015 than those who remained in the Regular ADF (2010: 1.9% vs 0.8%, 2015: 7.2% vs 2.0%).

The least reported suicidality item was attempting suicide. This was reported by only 0.4% of the cohort in 2010 and 0.7% in 2015. Those who had transitioned and those who remained in the Regular ADF showed similar rates in 2010; however, those who had transitioned had much higher rates in 2015 (2010: 0.5% vs 0.4%, 2015: 1.3% vs 0.5%). This resulted from the reported rates of attempting suicide staying relatively stable for those who remained in the Regular ADF but more than doubling for those who transitioned.

Table 5.17 Suicidal ideation, plans and attempts in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

Suicidal ideation, plans and attempts	2010 ADF Mental Health Prevalence and Wellbeing Study						2015 Transition and Wellbeing Research Programme					
	Transitioned ADF n = 2138		2015 Regular ADF n = 5681		Total n = 7819		Transitioned ADF n = 2138		2015 Regular ADF n = 5681		Total n = 7819	
	n	%	n	%	n	%	n	%	n	%	n	%
Felt life not worth living	241	11.3	397	7.0	638	8.2	561	26.2	674	11.9	1235	15.8
Felt so low thought about committing suicide	148	6.9	223	3.9	371	4.7	397	18.6	429	7.6	826	10.6
Made a suicide plan	40	1.9	48	0.8	88	1.1	154	7.2	114	2.0	268	3.4
Attempted suicide	10	0.5	20	0.4	30	0.4	28	1.3	26	0.5	54	0.7

Note: Unweighted data.

Figure 5.17 Suicidal ideation, plans and attempts in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

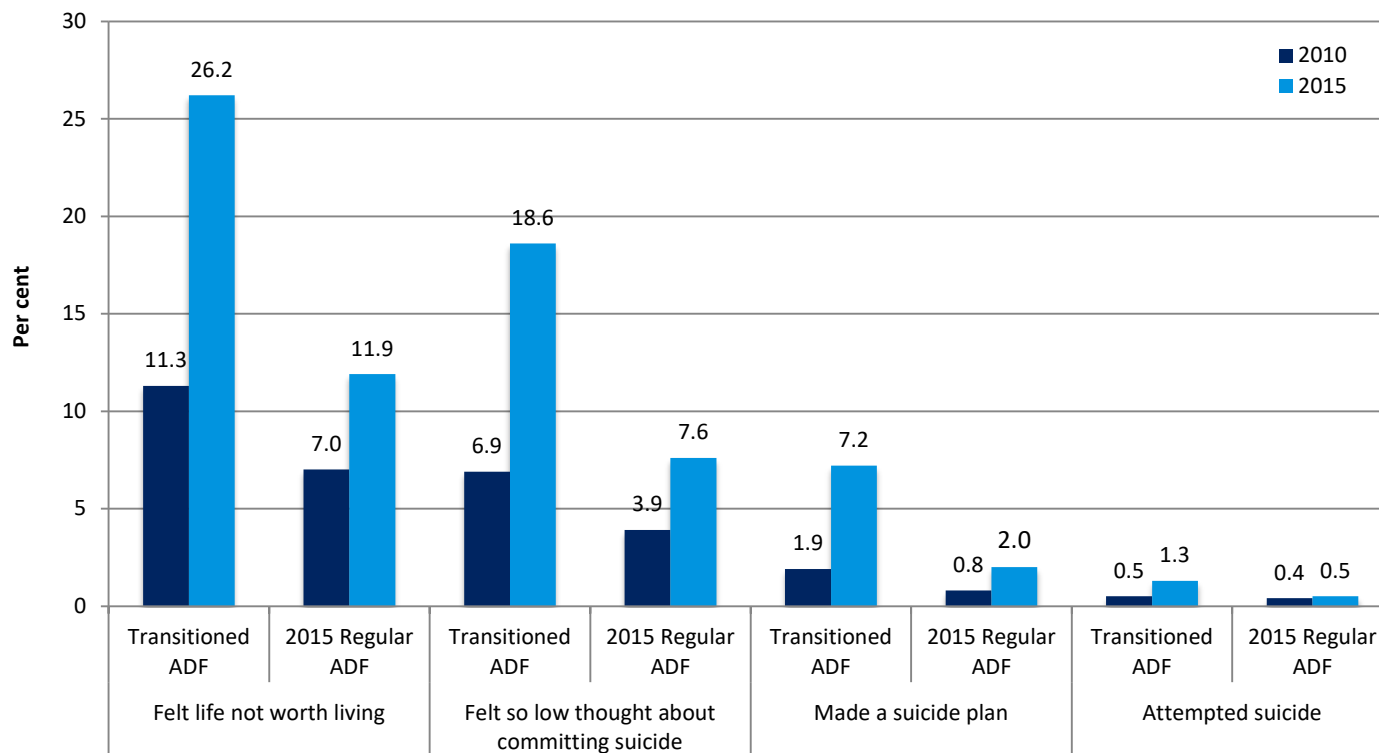


Table 5.18 and Figure 5.18, Table 5.19 and Figure 5.19, and Table 5.20 and Figure 5.20 show the proportion of those reporting any suicidality in 2010 cross-tabulated by the same grouping of scores in 2015, among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

In 2010, 8.8% of the cohort reported any suicidality, and this increased to 16.7% in 2015. Of those who reported no suicidality in 2010, 13.0% were new cases of suicidality. Of those who reported any suicidality in 2010, 55.2% also reported this in 2015.

Among those who had transitioned, 12.3% reported any suicidality in 2010, which more than doubled to 27.4% in 2015. There were 21.7% who reported suicidality in 2015, who did not in 2010. Of those reporting suicidality in 2010, 68.1% were still suicidal in 2015, and 31.9% no longer reported suicidality.

Table 5.18 Proportion of entire longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No suicidality		Any suicidality	
Suicide	n	%	n	%	n	%
No suicidality	7132	91.2	6203	87.0	929	13.0
Any suicidality	687	8.8	308	44.8	379	55.2
Total	7819	100.0	6511	83.3	1308	16.7

Note: Unweighted data.

Figure 5.18 Proportion of entire longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures

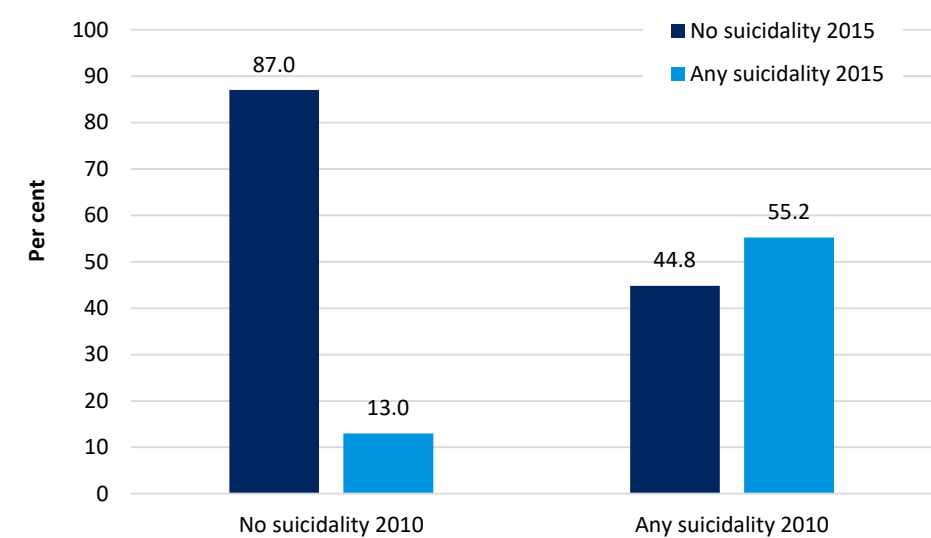
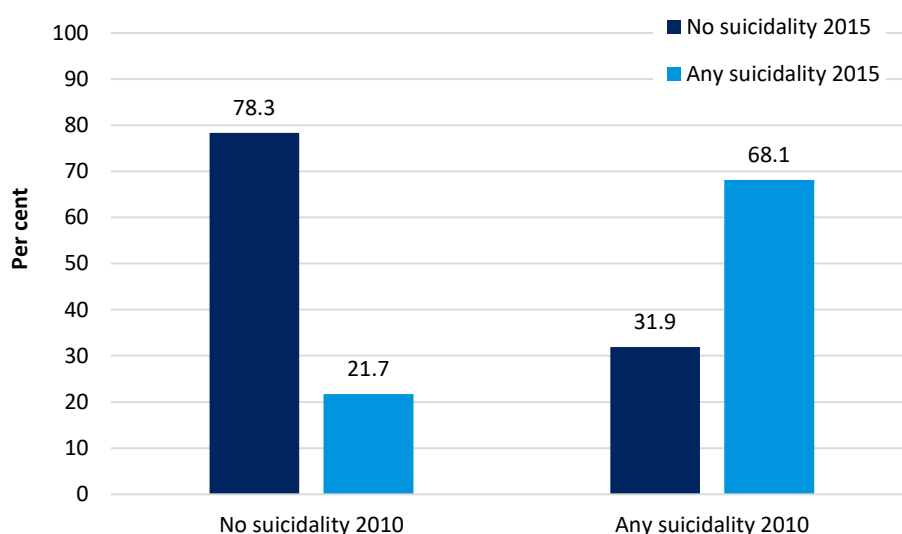


Table 5.19 Proportion of Transitioned ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No suicidality		Any suicidality	
Suicide	n	%	n	%	n	%
No suicidality	1875	87.7	1468	78.3	407	21.7
Any suicidality	263	12.3	84	31.9	179	68.1
Total	2138	100.0	1552	72.6	586	27.4

Note: Unweighted data.

Figure 5.19 Proportion of Transitioned ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures



Among those who remained in the Regular ADF, 7.5% reported suicidality in 2010 and 12.7% in 2015. Among those reporting no suicidality in 2010, 9.9% were new cases in 2015. No suicidality was reported by 52.8% of those who reported it in 2010, and 47.2% reported experiencing suicidality again in 2015.

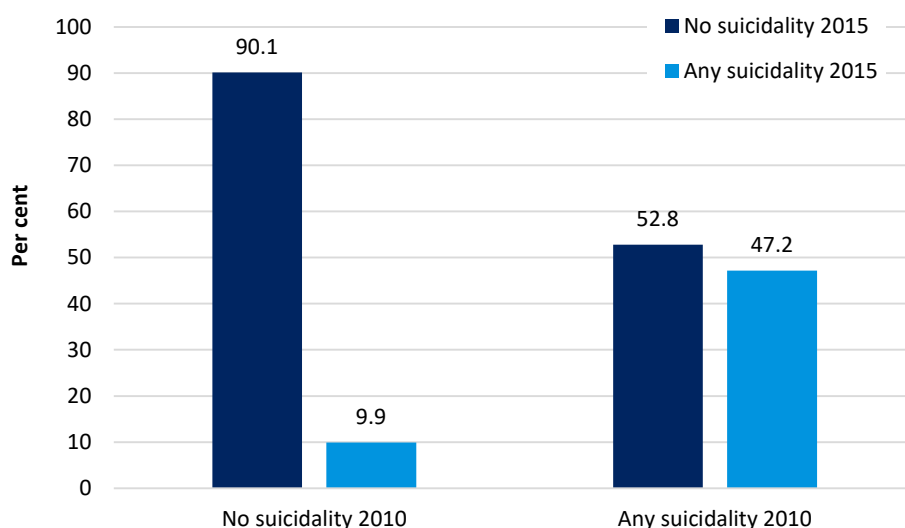
When comparing Transitioned ADF and 2015 Regular ADF, more 2015 Regular ADF who reported no suicidality in 2010 also reported no suicidality in 2015 (90.1% vs 78.3%), and more Transitioned ADF who reported suicidality in 2010 also reported it in 2015 (68.1% vs 47.2%).

Table 5.20 Proportion of 2015 Regular ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No suicidality		Any suicidality	
Suicide	n	%	n	%	n	%
No suicidality	5257	92.5	4735	90.1	522	9.9
Any suicidality	424	7.5	224	52.8	200	47.2
Total	5681	100.0	4959	87.3	722	12.7

Note: Unweighted data.

Figure 5.20 Proportion of 2015 Regular ADF in the longitudinal cohort with any suicidality in 2010 and 2015 based on self-reported measures



5.6 Anger symptoms (DAR-5) in the longitudinal cohort

This section of the report looks at problem anger reported by the longitudinal cohort across two time points: the 2010 MHPWS assessment, and the 2015 Transition and Wellbeing Research Programme assessment.

The Dimensions of Anger Reactions 5-item scale (DAR-5) (Forbes et al., 2004) assesses anger frequency, intensity, duration, and anger's perceived negative impact on social relationships, as rated over the past four weeks. Items are summed to create a total score (range 5 to 25), with higher scores indicating a higher frequency of anger. This scale has been used in Australian Vietnam veterans, and US Afghanistan and Iraq veterans, and shows strong unidimensionality, and high levels of internal consistency and criterion validity (Forbes et al., 2004).

Respondents were instructed to rate the amount of time they had experienced each of the five symptoms of anger over the last four weeks on a 5-point scale ranging from 1 ('none of the time') to 5 ('all of the time'). In addition to a total score, mean scores, and the proportion of individuals who scored above and below the problematic anger cut-off score of 12, are presented.

Table 5.21 and Figure 5.21 show mean scores on the DAR-5 in 2010 and 2015 for the longitudinal cohort, according to whether they had transitioned or remained in the Regular ADF in 2015.

Mean scores on the DAR-5 were 7.2 (SE 0.0) in 2010, and increased to 8.0 (SE 0.0) in 2015. Mean anger scores were higher among those who had transitioned compared to those who remained in the Regular ADF at both time points, and scores increased more for Transitioned ADF between 2010 and 2015 (2010: 7.7% vs 7.0%, 2015: 9.1% vs 7.7%).

Table 5.21 Mean DAR-5 scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

DAR-5	Transitioned ADF n = 5616		2015 Regular ADF n = 2110		Total n = 7726	
	Mean	SE	Mean	SE	Mean	SE
2010 ADF Mental Health Prevalence and Wellbeing Study	7.7	0.1	7.0	0.0	7.2	0.0
2015 Transition and Wellbeing Research Programme	9.1	0.1	7.7	0.0	8.0	0.0

Note: Unweighted data.

Figure 5.21 Mean DAR-5 scores in Transitioned ADF and 2015 Regular ADF in the longitudinal cohort

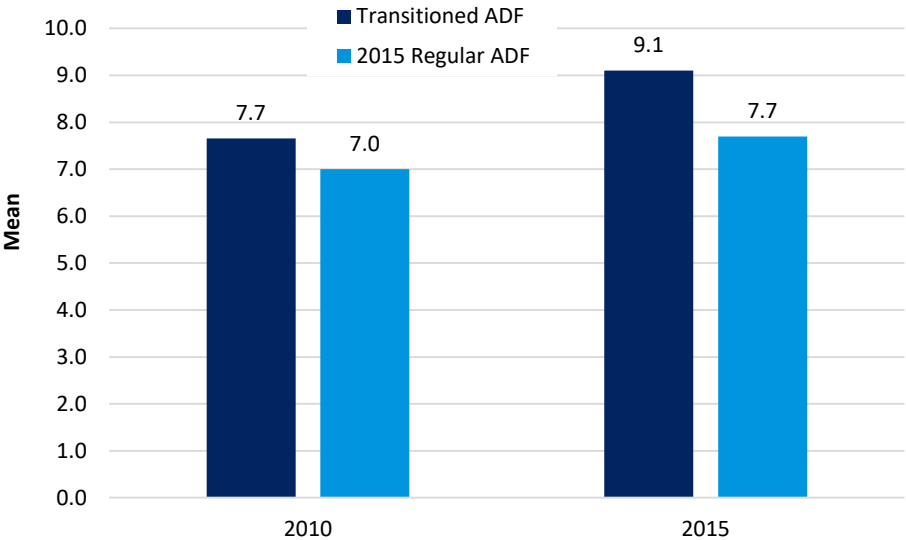


Table 5.22 and Figure 5.22, Table 5.23 and Figure 5.23, and Table 5.24 and Figure 5.24 show the proportion of those reporting problem anger on the DAR-5 in 2010 cross-tabulated by the same grouping of DAR-5 problem anger scores in 2015 among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

Problem anger was defined as total scores more than or equal to 12 on the DAR-5. Problem anger increased from 2010 to 2015, with 8.6% of participants reporting problem anger in 2010 and 16.2% in 2015. Of those reporting no problem anger in 2010, 12.9% became new problem anger cases in 2015. Of the participants who were problem anger cases in 2010, just under half (48.2%) no longer met criteria to be a case in 2015.

Among those who had transitioned, 12.0% reported problem anger in 2010, increasing to 24.8% in 2015. A substantial 19.9% of those reporting no problem anger in 2010 became new cases in 2015. The majority of problem anger cases in 2010 were still cases in 2015 (61.3%), with only 38.7% moving below the cut-off in 2015.

Among those who remained in the Regular ADF, there was a lower proportion of problem anger cases at both time points than those who had transitioned. In 2010, 7.3% were problem anger cases, and this increased to 13.0% in 2015. Of those reporting no problem anger in 2010, only 10.4% became new cases in 2015. Of those reporting problem anger in 2010, over half (54.0%) no longer met criteria in 2015.

When comparing Transitioned ADF and 2015 Regular ADF, more Transitioned ADF who met criteria for DAR-5 problem anger in 2010 did again in 2015 (61.3% vs 46.0%).

Table 5.22 Proportion of entire longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No problem anger		Problem anger	
DAR-5	n	%	n	%	n	%
No problem anger	7064	91.4	6155	87.1	909	12.9
Problem anger	662	8.6	319	48.2	343	51.8
Total	7726	100.0	6474	83.8	1252	16.2

Note: Unweighted data.

Figure 5.22 Proportion of entire longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures

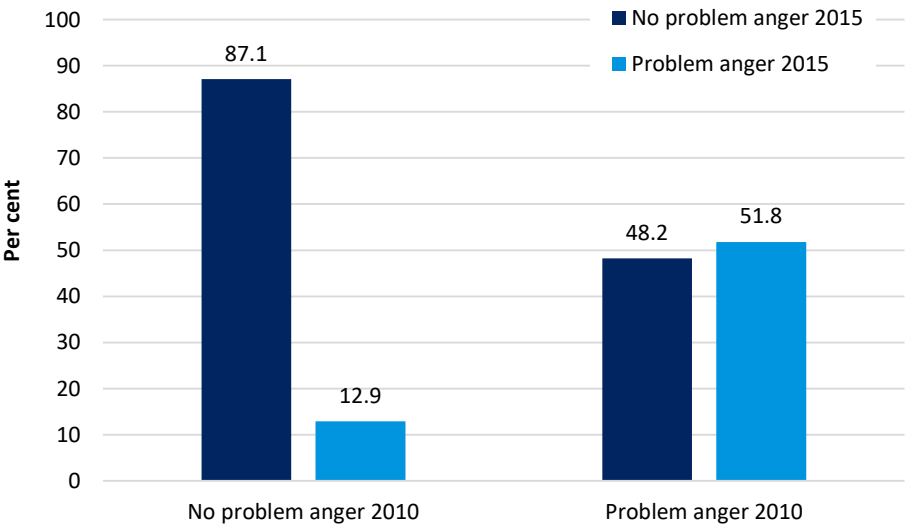


Table 5.23 Proportion of Transitioned ADF in the longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No problem anger		Problem anger	
DAR-5	n	%	n	%	n	%
No problem anger	1857	88.0	1488	80.1	369	19.9
Problem anger	253	12.0	98	38.7	155	61.3
Total	2110	100.0	1586	75.2	524	24.8

Note: Unweighted data.

Figure 5.23 Proportion of Transitioned ADF in the longitudinal cohort with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures

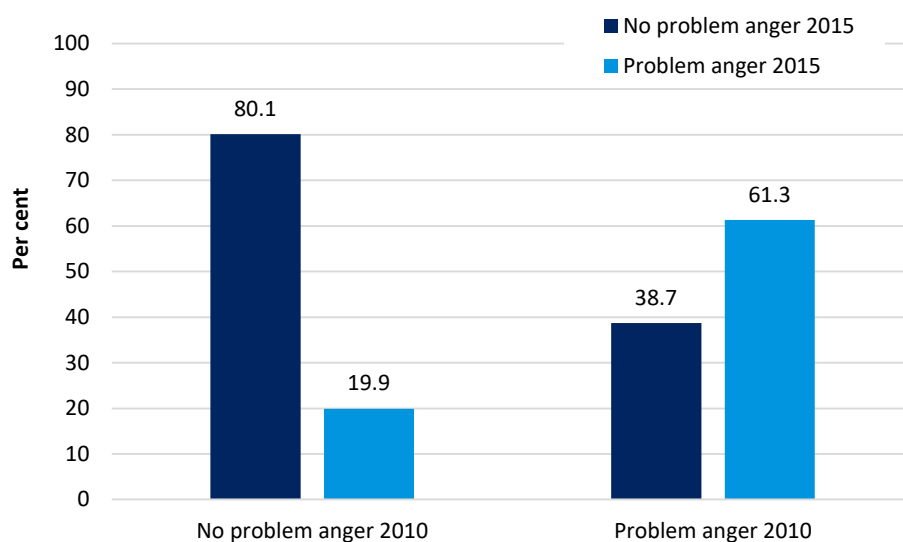
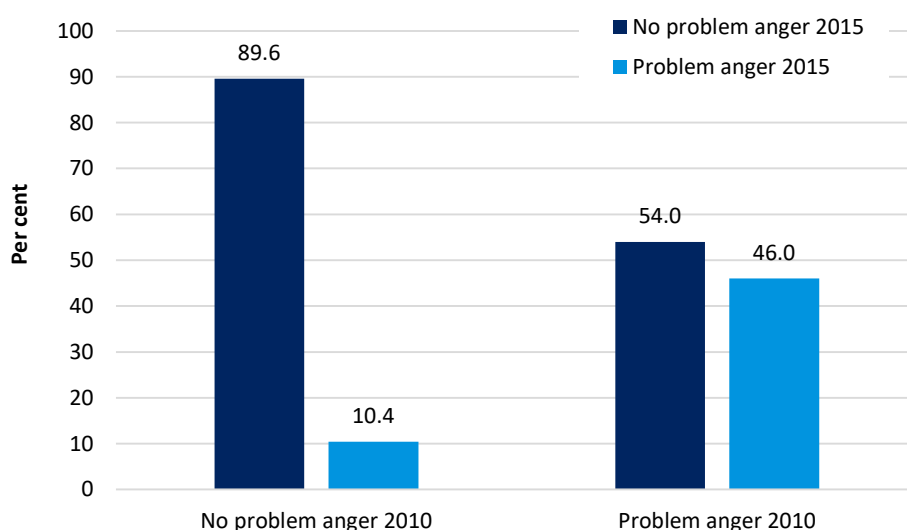


Table 5.24 Proportion of **2015 Regular ADF in the longitudinal cohort** with DAR-5 problem anger (total ≥ 12) in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			No problem anger		Problem anger	
DAR-5	n	%	n	%	n	%
No problem anger	5207	92.7	4667	89.6	540	10.4
Problem anger	409	7.3	221	54.0	188	46.0
Total	5616	100.0	4888	87.0	728	13.0

Note: Unweighted data.

Figure 5.24 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



5.7 Physical violence in the longitudinal cohort

Participants were asked two items about physical violence: how often in the last month they got into a fight with someone and hit the person, and how often in the last month they threatened someone with physical violence. Respondents were instructed to rate the number of times they had experienced these events on a 5-point scale ranging from 1 ('none of the time') to 5 ('five or more times'). These scores were collapsed into a two-level variable indicating 'none of the time' or 'one or more times'. The proportion of individuals responding in these categories is presented.

5.7.1 Got into a fight and hit someone

Table 5.25 and Figure 5.25, Table 5.26 and Figure 5.26, and Table 5.27 and Figure 5.27 show the proportion of those reporting that they ‘got into a fight and hit someone in the last month’ in 2010 cross-tabulated by the same grouping of scores in 2015 among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

In 2010, 1.6% of the cohort reported getting into a fight and hitting someone one or more times in the last month; this decreased to 1.3% in 2015. Of those reporting that they had not gotten into a fight and hit someone in the last month in 2010, only 1.1% reported that they had done this in 2015. The majority of those who answered affirmatively in 2010 did not report physical violence in 2015 (89.4%).

Among those who had transitioned, 2.5% of participants reported getting into a fight and hitting someone in the last month one or more times in both 2010 and 2015. Of those reporting no physical violence in 2010, 2.1% became new cases. The majority of cases of physical violence in 2010 were no longer cases in 2015 (83.3%).

Those who remained in the Regular ADF reported lower proportions, with only 1.2% reporting this type of physical violence in 2010, which dropped to 0.9% in 2015. Only 0.8% became new cases of physical violence in 2015, and the majority of those reporting getting into a fight and hitting someone in 2010 reported that they did not in 2015 (94.2%).

When comparing Transitioned ADF and 2015 Regular ADF in the longitudinal cohort, more Transitioned ADF who reported getting into a fight and hitting someone in 2010 also did in 2015. Due to small cell sizes, percentages have not been reported.

Table 5.25 Proportion of entire longitudinal cohort who ‘got into a fight and hit someone in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Got into a fight and hit someone in the last month	n	%	n	%	n	%
Not in the last month	7750	98.4	7661	98.9	89	1.1
One or more times	123	1.6	110	89.4	13	10.6
Total	7873	100.0	7771	98.7	102	1.3

Note: Unweighted data.

Figure 5.25 Proportion of entire longitudinal cohort who ‘got into a fight and hit someone in the last month’ in 2010 and 2015 based on self-reported measures

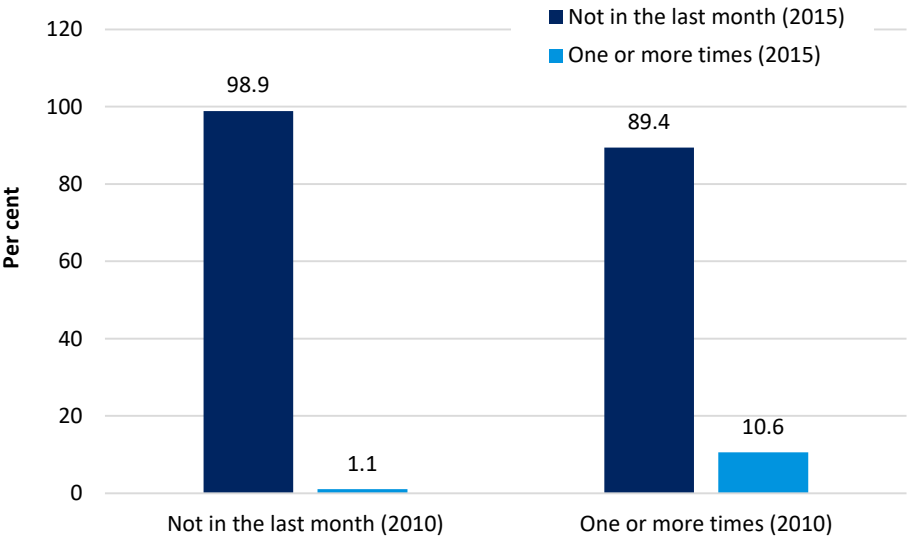


Table 5.26 Proportion of Transitioned ADF in the longitudinal cohort who ‘got into a fight and hit someone in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Got into a fight and hit someone in the last month	n	%	n	%	n	%
Not in the last month	2096	97.5	2052	97.9	44	2.1
One or more times	54	2.5	45	83.3	9	16.7
Total	2150	100.0	2097	97.5	53	2.5

Note: Unweighted data.

Figure 5.26 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

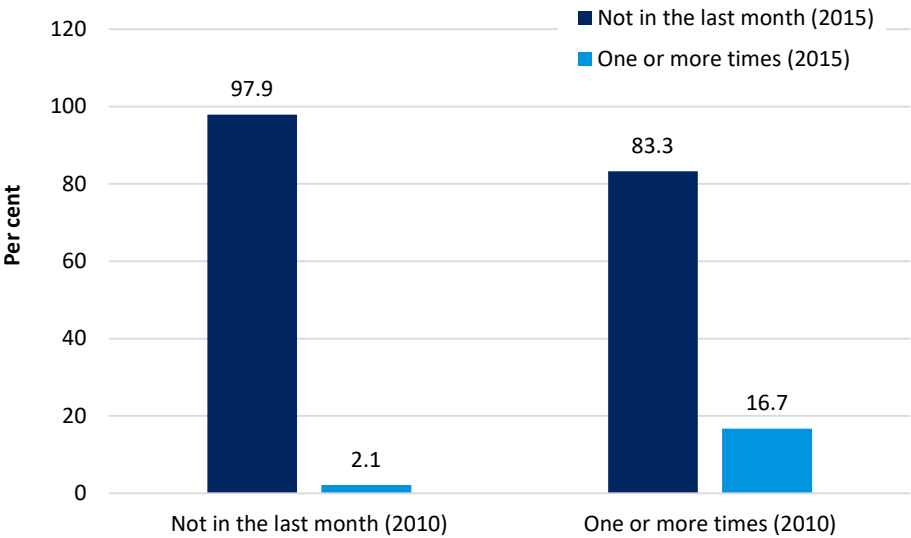


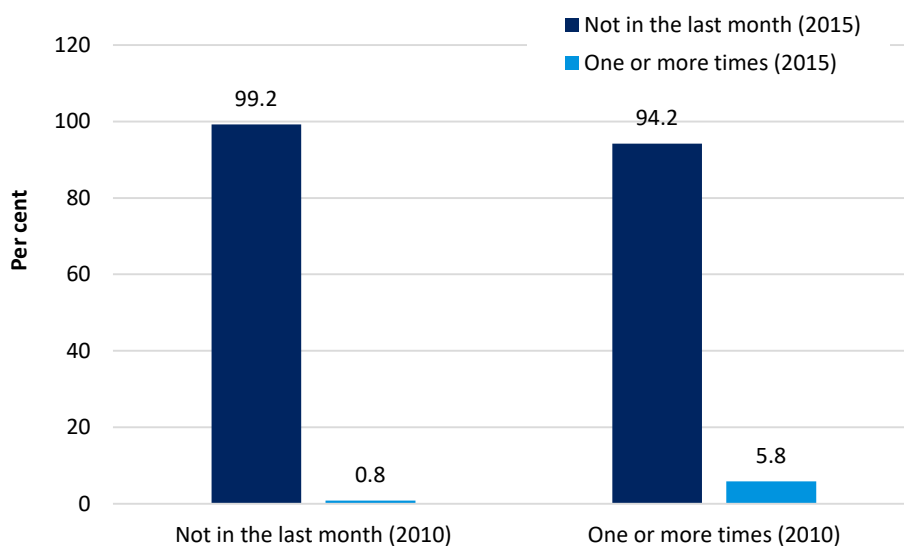
Table 5.27 Proportion of 2015 Regular ADF in the longitudinal cohort who ‘got into a fight and hit someone in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Got into a fight and hit someone in the last month	n	%	n	%	n	%
Not in the last month	5654	98.8	5609	99.2	45	0.8
One or more times	69	1.2	65	94.2	— [#]	—
Total	5723	100.0	5674	99.1	49	0.9

[#] Cell size too small to be reported.

Note: Unweighted data.

Figure 5.27 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



5.7.2 Threatened someone with physical violence

Table 5.28 and Figure 5.28, Table 5.29 and Figure 5.29, and Table 5.30 and Figure 5.30 show the proportion of those reporting that they ‘threatened someone with physical violence in the last month’ in 2010 cross-tabulated by the same grouping of scores in 2015 among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF in 2015.

Similar proportions of the cohort reported threatening someone with physical violence in the last month in 2010 and 2015 (6.5% vs 6.3%). Of those reporting that they had not threatened someone with physical violence in the last month in 2010, 4.7% reported that they had done this in 2015. Almost a third of participants (29.9%) reported this item at both time points, while 70.1% of those who reported this item in 2010 did not report threatening physical violence in 2015.

For those who had transitioned, 9.2% of participants reported threatening physical violence in the last month in 2010, increasing slightly to 11.1% in 2015. There were 7.9% who became new cases in 2015, and 57.1% of those reporting threatening someone with physical violence in 2010 reported that they did not in 2015.

Those who remained in the Regular ADF reported lower proportions, with 5.5% reporting threats of physical violence in 2010, which dropped to 4.5% in 2015. Of those reporting no threats of physical violence in 2010, 3.5% became new cases. There were 78.3% of participants reporting threatening physical violence in 2010 who were no longer cases in 2015, and 21.7% who reported this at both time points.

When comparing Transitioned ADF and 2015 Regular ADF, more Transitioned ADF who reported threats of physical violence in 2010 also did in 2015 (42.9% vs 21.7%).

Table 5.28 Proportion of entire longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Threaten someone with physical violence in the last month	n	%	n	%	n	%
Not in the last month	7333	93.5	6989	95.3	344	4.7
One or more times	509	6.5	357	70.1	152	29.9
Total	7842	100.0	7346	93.7	496	6.3

Note: Unweighted data.

Figure 5.28 Proportion of entire longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures

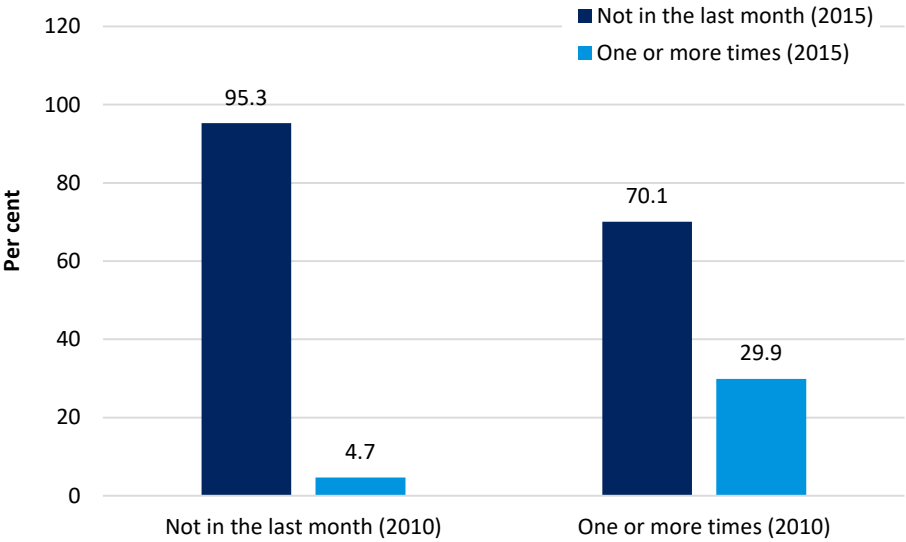


Table 5.29 Proportion of Transitioned ADF in the longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Threaten someone with physical violence in the last month	n	%	n	%	n	%
Not in the last month	1945	90.8	1791	92.1	154	7.9
One or more times	196	9.2	112	57.1	84	42.9
Total	2141	100.0	1903	88.9	238	11.1

Note: Unweighted data.

Figure 5.29 Proportion of Transitioned ADF in the longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures

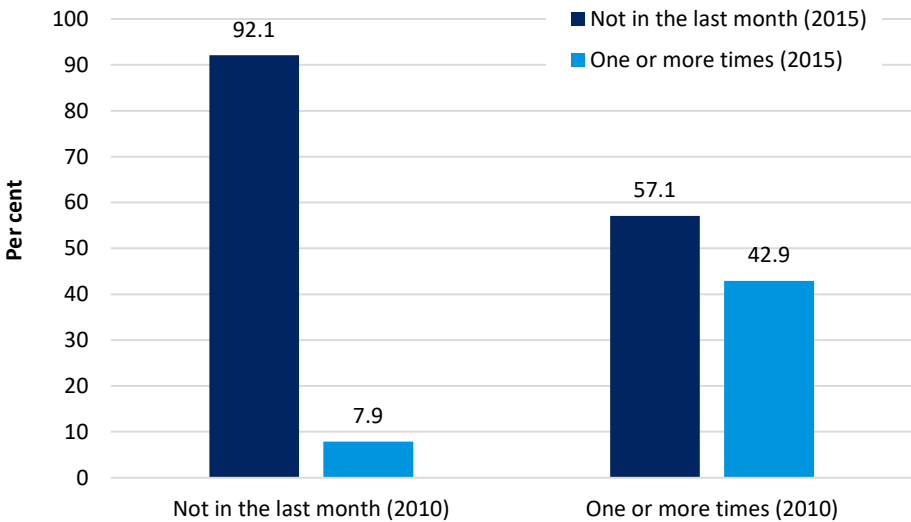
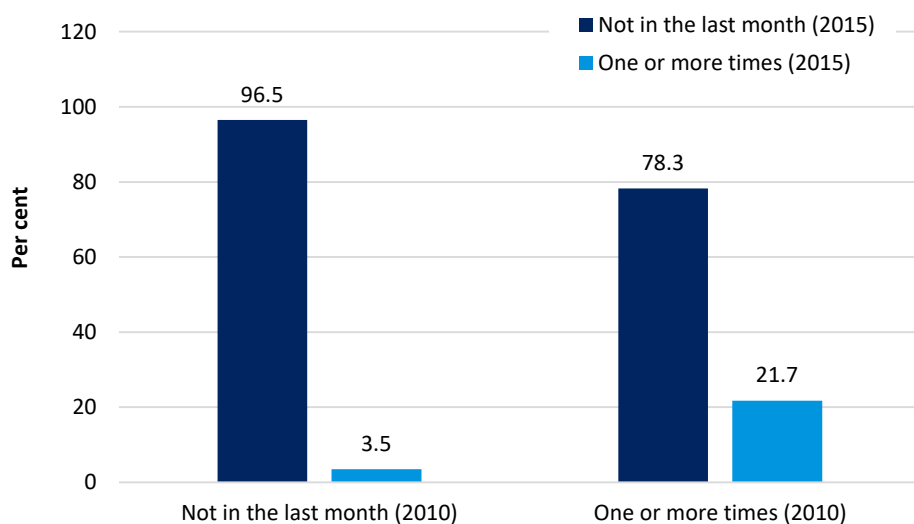


Table 5.30 Proportion of 2015 Regular ADF in the longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures

2010 ADF Mental Health Prevalence and Wellbeing Study			2015 Transition and Wellbeing Research Programme			
			Not in the last month		One or more times	
Threaten someone with physical violence in the last month	n	%	n	%	n	%
Not in the last month	5388	94.5	5198	96.5	190	3.5
One or more times	313	5.5	245	78.3	68	21.7
Total	5701	100.0	5443	95.5	258	4.5

Note: Unweighted data.

Figure 5.30 Proportion of 2015 Regular ADF in the longitudinal cohort who ‘threatened someone with physical violence in the last month’ in 2010 and 2015 based on self-reported measures



6 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.

Refer to the glossary for definitions of key terms used in this chapter.

This chapter examines the longitudinal course of mental symptoms and probable disorder – defined as above the epidemiological cut-off on either the Kessler Psychological Distress 10-item scale (K10) or Posttraumatic Stress Disorder Checklist – civilian version (PCL-C) – in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) population. Analyses were performed on the entire longitudinal cohort (Transitioned and Regular ADF combined), with priority given to time point 1 predictor variables (2010) where possible, except for lifetime trauma and deployment exposures, which were only measured for the entire cohort at time point 2. Separate models were performed for the following three mutually exclusive subsets: those with no disorder in 2010, those who were subsyndromal in 2010, and those who had

probable disorder in 2010. Analyses examined the odds of being subsyndromal or having probable disorder compared to being disorder free in 2015.

The results are reported as odds ratios with 95% confidence intervals as obtained from logistic regression models. A multinomial distribution was applied with a generalised logit link function. Univariate modelling was first performed for all potential predictors. Multivariate modelling started with a fully saturated model, which included all variables with a *p*-value less than 0.20. Variables were systematically removed from the model using the following approach. First, the variable with the largest *p*-value was removed from the model. The reduced model was then compared to the preceding model to determine whether removal of the variable negatively impacted on model fit. This was assessed using scaled deviance (a value close to 1 indicating good fit), Pearson's goodness-of-fit test and the log-likelihood ratio test (G^2). The model odds ratios were also evaluated to determine whether removal of the variable led to substantial changes that might indicate that the variable is an important confounder. Model reduction continued with this approach until only significant variables remained. The analyses were completed using SAS version 9.2 or 9.4 (SAS Institute Inc., Cary, NC, United States).

6.1 Interpreting the odds ratios

Interpretation of the odds ratios is in the following multinomial models. The multinomial model essentially fits two models simultaneously, with each model comparing a separate level to a reference category. In our data, 'No disorder (1)' was the reference category in all models. The resulting models compare the odds of being in the 'Subsyndromal (2)' category relative to the odds of being in the 'No disorder' category; the second compares the odds of being in the 'Probable disorder (3)' category relative to the odds of being in the 'No disorder' category.

6.1.1 Predictors included in the longitudinal cohort model

Time point 1 measures – 2010 ADF Mental Health Prevalence and Wellbeing Study

Demographic factors

- Age (mean)
- Sex (female, male)

Service factors

- Rank (Officer, Non-Commissioned Officer, Other)
- Service (Navy, Army, Air Force)
- Length of service (1 month – 3.9 years, 4 – 7.9 years, 8 – 11.9 years, 12 – 19.9 years, 20+ years)

Relationship status and satisfaction

- In a significant intimate relationship (no, yes)
- Satisfaction with marriage (very dissatisfied/dissatisfied/neither, satisfied/very satisfied)

Suicidality, anger and resilience

- Any 12-month suicidality (no, yes)
- Problematic anger: ≥ 12 on Dimensions of Anger Reactions 5-item scale (DAR-5) (no, yes)
- Resilience: two-item Connor-Davidson Resilience Scale (CD-RISC 2) (mean)

Help seeking (K10 Plus)

- Seen any health professional in last month for feelings of psychological distress (no, yes)

Time point 2 measures – 2015 Transition and Wellbeing Research Programme

Lifetime trauma and deployment exposures

- Number of different lifetime traumatic event types (0–1, 2–3, 4+)
- Number of career traumatic deployment exposures (low, moderate, high)

6.1.2 Outcome variables

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 and PCL-C
- *Subsyndromal disorder*: Above the optimal screening cut-off on either the K10 or PCL-C, but below the optimal epidemiological cut-off on both K10 and PCL-C
- *Probable disorder*: Above the epidemiological cut-off on either the K10 or PCL-C.

A number of predictors were measured as part of the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS), as outlined below.

To assess 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. This was then categorised into 1 month to 3.9 years, 4 to 7.9 years, 8 to 11.9 years, 12 to 19.9 years, and 20+ years.

To ascertain whether participants were in a significant intimate relationship, they were asked, ‘Are you currently in a significant intimate relationship?’ Response options were ‘yes’ or ‘no’.

To assess 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. This was then dichotomised into 'very dissatisfied/dissatisfied/neither' and 'satisfied/very satisfied'.

Twelve-month suicidality and problematic anger have been discussed in detail in Chapter 5.

Resilience was assessed using two questions from the two-item Connor-Davidson Resilience Scale (CD-RISC 2) (Connor & Davidson, 2003). These items asked how often the participants 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'. Scores on these items were summed to create a total resilience score.

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. This was then dichotomised into a yes/no variable indicating whether or not the participant had seen any health professional in the last month for feelings of psychological distress.

Lifetime exposure to traumatic events and traumatic deployment exposures were assessed as part of the 2015 Transition and Wellbeing Research Programme. The measure to assess lifetime exposure to traumatic events was taken from the PTSD module of the Composite International Diagnostic Interview Version 3 (CIDI 3.0) (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.

The number of items endorsed was summed to create a total number of trauma types experienced by the participant, and was then categorised into 0 to 1, 2 to 3, and 4+ types.

Participants were asked about traumatic deployment exposures using items drawn from the Middle East Area of Operations Census Study (Dobson et al., 2012). They 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 were 0 ('never'), 1 ('once'), 2 ('2–4 times'), 3 ('5–9 times') and 4 ('10+ times').

Traumatic deployment exposure items included:

- Seriously fear you would encounter an improvised explosive device?
- Go on combat patrols/missions or participate in support convoys?
- Concerned about yourself or others (including allies) having an unauthorised discharge of a weapon?
- Clear/search buildings, caves, vessel, etc.?
- Come under fire (i.e. small arms or anti-aircraft fire, guided or directed mortar/artillery fire or missile attack, indirect fire (e.g. rocket attack), improvised explosive device/explosive ordnance disposal detonation, suicide bombing, landmine strike, small arms fire from an unknown enemy combatant)?
- In danger of being killed or injured?
- Have casualties among people close to you (i.e. were present or heard of a close friend, co-worker or loved one who had been injured or killed)?
- Handle or see dead bodies?
- Experience a threatening situation where you were unable to respond due to the rules of engagement?
- Witness human degradation and misery on a large scale?
- Discharge your weapon in direct combat?
- Believe your action or inaction resulted in someone being seriously injured or killed?

Traumatic deployment exposures were summed and then categorised into low (0–4), moderate (5–12), and high (13–48).

The outcome variables (K10 and PCL-C) have been discussed in detail in Chapter 5.

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

Table 6.1 and Figure 6.1, Table 6.2 and Figure 6.2, and Table 6.3 and Figure 6.3 show the proportion of those with no disorder, subsyndromal disorder and probable disorder in 2010 cross-tabulated by the same groupings in 2015, among the entire longitudinal cohort, and according to whether they had transitioned or remained in the Regular ADF 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.

Among those who had transitioned, 30.3% had subsyndromal disorder in 2010 and 13.1% had probable disorder. In 2015, subsyndromal disorder decreased to 25.8% and probable disorder increased to 24.4%. Of those with no disorder in 2010, 19.9% became new cases of subsyndromal disorder and 14.7% became new cases of probable disorder. Among those with subsyndromal disorder in 2010, 36.8% remained subsyndromal, 27.6% were now probable cases and 35.7% were no longer cases. A substantial 59.1% of those who were probable cases in 2010 were still probable cases in 2015, with 25.5% dropping to subsyndromal and 15.3% no longer cases at all.

Those who remained in the Regular ADF reported lower rates of disorder compared to those who had transitioned at both time points. In 2010, 26.0% reported subsyndromal disorder, and 7.1% reported probable disorder. In 2015, subsyndromal decreased to 22.1% and probable disorder to 12.8%. Of those with no disorder in 2010, 14.4% were new cases of subsyndromal disorder in 2015 and 8.6% were new cases of probable disorder. Among those who were subsyndromal in 2010, 37.0% remained subsyndromal, 18.1% became cases of probable disorder and 44.9% no longer reported a disorder. There were 32.4% of participants who were cases of probable disorder in 2010 and who also reported probable disorder in 2015. Subsyndromal disorder was reported by 40.1% of this subsample and 27.6% were no longer cases in 2015.

When comparing Transitioned ADF and 2015 Regular ADF, more 2015 Regular ADF who had no disorder in 2010 remained disorder free in 2015 (77.0% vs 65.4%). Conversely, more Transitioned ADF who had probable disorder in 2010 remained cases of probable disorder in 2015 (59.1% vs 32.4%).

Table 6.1 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder 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 6.1 Proportion of entire longitudinal cohort with no disorder, subsyndromal disorder and probable disorder on K10 and PCL-C in 2010 and 2015 based on self-reported measures

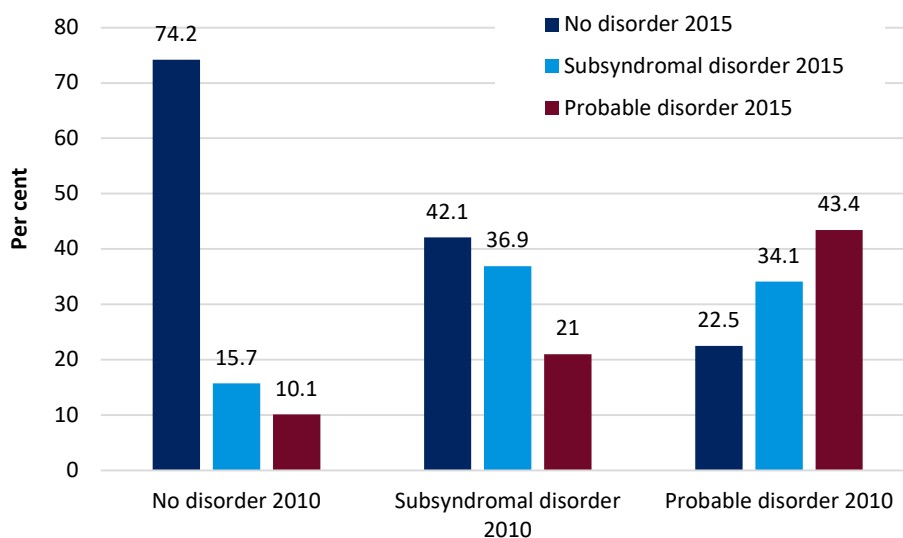


Table 6.2 Proportion of 2015 Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder in 2010 and 2015 based on self-reported measures

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	1180	56.6	772	65.4	235	19.9	173	14.7
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	631	30.3	225	35.7	232	36.8	174	27.6
Probable disorder: Above both screening and epidemiological cut-offs	274	13.1	42	15.3	70	25.5	162	59.1
Total	2085	100.0	1039	49.8	537	25.8	509	24.4

Note: Unweighted data.

Figure 6.2 Proportion of Transitioned ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder in 2010 and 2015 based on self-reported measures

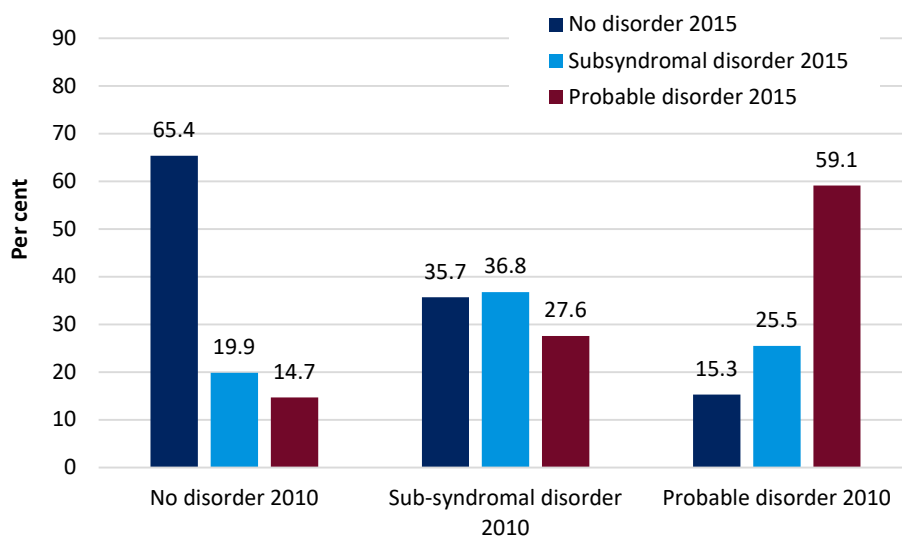
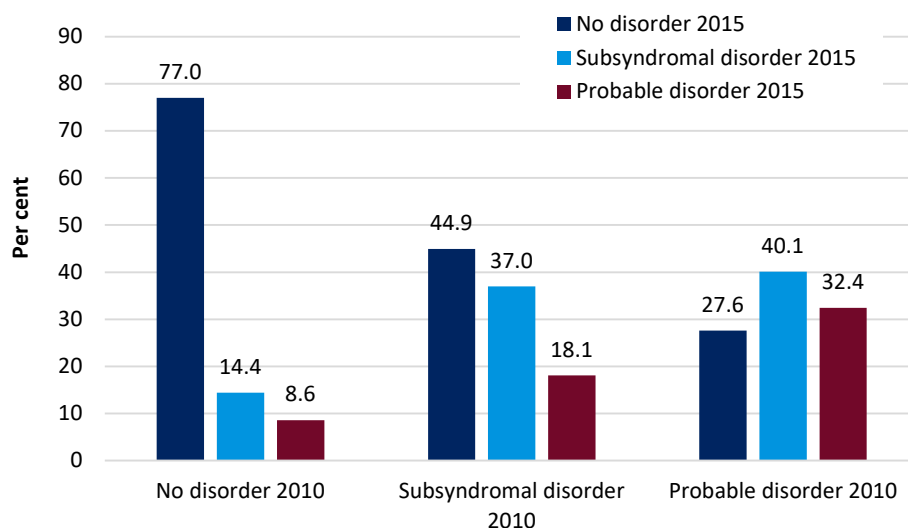


Table 6.3 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder in 2010 and 2015 based on self-reported measures

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	3684	66.9	2838	77.0	529	14.4	317	8.6
Subsyndromal disorder: Above screening cut-off but below epidemiological cut-off	1434	26.0	644	44.9	531	37.0	259	18.1
Probable disorder: Above both screening and epidemiological cut-offs	392	7.1	108	27.6	157	40.1	127	32.4
Total	5510	100.0	3590	65.2	1217	22.1	703	12.8

Note: Unweighted data.

Figure 6.3 Proportion of 2015 Regular ADF in the longitudinal cohort with no disorder, subsyndromal disorder and probable disorder in 2010 and 2015 based on self-reported measures



6.3 Univariate and multivariate predictive modelling

Table 6.4 presents the results of univariate and multivariate predictive modelling of the effect of demographic, service-related and other factors on disorder status in 2015 among those cohort members who had no disorder in 2010.

Analyses showed significant univariate associations for rank, Service, suicidality, anger, resilience, help seeking, deployment exposures and lifetime trauma. When examined

in a combined multivariate model, the effects of all variables, with the exception of help seeking, remained significant.

Rank, anger, deployment exposures and lifetime trauma all predicted the shift into subsyndromal as well as probable disorder in 2015. Specifically, compared to Officers, 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. 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. 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. Compared to those with low deployment exposure, those with high deployment exposure were more likely to be subsyndromal (OR 1.87; 95% CI 1.44, 2.43) or have probable disorder (OR 1.89; 95% CI 1.37, 2.61) than have no disorder in 2015.

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 were 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).

Service and resilience predicted the likelihood of moving from no disorder to subsyndromal disorder specifically 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. Self-reported resilience in 2010 was significantly associated with the likelihood of having subsyndromal compared to no disorder in 2015, with higher resilience associated with lower likelihood (OR 0.88; 95% CI 0.82, 0.95).

Suicidality predicted the likelihood of moving from no disorder to probable disorder between 2010 and 2015. Specifically, those reporting suicide 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 suicide (OR 3.11; 95% CI 1.65, 5.86).

Table 6.4 Proportion of longitudinal cohort, who had no disorder in 2010, with no disorder, subsyndromal disorder and probable disorder in 2015 according to various predictors

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Demographic factors (time point 1)												
Age (mean, SE)	3185	38.69 (0.17)	641	38.26 (0.35)	396	38.05 (0.47)	1.00 (0.99–1.01)	–	0.99 (0.98–1.00)	–	ns	–
Sex											ns	–
Female	437	74.8 (65.0–84.6)	93	15.9 (0.0–33.9)	54	9.2 (0.0–27.9)	ref	–	ref	–		
Male	2748	75.5 (65.8–85.2)	548	15.1 (0.0–33.2)	342	9.4 (0.0–28.1)	0.97 (0.74–1.27)	–	1.03 (0.73–1.46)	–		
Service factors (time point 1)												
Rank											< 0.0001	< 0.0001
Officer	1403	80.6 (72.0–89.2)	219	12.6 (0.0–30.9)	119	6.8 (0.0–25.7)	ref	ref	ref	ref		
Non-Commissioned Officer	1464	72.2 (61.9–82.5)	344	17.0 (0.0–34.9)	219	10.8 (0.0–29.3)	1.56 (1.29–1.90)	1.56 (1.28–1.91)	1.68 (1.31–2.14)	1.73 (1.34–2.22)		
Other	318	70.0 (59.3–80.7)	78	17.2 (0.0–35.0)	58	12.8 (0.0–31.1)	1.29 (0.91–1.82)	1.45 (1.01–2.09)	2.05 (1.40–3.00)	2.41 (1.62–3.59)		
Service											< 0.0001	0.0493
Navy	693	75.5 (65.8–85.2)	145	15.8 (0.0–33.8)	80	8.7 (0.0–27.4)	1.49 (1.16–1.92)	1.41 (1.09–1.84)	1.27 (0.92–1.75)	1.25 (0.90–1.74)		
Army	1343	71.5 (61.0–82.0)	326	17.4 (0.0–35.2)	209	11.1 (0.0–29.6)	1.68 (1.35–2.08)	1.01 (0.80–1.29)	1.68 (1.29–2.18)	1.12 (0.84–1.49)		
Air Force	1149	80.6 (72.0–89.2)	170	11.9 (0.0–30.3)	107	7.5 (0.0–26.4)	ref	ref	ref	ref		
Length of service											ns	–
1 month – 3.9 years	310	75.6 (65.9–85.3)	58	14.1 (0.0–32.3)	42	10.2 (0.0–28.8)	0.78 (0.53–1.15)	–	1.23 (0.80–1.88)	–		
4 – 7.9 years	523	74.0 (64.0–84.0)	105	14.9 (0.0–33.0)	79	11.2 (0.0–29.7)	1.11 (0.85–1.46)	–	1.41 (1.02–1.94)	–		
8 – 11.9 years	473	73.4 (63.3–83.5)	110	17.1 (0.0–34.9)	61	9.5 (0.0–28.1)	1.23 (0.94–1.60)	–	1.18 (0.84–1.65)	–		
12 – 19.9 years	691	74.5 (64.6–84.4)	150	16.2 (0.0–34.1)	87	9.4 (0.0–28.1)	1.20 (0.95–1.51)	–	1.18 (0.88–1.59)	–		
20+	1188	77.5 (68.2–86.8)	218	14.2 (0.0–32.4)	127	8.3 (0.0–27.1)	ref	–	ref	–		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Relationship status and satisfaction (time point 1)												
In significant intimate relationship											ns	–
No	384	71.2 (60.7–81.7)	94	17.4 (0.0–35.2)	61	11.3 (0.0–29.8)	ref	–	ref	–		
Yes	2801	76.1 (66.5–85.7)	547	14.9 (0.0–33.0)	335	9.1 (0.0–27.8)	0.89 (0.54–1.46)	–	0.91 (0.49–1.67)	–		
Satisfaction with relationship											ns	–
Very dissatisfied/ dissatisfied/neither	230	72.3 (62.0–82.6)	55	17.3 (0.0–35.1)	33	10.4 (0.0–29.0)	ref	–	ref	–		
Satisfied/very satisfied	2660	76.3 (66.8–85.8)	512	14.7 (0.0–32.8)	314	9.0 (0.0–27.7)	0.80 (0.59–1.10)	–	0.82 (0.56–1.21)	–		
Suicidality, anger and resilience (time point 1)												
Any 12-month suicidality											0.0039	0.0019
No	3127	75.6 (65.9–85.3)	626	15.1 (0.0–33.2)	381	9.2 (0.0–27.9)	ref	ref	ref	ref		
Yes	58	65.9 (54.5–77.3)	15	17.0 (0.0–34.9)	15	17.0 (0.0–34.9)	1.55 (0.83–2.91)	1.60 (0.83–3.08)	2.78 (1.51–5.14)	3.11 (1.65–5.86)		
Problematic anger on DAR-5											< 0.0001	0.0017
No	3139	75.9 (66.3–85.5)	615	14.9 (0.0–33.0)	382	9.2 (0.0–27.9)	ref	ref	ref	ref		
Yes	46	53.5 (40.1–66.9)	26	30.2 (13.8–46.6)	14	16.3 (0.0–34.2)	2.98 (1.81–4.92)	2.48 (1.47–4.18)	2.52 (1.34–4.72)	1.99 (1.04–3.80)		
Resilience (mean)	3185	7.22 (0.02)	641	7.00 (0.05)	396	7.10 (0.06)	0.86 (0.80–0.92)	0.88 (0.82–0.95)	0.94 (0.85–1.03)	0.97 (0.88–1.07)	< 0.0001	0.0032
Help seeking (time point 1)												
Seen any health professional in last month for feelings of psychological distress											0.0012	ns
No	3091	75.8 (66.2–85.4)	603	14.8 (0.0–32.9)	382	9.4 (0.0–28.1)	ref	ref	ref	ref		
Yes	94	64.4 (52.7–76.1)	38	26.0 (9.1–42.9)	14	9.6 (0.0–28.2)	2.12 (1.42–3.17)	1.58 (1.04–2.42)	1.15 (0.62–2.13)	0.87 (0.46–1.63)		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Lifetime trauma and deployment exposures (time point 2)												
Low	1697	82.2 (73.9–90.5)	219	10.6 (0.0–29.1)	149	7.2 (0.0–26.1)	ref	ref	ref	ref		
High	698	62.6 (50.6–74.6)	264	23.7 (6.6–40.8)	153	13.7 (0.0–31.9)	2.94 (2.38–3.64)	1.87 (1.44–2.43)	2.56 (1.98–3.33)	1.89 (1.37–2.61)		
0–1	1497	84.5 (76.8–92.2)	152	8.6 (0.0–27.3)	123	6.9 (0.0–25.8)	ref	ref	ref	ref	< 0.0001	< 0.0001
4+	707	60.0 (47.6–72.4)	308	26.1 (9.3–42.9)	163	13.8 (0.0–32.0)	4.12 (3.28–5.18)	3.17 (2.45–4.11)	2.81 (2.15–3.67)	2.16 (1.59–2.94)		

ns = not significant

Table 6.5 presents the results of univariate and multivariate predictive modelling of the effect of demographic, service-related and other factors on disorder status in 2015 among those cohort members who had subsyndromal symptoms in 2010.

When examining the subgroup who were subsyndromal in 2010, analyses showed significant univariate associations for sex, rank, Service, suicidality, anger, resilience, deployment exposures and lifetime trauma on the likelihood of retaining subsyndromal status or moving into probable disorder, compared to having no disorder in 2015. When examined in a combined multivariate model, the effects of rank, anger, resilience, deployment exposures and lifetime trauma all remained significant.

Anger, resilience, deployment exposures and lifetime trauma exposure all predicted retention of subsyndromal status as well as movement into probable disorder in 2015. Scoring above the cut-off for problematic anger in 2010 was associated with a greater likelihood of retaining subsyndromal symptoms (OR 1.58; 95% CI 1.10, 2.25) or moving to probable disorder (OR 2.14; 95% CI 1.43, 3.18), compared to having no disorder in 2015. Higher self-reported resilience was associated with lower likelihood of retaining subsyndromal symptoms (OR 0.86; 95% CI 0.79, 0.95) or moving to probable disorder (OR 0.88; 95% CI 0.79, 0.98), compared to no disorder in 2015. Having high deployment exposure (compared to low) was associated with the likelihood of retaining subsyndromal symptoms (OR 1.78; 95% CI 1.31, 2.42) or having a probable disorder (OR 2.97; 95% CI 2.04, 4.32), compared to being disorder free in 2015. Again, there was increasing risk of retaining subsyndromal symptoms with increasing lifetime trauma exposure. Specifically, compared to those reporting 0 to 1 lifetime trauma types, reporting 2 to 3 types (OR 1.59; 95% CI 1.17, 2.17) was associated with greater likelihood, and for those reporting 4+ types, the likelihood was greater again (OR 3.13; 95% CI 2.27, 4.32). Again, reporting 4+ lifetime trauma exposure types was also associated with having a probable disorder (OR 2.96; 95% CI 1.98, 4.44) compared to being disorder free in 2015.

Rank was also significantly associated with the likelihood of moving from subsyndromal disorder in 2010 to probable disorder in 2015, compared to having no disorder in 2015. Specifically, 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.

Table 6.5 Proportion of longitudinal cohort, who had subsyndromal disorder in 2010, with no disorder, subsyndromal disorder and probable disorder in 2015 according to various predictors

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Age (mean)	747	38.23 (0.35)	649	38.62 (0.36)	341	38.07 (0.50)	1.01 (0.99–1.02)	–	1.00 (0.99–1.02)	–	ns	–
Female	146	49.7 (35.8–63.6)	99	33.7 (17.7–49.7)	49	16.7 (0.0–34.6)	ref	–	ref	–		
Service factors (time point 1)												
Officer	303	49.8 (35.9–63.7)	220	36.1 (20.4–51.8)	86	14.1 (0.0–32.3)	ref	ref	ref	ref		
Other	77	35.6 (19.9–51.3)	76	35.2 (19.4–51.0)	63	29.2 (12.7–45.7)	1.39 (0.91–2.13)	1.53 (0.98–2.38)	3.39 (2.13–5.39)	3.91 (2.38–6.42)		
Navy	180	45.2 (30.7–59.7)	142	35.7 (20.0–51.4)	76	19.1 (1.5–36.7)	0.98 (0.72–1.34)	–	1.34 (0.91–1.98)	–		
Air Force	253	47.6 (33.4–61.8)	195	36.7 (21.1–52.3)	83	15.6 (0.0–33.6)	ref	–	ref	–		
1 month – 3.9 years	59	43.1 (28.3–57.9)	45	32.8 (16.7–48.9)	33	24.1 (7.0–41.2)	0.70 (0.42–1.17)	–	1.42 (0.82–2.45)	–		
8 – 11.9 years	131	47.1 (32.8–61.4)	94	33.8 (17.9–49.7)	53	19.1 (1.5–36.7)	0.77 (0.55–1.07)	–	0.90 (0.60–1.36)	–		
20+	267	42.3 (27.4–57.2)	253	40.1 (24.9–55.3)	111	17.6 (0.0–35.4)	ref	–	ref	–		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Relationship status and satisfaction (time point 1)												
In significant intimate relationship											ns	–
No	141	49.6 (35.7–63.5)	95	33.5 (17.5–49.5)	48	16.9 (0.0–34.8)	ref	–	ref	–		
Yes	606	41.7 (26.7–56.7)	554	38.1 (22.7–53.5)	293	20.2 (2.7–37.7)	1.23 (0.71–2.14)	–	1.00 (0.53–1.88)	–		
Satisfaction with relationship											ns	–
Very dissatisfied/ dissatisfied/neither	110	42.0 (27.1–56.9)	94	35.9 (20.2–51.6)	58	22.1 (4.8–39.4)	ref	–	ref	–		
Satisfied/very satisfied	527	41.8 (26.8–56.8)	483	38.3 (22.9–53.7)	250	19.8 (2.2–37.4)	1.07 (0.79–1.45)	–	0.90 (0.63–1.28)	–		
Suicidality, anger and resilience (time point 1)												
Any 12-month suicidality											0.0139	ns
No	662	44.1 (29.4–58.8)	553	36.8 (21.2–52.4)	286	19.1 (1.5–36.7)	ref	–	ref	–		
Yes	85	36.0 (20.3–51.7)	96	40.7 (25.6–55.8)	55	23.3 (6.1–40.5)	1.47 (1.04–2.07)	–	1.73 (1.17–2.56)	–		
Problematic anger on DAR-5											< 0.0001	0.0009
No	682	45.6 (31.1–60.1)	543	36.3 (20.7–51.9)	269	18.0 (0.3–35.7)	ref	ref	ref	ref		
Yes	65	26.7 (9.9–43.5)	106	43.6 (28.9–58.3)	72	29.6 (13.2–46.0)	1.88 (1.34–2.66)	1.58 (1.10–2.25)	2.78 (1.91–4.04)	2.14 (1.43–3.18)		
Resilience (mean)	747	6.55 (0.05)	649	6.33 (0.05)	341	6.36 (0.08)	0.88 (0.81–0.95)	0.86 (0.79–0.95)	0.87 (0.79–0.97)	0.88 (0.79–0.98)	0.0033	0.0042
Help seeking (time point 1)												
Seen any health professional in last month for feelings of psychological distress											ns	–
No	647	43.7 (29.0–58.4)	545	36.8 (21.2–52.4)	289	19.5 (1.9–37.1)	ref	–	ref	–		
Yes	100	39.1 (23.8–54.4)	104	40.6 (25.5–55.7)	52	20.3 (2.8–37.8)	1.30 (0.94–1.78)	–	1.28 (0.87–1.87)	–		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Lifetime trauma and deployment exposures (time point 2)												
Number of different traumatic deployment exposures											< 0.0001	< 0.0001
Low	404	54.6 (41.4–67.8)	236	31.9 (15.7–48.1)	100	13.5 (0.0–31.7)	ref	ref	ref	ref		
Moderate	195	45.7 (31.3–60.1)	165	38.6 (23.2–54.0)	67	15.7 (0.0–33.7)	1.42 (1.07–1.88)	1.18 (0.88–1.58)	1.34 (0.92–1.95)	1.19 (0.80–1.76)		
High	148	26.0 (9.1–42.9)	248	43.5 (28.8–58.2)	174	30.5 (14.2–46.8)	2.78 (2.11–3.66)	1.78 (1.31–2.42)	4.46 (3.21–6.19)	2.97 (2.04–4.32)		
Number of lifetime trauma types											< 0.0001	< 0.0001
0–1	302	60.5 (48.2–72.8)	131	26.3 (9.5–43.1)	66	13.2 (0.0–31.5)	ref	ref	ref	ref		
2–3	248	48.2 (34.1–62.3)	185	36.0 (20.3–51.7)	81	15.8 (0.0–33.8)	1.70 (1.26–2.29)	1.59 (1.17–2.17)	1.49 (1.01–2.20)	1.29 (0.85–1.94)		
4+	197	27.2 (10.5–43.9)	333	46.0 (31.6–60.4)	194	26.8 (10.0–43.6)	3.85 (2.88–5.14)	3.13 (2.27–4.32)	4.54 (3.18–6.48)	2.96 (1.98–4.44)		

ns = not significant

Table 6.6 presents the results of univariate and multivariate predictive modelling of the effect of demographic, service-related and other factors on disorder status in 2015 among those cohort members who had probable disorder in 2010.

Analyses showed significant univariate associations for age, sex, Service, length of service, suicidality, anger, resilience, help seeking, deployment exposures and lifetime trauma. When examined in a combined multivariate model, the effects of age, anger, help seeking, deployment exposures and lifetime trauma all remained significant.

Lifetime trauma exposure predicted the shift into subsyndromal as well as retention of probable disorder, compared to having no disorder in 2015. Compared to reporting 0 to 1 lifetime trauma types, reporting 4+ types was associated with the likelihood of being subsyndromal (OR 2.24; 95% CI 1.07, 4.67) or retaining probable disorder (OR 2.56; 95% CI 1.21, 5.39), compared to being disorder free in 2015.

Age predicted the shift from probable to subsyndromal disorder in 2015, with each additional year of age associated with increased likelihood (OR 1.04; 95% CI 1.01, 1.07).

Anger, help seeking and deployment exposures specifically predicted retention of probable disorder status in 2015, compared to being disorder free. Scoring above the cut-off for problematic anger in 2010 was associated with a greater likelihood of retaining subsyndromal disorder (OR 2.90; 95% CI 1.65, 5.09), compared to having no disorder in 2015. Those cohort members who reported seeing a health professional in relation to their feelings of psychological distress in 2010 were also more likely to retain their probable disorder status than have no disorder in 2015 (OR 3.33; 95% CI 1.88, 5.90). Having high deployment exposure (compared to low) was associated with the likelihood of retaining probable disorder (OR 2.28; 95% CI 1.03, 5.06) compared to being disorder free in 2015.

Table 6.6 Proportion of longitudinal cohort, who had probable disorder in 2010, with no disorder, subsyndromal disorder and probable disorder in 2015 according to various predictors

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Demographic factors (time point 1)												
Age (mean)	126	35.07 (0.78)	179	39.69 (0.77)	237	38.54 (0.62)	1.05 (1.02–1.08)	1.04 (1.01–1.07)	1.04 (1.01–1.06)	1.02 (0.99–1.06)	0.0016	0.0223
Sex											0.0007	ns
Female	42	38.5 (23.1–53.9)	29	26.6 (9.8–43.4)	38	34.9 (19.1–50.7)	ref	–	ref	–		
Male	84	19.4 (1.8–37.0)	150	34.6 (18.7–50.5)	199	46.0 (31.6–60.4)	2.50 (1.38–4.55)	–	2.77 (1.58–4.87)	–		
Service factors (time point 1)												
Rank								–		–	ns	–
Officer	47	28.5 (11.9–45.1)	58	35.2 (19.4–51.0)	60	36.4 (20.8–52.0)	ref	–	ref	–		
Non-Commissioned Officer	53	19.9 (2.4–37.4)	90	33.7 (17.7–49.7)	124	46.4 (32.1–60.7)	1.30 (0.75–2.27)	–	1.65 (0.96–2.83)	–		
Other	26	23.6 (6.5–40.7)	31	28.2 (11.6–44.8)	53	48.2 (34.1–62.3)	0.76 (0.35–1.65)	–	1.41 (0.70–2.84)	–		
Service								–		–	0.0354	ns
Navy	42	29.4 (12.9–45.9)	45	31.5 (15.3–47.7)	56	39.2 (23.9–54.5)	0.84 (0.44–1.62)	–	1.15 (0.60–2.18)	–		
Army	42	17.6 (0.0–35.4)	73	30.5 (14.2–46.8)	124	51.9 (38.3–65.5)	1.19 (0.66–2.13)	–	2.14 (1.21–3.78)	–		
Air Force	42	26.3 (9.5–43.1)	61	38.1 (22.7–53.5)	57	35.6 (19.9–51.3)	ref	–	ref	–		
Length of service								–		–	0.0258	ns
1 month – 3.9 years	19	34.5 (18.6–50.4)	16	29.1 (12.6–45.6)	20	36.4 (20.8–52.0)	0.28 (0.11–0.69)	–	0.30 (0.13–0.74)	–		
4 – 7.9 years	29	30.2 (13.8–46.6)	31	32.3 (16.2–48.4)	36	37.5 (22.0–53.0)	0.45 (0.21–0.97)	–	0.53 (0.25–1.12)	–		
8 – 11.9 years	28	31.5 (15.3–47.7)	19	21.3 (3.9–38.7)	42	47.2 (33.0–61.4)	0.33 (0.16–0.71)	–	0.63 (0.32–1.25)	–		
12 – 19.9 years	21	18.8 (1.1–36.5)	34	30.4 (14.0–46.8)	57	50.9 (37.2–64.6)	0.66 (0.32–1.33)	–	0.96 (0.49–1.88)	–		
20+	29	15.3 (0.0–33.3)	79	41.6 (26.6–56.6)	82	43.2 (28.4–58.0)	ref	–	ref	–		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
In significant intimate relationship											ns	–
Yes	89	20.6 (3.1–38.1)	143	33.1 (17.1–49.1)	200	46.3 (31.9–60.7)	1.75 (0.74–4.14)	–	2.98 (1.21–7.33)	–		
Very dissatisfied/ dissatisfied/neither	25	19.8 (2.2–37.4)	47	37.3 (21.8–52.8)	54	42.9 (28.1–57.7)	ref	–	ref	–		
Suicidality, anger and resilience (time point 1)												
No	85	27.7 (11.0–44.4)	106	34.5 (18.6–50.4)	116	37.8 (22.3–53.3)	ref	–	ref	–		
Problematic anger on DAR-5											< 0.0001	0.0004
Yes	37	15.5 (0.0–33.5)	70	29.4 (12.9–45.9)	131	55.0 (41.9–68.1)	1.67 (0.98–2.87)	1.61 (0.90–2.86)	3.45 (2.07–5.76)	2.90 (1.65–5.09)		
Help seeking (time point 1)												
No	92	27.8 (11.1–44.5)	124	37.5 (22.0–53.0)	115	34.7 (18.9–50.5)	ref	ref	ref	ref		

Predictors	2015 Transition and Wellbeing Research Programme											
	Descriptive statistics						Odds ratios				Overall <i>p</i> -values	
	No disorder (ref)		Subsyndromal disorder		Probable disorder		Subsyndromal disorder vs No disorder		Probable disorder vs No disorder			
	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	n	% (95% CI) / Mean (SE)	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)	<i>p</i> -value	<i>p</i> -value for adjusted model
Lifetime trauma and deployment exposures (time point 2)												
Low	70	29.7 (13.3–46.1)	78	33.1 (17.1–49.1)	88	37.3 (21.8–52.8)	ref	ref	ref	ref		
High	17	9.4 (0.0–28.1)	59	32.8 (16.7–48.9)	104	57.8 (45.1–70.5)	3.48 (1.74–6.94)	1.56 (0.69–3.50)	5.50 (2.84–10.66)	2.28 (1.03–5.06)		
0–1	55	36.7 (21.1–52.3)	48	32.0 (15.8–48.2)	47	31.3 (15.1–47.5)	ref	ref	ref	ref		
4+	31	11.5 (0.0–29.9)	98	36.3 (20.7–51.9)	141	52.2 (38.6–65.8)	3.44 (1.85–6.37)	2.24 (1.07–4.67)	5.11 (2.79–9.37)	2.56 (1.21–5.39)		

ns = not significant

7 Discussion

The key objective of this report is to outline the course of mental health in ADF members who transitioned from regular ‘full-time’ service between 2010 and 2014, and to map the predictors of their changing mental health status over this period. The patterns of transition over this period in those who left the ADF were considered in relation to personnel who remained in the ADF in this time frame. This information needs to be understood in the context of the previous reports of the Mental Health and Wellbeing Transition Study, and in particular the *Mental Health Prevalence Report* (Van Hooff et al., 2018) and the *Pathways to Care Report* (Forbes et al., 2018). As per findings from the *Mental Health Prevalence Report*, the overall prevalence and severity of 12-month mental disorder in the Transitioned ADF was high, and the spectrum of mental disorders reported was broader than anticipated. This was particularly the case for anxiety disorders. Importantly, the self-reported mental health of the Transitioned ADF in 2015 was significantly worse than both the Regular ADF (in relation to symptoms of posttraumatic stress disorder (PTSD), anxiety, depression, alcohol consumption, anger and suicidality) and the Australian community in 2015 (in relation to psychological distress). Finally, the report identified a substantial group of people with subsyndromal symptoms who would benefit from further monitoring and early intervention. This group represents those at significant risk of the later emergence of disorder – an issue that is further supported by the findings of the current report.

In the context of these findings, and considering the large numbers of personnel transitioning from the ADF each year, it is important to profile how mental health changes in the period after transition. This is essential information if both the ADF and the Department of Veterans’ Affairs are to knowledgeably develop policies to improve the transition process and the care for veterans.

7.1 Socio-demographic factors

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 data pertinent to the longitudinal cohort, approximately one-third of Transitioned personnel remained as Active Reservists (38.4%), and 30.1% as Inactive Reservists. Most Transitioned ADF requested their own discharge (57.7%), and one-fifth received medical discharges (18.6%). Comparable proportions of Transitioned and Regular ADF personnel 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 personnel had served less than eight years in the ADF (17.7% vs 6.7%). Importantly, just over one-half (55.3%) of Transitioned personnel reported civilian employment, and one-third (38.8%) reported that they had been unemployed for a period of at least three months. 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). Moreover, the rate of unemployment after leaving the ADF is likely to be associated with ongoing difficulties, with evidence suggesting those who leave active service may have problems in obtaining better employment in the future (Leach et al., 2010). There has been considerable attention given to employment of veterans in recent years, including the Prime Minister's Veterans' Employment Program, announced in 2016, which promotes employment opportunities within the private sector (Australian Government, 2017). Recent initiatives have demonstrated that supported employment programs markedly benefit veterans and result in maintenance of long-term employment (Davis et al., 2018). Considering the potential benefits that employment can have on psychosocial functioning (Sripada et al., 2018), it is particularly important to maintain efforts to support employment pathways for veterans and to reduce barriers to retaining employment.

7.2 Changing rates of mental disorder between 2010 and 2015

A fuller discussion of the population-level prevalence rates of mental disorders in the entire Transitioned ADF is presented in the *Mental Health Prevalence Report*. In contrast, 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.

It is also worth emphasising that the prevalence rates of mental health problems reflected in the self-reported data are lower than those from the Composite International Diagnostic Interview (CIDI) data. One important methodological difference to note in this regard is that while the CIDI data reflect mental health status over the past 12 months, the self-report data are limited to mental health functioning in the past month. Accordingly, it would be expected that rates of mental health problems would be lower in the self-report compared to CIDI data. While the longitudinal cohort was selected out for the purpose of this report, and is not representative of the broader population, the patterns observed were largely comparable to those reported in the 2010 ADF Mental Health Prevalence and Wellbeing Study. These patterns are further discussed below.

7.3 Resilience

Overall, more than half of the longitudinal cohort reported having no disorder at both time points, with 58.0% in 2010 and 54.0% in 2015 reporting no disorder. This highlights that most personnel across both Regular ADF and Transitioned ADF 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. These patterns of resilience indicate that most veterans display good mental health following military service, and this pattern is even observed in those exposed to 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 et al., 2017; Isaacs et al., 2017). Although this pattern has been shown in personnel deployed to the Gulf War (Orcutt et al., 2004), Kosovo (Dickstein et al., 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).

7.4 Twelve-month CIDI mental disorders over time

7.4.1 Anxiety disorder

The most commonly reported International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) mental disorders in both 2010 and 2015 were anxiety disorders (32.6% in 2010 and 37.8% in 2015). Of the disorders assessed, anxiety disorders were the only disorder category that significantly increased over time. For those who did not report an anxiety disorder in 2010, comparable proportions of those who transitioned and those who remained in regular ADF service developed an anxiety disorder in 2015 (22.4% vs 24.0%). Among those who reported an anxiety disorder in 2010, proportionally more personnel who transitioned retained an anxiety disorder in 2015 relative to those who remained in the ADF (75.0% vs 62.9%). Several key points emerge from these results.

Anxiety is one of the most commonly reported mental health conditions in the community, and consistent with this pattern, here it was also the most commonly observed disorder category in the Transitioned and Regular ADF. In the National Survey of Mental Health and Wellbeing, 11.8% of the Australian community respondents met criteria for an anxiety disorder in the previous 12 months (McEvoy, Grove & Slade, 2011).

Being transitioned in 2015 (compared to remaining in regular service) was associated with greater likelihood of retention of an anxiety disorder in 2015. Several factors could explain this. It is possible that those who transitioned from the ADF had a more severe anxiety disorder initially, and accordingly these individuals were more at risk of retaining their disorder. This possibility is supported by the observation that those who had transitioned in 2015 reported 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 (2010: 38.3% vs 29.9%; OR 1.5; 95% CI 1.1, 2.0), (2015: 42.5% vs 35.6%; OR 1.3; 95% CI 1.0, 1.8). This pattern indicates that ADF personnel who transitioned in 2015 were also 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 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).

Alternatively, 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.

Specific anxiety disorders

Focusing on specific anxiety disorders, one can see similar patterns as discussed above. The majority of those who in 2010 *did not* meet criteria for panic attacks, panic disorder, agoraphobia, specific phobia, or PTSD, also did not meet criteria for that mental disorder in 2015. However, among 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 disorder in 2015 relative to those who remained in the ADF. For example, panic disorder rates were slightly higher in 2010 among those who had transitioned versus those who stayed in the ADF (5.4% vs 3.6%); however, the rate of panic disorder climbed markedly in those who transitioned relative to those who remained in the ADF by 2015 (8.0% vs 2.3%).

It is 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. 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). Support for the fear circuitry category has also drawn on findings showing that whereas fear circuitry disorders tend to be characterised by excessive amygdala reactivity, and impaired regulation of that response by the medial prefrontal cortex (Rauch & Drevets, 2009), different neural networks appear to be involved in non-fear circuitry anxiety disorders, such as generalised anxiety disorder and depression (Cannistraro et al., 2004; Nitschke et al., 2009; Rauch et al., 2007). A key postulate is that fear conditioning involves increased sympathetic nervous system, or impaired parasympathetic nervous system, activity in the immediate aftermath of trauma exposure. Consistent with the fear circuitry proposal, evidence has shown that elevated heart rates in the initial days after a traumatic event predict subsequent PTSD, panic disorder, agoraphobia, and social phobia but not depression, generalised anxiety disorder, or obsessive-compulsive disorder (Bryant, Creamer, O'Donnell, Silove & McFarlane, 2011). This convergent evidence suggests that ADF personnel who experience some form of fear circuitry disorder (PTSD, panic attack or panic disorder, social phobia, specific phobia, or agoraphobia) during the period when they are an active ADF member may be prone to retaining this group of disorders following discharge, potentially because fear circuitry

mechanisms are thought to include sensitisation to later stressors that can exacerbate the condition (Post et al., 1995).

Interestingly, and consistent with the above discussion, this pattern was not observed for generalised anxiety disorder (GAD) and obsessive-compulsive disorder (OCD). Specifically, of those with either GAD or OCD in 2010, more *Regular ADF* members retained their disorder in 2015 than Transitioned members. It should be noted, however, that very few personnel met criteria for GAD or OCD, so these shifts need to be considered cautiously. Nonetheless, these findings reinforce the conclusion that there is a different pattern of disorder course between the fear circuitry and non-fear circuitry disorders. The observation that Transitioned ADF personnel were not more susceptible to retaining their affective disorder, OCD, or GAD underscores that stress sensitisation may play a role in the greater retention of fear circuitry disorders.

Posttraumatic stress disorder

It is worth discussing the pattern of PTSD as distinct from the other anxiety disorders for several reasons. There is the focused attention on PTSD among military and veteran agencies because of the repeated exposure to trauma. Further, the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) now recognises PTSD in a trauma-related stressor category that is separate from anxiety disorders (Friedman et al., 2011b). In the longitudinal cohort, 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 and 2015 compared to those who remained in the Regular ADF in 2015. This difference was larger for PTSD than any of the disorder categories (2010: 19.5% vs 10.6%; OR 2.1; 95% CI 1.4, 3.1), (2015: 24.5% vs 13.1%; OR 2.2; 95% CI 1.5, 3.1), a pattern which 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. As specified in DSM-5, delayed-onset PTSD can involve new onset of PTSD symptoms or worsening of symptoms over time (Friedman et al., 2011a). 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 et al., 2007). The finding that Transitioned personnel had higher rates of PTSD symptoms during military service in 2010 suggests that there may have been 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 et al., 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, 2007a). 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.

7.4.2 Affective disorders

Overall, rates of affective disorders remained reasonably stable across the 2010 and 2015 assessments (18.3% in 2010, and 21.1% in 2015), and there were no marked differences between those who had transitioned compared to those who remained in the Regular ADF. In terms of depressive episodes, similar proportions of Transitioned and Regular ADF became new cases in 2015 (11.0% vs 11.1%). 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 supports prior research of ADF personnel showing that veterans have greater rates of depressive disorder than currently serving ADF personnel (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 personnel who remained in the ADF and those who transitioned. Although there was a trend for Transitioned personnel to retain their depressive disorder, this was only marginal and markedly less than previous studies.

The proportion of new dysthymia and bipolar affective disorder cases in 2015 was small. Slightly more of those who had transitioned (6.6%) became new cases of dysthymia in 2015 compared to those who remained in the Regular ADF (3.1%), although a much greater proportion of those who had transitioned (40.0%) retained their disorder in 2015 compared to those who remained in the Regular ADF (7.7%). However, the numbers of personnel having these disorders are so small that one cannot make reliable inferences about the changing patterns over time in terms of dysthymia.

For bipolar affective disorder, slightly more of those who had transitioned (6.5%) became new cases in 2015 compared to those who remained in the Regular ADF (3.7%), and a slightly smaller proportion of those who transitioned (30.8%) retained their disorder in 2015 compared to those who remained in the Regular ADF (38.1%). Again, the actual numbers of bipolar disorder cases are so small that no reliable conclusions can be drawn regarding patterns of change.

7.4.3 Alcohol disorders

Overall, the rates of alcohol disorders were relatively low and showed no significant difference over time, with 6.5% reported in 2010 and 6.3% in 2015. Although there were comparable rates of alcohol disorders in 2010 in both the Transitioned and Regular ADF samples, in 2015 those who had transitioned in 2015 reported higher rates of alcohol disorder, with a trend towards a decrease in alcohol disorders among those who remained in the Regular ADF. Several points emerge from these findings.

This pattern highlights that personnel who discharged were not apparently showing signs of alcohol use disorder during military service and this only became apparent after they transitioned. Interestingly, different patterns have been observed in longitudinal studies in international military agencies. A study of US personnel found that transitioned Operation Iraqi Freedom/Operation Enduring Freedom personnel displayed increased alcohol use during service, a decrease immediately after separation, and then a return to pre-military levels (Golub & Bennett, 2014). It should be noted this study focused on personnel who discharged to low-income minority neighbourhoods, and so may not be generalisable to the broader veteran population. It has been noted that military cultures and policies regarding alcohol vary around the world, and so patterns observed in the Australian context may be different from those observed in the United States or United Kingdom (Sundin et al., 2014).

The finding that alcohol use disorder was reasonably low during active service in the ADF, with no differences between those who later transitioned and those who remained in the ADF while in service, indicates 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 that report 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).

7.5 Self-reported mental health over time

Up to this point, this discussion has focused on the relationship between *12-month* diagnosable mental disorders among the Transitioned and Regular ADF from 2010 to 2015 (when the Transitioned personnel had discharged from the ADF). This next section outlines the changes to self-reported *current* mental health symptomatology. A major advantage of the self-report measures is that they provide insights into the *severity* of each mental health condition rather than dichotomous diagnostic categorisations. Another advantage is that this approach permits identification of people who experience subsyndromal levels of each mental health condition. This is important because there is evidence that people often shift from subsyndromal to full diagnostic disorder (Bryant et al., 2013), and that subsyndromal levels can be predictive of subsequent disorder over time (O'Donnell, 2013; Pietrzak et al., 2013). Importantly, subsyndromal levels of PTSD and other disorder are also associated with significant impairment and accordingly can impact on veteran wellbeing as much as symptoms associated with diagnosable disorders (Judd, Paulus, Wells & Rapaport,

1996; Karsten, Penninx, Verboom, Nolen & Hartman, 2013). Specifically, this section reports severity in both the Transitioned and Regular ADF personnel of:

- psychological distress
- PTSD
- abuse of alcohol
- depression
- anger
- violence
- suicidality.

7.5.1 Psychological distress

Those who remained in the Regular ADF reported lower levels of disorder on the Kessler Psychological Distress 10-item scale (K10) in 2010 and 2015 compared to those who had transitioned. This finding reinforces the finding observed using the CIDI that personnel who left the ADF tended to have more psychological difficulties during their ADF service. This underscores the conclusion that a healthy worker effect was in operation, such that psychologically fitter individuals were more likely to remain in active service.

Among the Transitioned ADF, 63.3% had no disorder on the K10 in 2010, 25.2% reported subsyndromal disorder and 11.5% had probable disorder. In 2015, 56.2% had no disorder, subsyndromal disorder fell to 21.1% and probable disorder almost doubled to 22.6%. Of those who had no disorder on the K10 in 2010, 16.1% had a subsyndromal disorder in 2015 and 15.2% had a probable disorder. Of those with a subsyndromal disorder in 2010, 32.7% remained in this category, 42.2% no longer had a disorder, and 25.2% now had a probable disorder. Of those with a probable disorder in 2010, over half (58.0%) still had a probable disorder, 23.2% now had a 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.

The finding that 25.2% of Transitioned personnel and 17.5% of Regular ADF personnel worsened from subsyndromal disorder to probable disorder from 2010 to 2015 is consistent with previous evidence that subsyndromal levels of disorders are predictive of subsequent development of disorder (Bryant et al., 2013; O'Donnell, 2013; Pietrzak et al., 2013). Importantly, the observation that this pattern was marginally 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, 2007a).

The finding that 18.8% of Transitioned personnel and 35.2% of Regular ADF members who had a probable disorder on the 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.

7.5.2 Posttraumatic stress disorder symptoms

A somewhat similar pattern as for psychological distress was observed for PTSD symptoms. In terms of the Transitioned ADF, 75.0% did not meet criteria for a disorder 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 increased to 25.0% and probable disorder increased to 12.2%. Those who remained in the Regular ADF reported lower levels of 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 and subsyndromal disorder increased slightly to 17.1% and probable disorder to 3.0%. These patterns highlight that over time the PTSD symptoms worsened to a greater extent in the Transitioned ADF relative to the Regular ADF. Although there were very slight increases in the Regular ADF cohort in subsyndromal and probable disorder, these changes were much smaller than those observed in the Transitioned ADF. Combining proportions of subsyndromal and probable disorder, it can be seen that whereas the proportion of

Transitioned personnel with some level of posttraumatic stress increased from 25.0% in 2010 to 37.2% in 2015, the comparable increase in Regular ADF personnel was 16.7% in 2010 and 20.1% in 2015.

There were marked shifts over time in levels of posttraumatic stress in the Transitioned and Regular ADF. Specifically, of 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, of Regular ADF with no disorder in 2010, 12.3% now had a subsyndromal disorder and only 1.4% had a probable disorder in 2015.

In terms of those with subsyndromal disorder in 2010, 42.0% of Transitioned personnel remained subsyndromal, 34.7% no longer had a disorder and 23.4% now met criteria for probable disorder. A different pattern emerged for Regular ADF personnel in that whereas 39.5% remained in this category in 2015 (compared to Transitioned personnel), 50.6% no longer had a disorder and 9.9% now had a probable disorder. That is, Regular ADF personnel who had subsyndromal levels of posttraumatic stress in 2010 tended to improve over time relative to the Transitioned personnel.

Regarding those with probable disorder in 2010, over half (55.0%) of Transitioned personnel remained probable disorder cases in 2015, 34.9% shifted to subsyndromal and 10.1% no longer met criteria for disorder. In contrast, in 2010, 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.

These patterns reinforce findings from the CIDI data that the Transitioned ADF are markedly more at risk than Regular ADF of worsened PTSD over time. The PCL-C data extend the CIDI data by demonstrating that a significant proportion of personnel 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 personnel 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-blown PTSD (Halpern, Maunder, Schwartz & Gurevich, 2011; O'Donnell, 2013). In the context that subsyndromal PTSD is associated with marked functional impairment (Stein et al., 1997; Zlotnick, Franklin & Zimmerman, 2002; Fetzner, McMillan & Asmundson, 2012; Marshall et al., 2001;

Pietrzak et al., 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.

The overall pattern of subsyndromal levels of PTSD being a risk for more severe subsequent PTSD, and particularly following transition, is consistent with evidence of distinct neurobiological patterns in military samples with subsyndromal PTSD. A range of studies have noted that military samples with subsyndromal PTSD have altered neurobiological patterns that are consistent with biological alterations implicating stress responses observed in PTSD (Schür et al., 2016; Steudte-Schmiedgen et al., 2015; van Zuiden et al., 2015; Vermetten, Baker & Yehuda, 2015; Wiborg et al., 2016).

7.5.3 Alcohol use

Overall, those who remained in the Regular ADF reported somewhat lower levels of disorder on the Alcohol Use Disorders Identification Test (AUDIT) 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 in 2010, 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%.

Regarding 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. More Transitioned ADF members (15.2%) worsened from no disorder in 2010 to subsyndromal disorder than Regular ADF members (9.2%). Further, although the absolute rates were low, proportionally more Transitioned personnel (2.1%) shifted from having no alcohol disorder in 2010 to probable disorder in 2015, when compared to Regular ADF (0.2%).

In terms of those with subsyndromal alcohol disorder, only marginally more 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 an alcohol disorder in 2015 (48.8%) compared to Regular ADF (21.6%), and fewer

Transitioned ADF (43.9%) decreased alcohol use 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).

7.5.4 Depressive symptoms

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 2015, 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.

Regarding 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 being no depressive disorder in 2010 to probable disorder in 2015 when compared to Regular ADF (1.8%).

In terms of those with subsyndromal depressive disorder, marginally 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%).

Regarding those with probable disorder in 2010, more Transitioned personnel still had a 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

transitioned ADF 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.

7.5.5 Anger

Overall, there was a trend for those who transitioned to experience more anger problems than those who remained in active military service; however, the rate of increase in anger problems was similar for both groups, with anger doubling from 12.0% to 24.8% in the Transitioned ADF, and from 7.3% to 13.0% in the Regular ADF.

Regarding those with no anger problems in 2010, fewer of those who remained in the Regular ADF (10.4%) compared to those who transitioned (19.9%) reported anger problems in 2015. In terms of those with anger problems in 2010, markedly more of those who transitioned (61.3%) reported anger problems compared with those who remained in the Regular ADF (46.0%) in 2015.

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., 2011a). 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.

Transitioned ADF members 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 that 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.

7.5.6 Violence

Overall, the reported incidence of physical violence was very low: 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 rate in 2015. Among those who remained in the Regular ADF, 1.2% reported violence problems in 2010, which reduced to 0.9% in 2015.

Regarding those with no violence problems in 2010, fewer of the Regular ADF personnel (0.8%) relative to Transitioned personnel (2.1%) reported violence problems in 2015. 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.

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 than those not involved in combat (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.

7.5.7 Suicidality

In 2010, 8.8% of the 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. Rates of suicidality among those who remained in the Regular ADF also increased from 2010 to 2015, with 7.5% reporting suicidality in 2010 compared to 12.7% in 2015. Most noteworthy was the proportion who made a suicide plan, with rates more than doubling in those who remained in the Regular ADF between 2010 and 2015 (0.8% vs 2.0%).

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.

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.

Although most transitioned personnel who initially reported suicidal ideation during ADF service subsequently reported suicidal ideation after discharge, there was nonetheless an increase in suicidal ideation in Transitioned ADF members after discharge. This occurred because many Transitioned personnel who did not report

suicidal risk in 2010 did so in 2015. This suggests that those with suicidal ideation while in ADF service are at high risk after discharge, and that many others will develop suicidal ideation for the first time after transition. 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.

In addition to documenting the change in mental disorder status over time, this report also examined predictors of this change. These findings are discussed below.

7.6 Role of rank in predicting mental health status

Predictive modelling showed that Officers were less likely to develop subsyndromal or probable disorder in 2015 (as defined by the K10 and PCL-C) after having no disorder in the ADF in 2010 than Non-Commissioned Officers and those of other ranks. Similarly, Officers were less likely to retain subsyndromal status over time, or worsen from subsyndromal status to probable disorder over time. These patterns suggest that Officers are more resilient over time than other ADF personnel, possibly reflecting resilience factors that are associated with their Officer status. It is also possible that patterns observed in the better mental health of Officers are similar to those described earlier in terms of the *healthy worker effect*. That is, it is possible that personnel who remain in the ADF longer and rise to the role of Officer may do so because of their good psychological health. Further, it is possible that Officers display better mental health because of their sustained good mental health during their ADF service, or their capacity to attain the role of officer may be associated with factors that typically accompany good mental health (e.g. educational status, socio-demographic background). In any case, it suggests that policy decisions regarding monitoring and management of mental health following discharge may need to be tailored somewhat differently according to one's ADF rank. While Officers appear to be less at risk of developing a new disorder or a worsening of an existing problem following discharge than Non-Commissioned Officers or other ranks, Officers can nevertheless develop mental health difficulties. Accordingly, one needs to consider other risk factors,

including subsyndromal levels of symptoms during military service, when planning services for Officers after discharge.

7.7 Role of trauma exposure in predicting mental health status

The amount of lifetime trauma exposure played an important role in predicting the longitudinal course of mental disorder in the longitudinal cohort. Specifically, the greater the trauma exposure, the more likely ADF members worsened from no disorder in 2010 to subsyndromal disorder in 2015, and from subsyndromal in 2010 to probable disorder 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 et al., 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 personnel 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.

7.8 Role of anger in predicting mental health status

Self-reported anger in 2010 was predictive of personnel developing subsyndromal disorder in 2015, as well as predicting those who worsened from subsyndromal disorder in 2010 to probable 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 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).

7.9 Role of suicidality in predicting mental health status

Suicidality in 2010 predicted worsening from subsyndromal to probable disorder over time. 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.

7.10 Implications and synthesis of longitudinal findings

This section summarises the findings from the longitudinal analyses in the context of potential implications for how 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 personnel. Across psychological problems, Regular ADF personnel tended to have a more episodic course than Transitioned personnel, who tended to have a more consistent pattern of problems. For example, whereas 55.0% of Transitioned personnel with probable PTSD in 2010 still had PTSD in 2015, 17.7% of Regular ADF personnel still had probable PTSD in 2015. This reflects a tendency for Regular ADF personnel to show remission over time, whereas the Transitioned personnel did not show this pattern.

7.10.1 Sensitisation of stress reactions during and following ADF service

A recurrent theme to emerge from these findings was that anxiety disorders and PTSD tended to worsen following transition, and this risk was heightened if there were indications of risk of these problems during ADF service. As noted earlier in this discussion, this pattern accords with considerable evidence that anxiety conditions can worsen over time as a function of sensitisation of neural processes that occur following initial exposure to stressful events. Given the heightened risk of individuals who display subsyndromal or probable levels of anxiety or PTSD during ADF service, there is an opportunity for targeted intervention to limit the likelihood of those individuals to suffer 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-blown disorders, but rather give equal attention to those with the early signs of anxiety or PTSD.

7.10.2 Early detection of suicide risk

The *Mental Health Prevalence Report* has highlighted that those 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.

7.10.3 Prevention of alcohol abuse

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. The finding that increased alcohol problems in Transitioned personnel after discharge were not associated with differences between Regular and Transitioned ADF personnel in 2010 raises challenges for early detection and prevention. Nonetheless, efforts are needed regarding education about the risks of excessive alcohol use for those transitioning from the ADF.

7.10.4 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 its personnel. However, the findings in this report suggest that attention may be given to reviewing how separation screenings are conducted (particularly in light of this report's findings) in order to optimise this opportunity to identify those who may be more at risk of having difficulties in transition. 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 report was 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 and potentially implement screening of ADF members following discharge. 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 raises 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 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.

7.11 Limitations

It is worth noting several limitations with the current data. First, despite the large number of respondents in this cohort, there were nonetheless many categories with very small numbers in certain cells. When one has very small numbers in specific categories, it can render statistical analyses unreliable and also susceptible to misinterpretation. Accordingly, these analyses where very small numbers are cited need to be considered very tentatively and not considered indicative of robust patterns.

Second, the self-report measures employed in this study did not encompass specific measurement of anxiety and depression. The Kessler Psychological Distress 10-item scale (K10) was employed as the primary index of psychological distress, which allows comparison with other major datasets in military and civilian contexts. A drawback of the K10 is that it does not specifically disentangle anxiety and depression, and so the self-report measures are not able to identify patterns of these two dimensions.

Third, although a major strength of the current report is its capacity to consider longitudinal patterns of mental health in personnel as they transition out of the ADF, the data are limited by only having two assessment points. There are two aspects of this limitation. First, it is imperative to capture the longer-term adjustment of veterans as they progress in civilian life because the trajectories of mental health may alter over time. Second, much more statistically sophisticated analyses can be conducted when there are three, or preferably four, assessments; this many assessments allows a much more nuanced profile of the long-term adjustment of veterans and of the factors that promote different patterns of adjustment. These factors underscore the importance for both the ADF and DVA to consider further assessments of this important transition study.

7.12 Conclusion

The current longitudinal 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 PTSD were the disorder types which 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), with this risk being 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 whereby 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 probable 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 those 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 veterans to be evidence-based to optimise the likelihood that they will receive the best care available.

Annex A Mental Health and Wellbeing Transition Study methodology

This annex outlines the study design, selection criteria, instrumentation, recruitment strategy and statistical procedures used for the Mental Health and Wellbeing Transition Study.

A.1 Summary of the research

The Transition and Wellbeing Research Programme (the Programme) is a joint research initiative of the Department of Veterans' Affairs (DVA) and the Department of Defence (Defence) to examine the impact of contemporary military service on the mental, physical and social health of serving and ex-serving Australian Defence Force (ADF) members and their families. It builds on previous research and will inform effective and evidence-based health and mental health service provision.

The Programme was conducted by a consortium of six of Australia's leading research institutions, led by the Centre for Traumatic Stress Studies at the University of Adelaide and the Australian Institute of Family Studies. The consortium included researchers from Phoenix Australia – Centre for Posttraumatic Mental Health, the University of New South Wales, Monash University and the University of Sydney.

The 2010 Military Health Outcomes Program (MilHOP) detailed the prevalence of mental disorder in the 2010 Regular ADF and deployment-related health issues for those deployed to the Middle East Area of Operations (MEAO) between 2010 and 2012. Following the MilHOP, several research gaps were identified, including the mental health of ex-serving ADF members, Reservists, family members and ADF members in high-risk roles, as well as the course of mental disorders and pathways to care for individuals over time.

The Programme aimed to address these research gaps in three separate but related studies:

- the Mental Health and Wellbeing Transition Study
- the Impact of Combat Study
- the Family Wellbeing Study.

A.2 Aims of the Programme

The Transition and Wellbeing Research Programme objectives were to:

- determine the prevalence of mental disorders among ADF members who have transitioned from Regular ADF service between 2010 and 2014
- examine self-reported mental health status of Transitioned ADF and the 2015 Regular ADF
- examine the physical health status of Transitioned ADF and the 2015 Regular ADF
- assess pathways to care for Transitioned ADF and the 2015 Regular ADF, including those with a diagnosed mental disorder
- examine the factors that contribute to the wellbeing of Transitioned ADF and the 2015 Regular ADF
- 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
- investigate technology and its utility for health and mental health programs, including implications for future health service delivery
- follow up on the mental, physical and neurocognitive health and wellbeing of ADF members who deployed to the MEAO between 2010 and 2012
- investigate the social, physical and mental health and wellbeing of 2015 Ab initio Reservists (those who joined as Reservists and have only served in the Reserves)
- investigate the impact of ADF service on the health and wellbeing of the families of Transitioned ADF and the 2015 Regular ADF.

These objectives will allow Defence and DVA to:

- build on the 2010 MilHOP research to develop an understanding of how mental health changes and manifests during the readjustment phase post-separation
- develop insights into how to improve communication between contemporary veterans, DVA and Defence
- further develop the research outcomes and optimise the use of existing datasets within DVA and Defence in relation to improving the understanding of the mental health of serving and ex-serving members and the access to clinical services and their outcomes

- develop the objective knowledge base of DVA and Defence staff, and other interested parties, in the mental health of serving and transitioned members
- improve the mental health (and associated physical health) outcomes for serving and ex-serving members across all age cohorts
- allow a review of the optimal method of conducting scientifically valid and reliable research with the ADF and ex-serving members that is accepted by the participants, the ex-serving community, the ADF and DVA.

A.3 Samples

To achieve the aims of the broader research Programme, the following six overlapping samples were targeted for data collection.

A.3.1 Sample 1: Transitioned ADF

This sample comprised all ADF members who transitioned from the Regular ADF between 2010 and 2014. This included those who transitioned into the Active and Inactive Reserves, as well as those who had discharged completely from the Regular ADF. This sample comprised three groups of Transitioned ADF members: (1) MHPWS Transitioned ADF: ADF members who participated in the 2010 ADF Mental Health Prevalence and Wellbeing Study (MHPWS) as a Regular ADF member, but have since transitioned; (2) Combat Transitioned ADF: ADF members who participated in the MEAO Prospective Health Study between 2010 and 2012 and have since transitioned; and (3) ADF members who have transitioned from the Regular ADF since 2010, who were not part of the 2010 MHPWS or the MEAO Prospective Health Study. Results from these three groups were combined and weighted to represent the Transitioned ADF in 2015.

A.3.2 Sample 2: 2015 Regular ADF

This sample comprised three groups of Regular ADF members in 2015 who were invited to participate in the study: (1) those who participated in the 2010 MHPWS and were a Regular ADF member in 2015; (2) those who participated in the MEAO Prospective Health Study between 2010 and 2012 and were a Regular ADF member in 2015; and (3) a stratified random sample of Regular ADF members from 2015 who were not part of the 2010 MHPWS or the MEAO Prospective Health Study. Results from these three groups were combined and weighted to represent the 2015 Regular ADF.

A.3.3 Sample 3: Ab initio Reservists

All ADF members who joined the ADF Reserves and who continue to serve in a Reserve capacity, and who have never been a serving Regular ADF member.

A.3.4 Sample 4: ADF families

A sample of ADF families, nominated by 2015 Regular ADF and Ex-Serving ADF members participating in the Programme.

Two MilHOP samples, which were incorporated into samples 1 and 2 above for the purposes of analysis, were also followed up as part of an ongoing program of longitudinal health surveillance. These samples were:

A.3.5 Sample 5: Combat Zone group

All ADF members who participated in the MEAO Prospective Health Study, comprising members who were deployed to the MEAO after June 2010 and returned from deployment by June 2012.

A.3.6 Sample 6: MHPWS

All individuals who participated in the 2010 MHPWS component of the MilHOP (2010 ADF). This sample comprised two groups: (1) Transitioned ADF: ADF members who participated in the 2010 MHPWS as a Regular ADF member but have since transitioned; and (2) 2015 Regular ADF: Regular ADF members who participated in the 2010 MHPWS and were in the 2015 Regular ADF.

DVA and Defence have commissioned several reports from the research Programme, and Table A.1 presents the samples that each report covers. All samples were drawn from the Military and Veteran Research Study Roll, which is described in subsection A.11.2 of this annex.

A.4 Population comparison samples

A.4.1 Sample 7: 2010 Regular ADF comparison

Results drawn from the 2010 MHPWS report were directly imputed into this report to provide an indication of the change in self-reported mental health between the 2010 Regular ADF and the 2015 Regular ADF. These results should be interpreted with caution due to the overlapping nature of these two populations.

A.4.2 Sample 8: Comparison of Transitioned ADF with the Australian community (2014–2015)

To enable comparison of estimates in the Transitioned ADF with an Australian community population, direct standardisation was applied to estimates within the 2014–2015 Australian Bureau of Statistics (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. The NHS data were restricted to those aged 18 to 71 (consistent with the Transitioned ADF). The NHS data were standardised by

sex, employment status (employed or not) and age category (18–27, 28–37, 38–47, 48–57 and 58+), and estimates were generated on the outcomes of interest. Standard errors for the NHS data were estimated using the replication weights provided in the NHS data file.

Table A.1 Transition and Wellbeing Research Programme – commissioned 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. 2. Examine self-reported mental health status of Transitioned ADF and the 2015 Regular ADF.	<i>Mental Health Prevalence Report</i>
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 programs, 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/disorders 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>

A.5 Response rates

A.5.1 Survey responders

Overall, there was a response rate of 29.1% for the entire survey across both the Transitioned ADF and Regular ADF (total responders/total invited). As at 15 December 2015, 18.0% (4,326) of the 23,974 Transitioned ADF members invited to participate had completed a survey. In contrast, response rates in the invited 2015 Regular ADF (20,031) were much higher, with 42.3% of the 2015 Regular ADF who were invited to participate completing a survey. However, it is important to note that not all Regular ADF members were invited to participate in the survey, with invitations restricted to a stratified random sample of 5,040 ADF members and Regular ADF members who previously participated in the MilHOP. Similarly, 958 Transitioned ADF members were not invited to participate in the survey because they had opted out of the Study Roll, had opted out of being contacted further, or there was insufficient address information.

Table A.2 and Figure A.1 summarise the breakdown of Transitioned ADF and 2015 Regular ADF members with enough data to be included in the survey. Table A.3 describes the demographic profile of this group.

Table A.2 Survey response rates by Service, sex, rank and medical fitness for Transitioned ADF and 2015 Regular ADF

	Transitioned ADF (n = 24,932)				2015 Regular ADF (n = 52,500)			
	Population	Invited	Responders	Response rate %	Population	Invited	Responders	Response rate %
Service								
Navy	5671	5495	863	15.7	13,282	5113	2040	39.9
Army	15,038	14,465	2463	17.0	25,798	8067	3500	43.4
Air Force	4223	4014	1000	24.9	13,420	6851	2940	42.9
Sex								
Male	21,671	20,713	3646	17.6	47,645	15,176	6693	44.1
Female	3261	3261	380	20.9	4855	4855	1787	36.8
Rank								
Officer	4063	3939	1259	32.0	13,444	7847	3538	45.1
NCO	7866	7393	2097	28.4	17,491	9117	4336	47.6
Other Ranks	13,003	12,642	970	7.7	21,565	3067	606	19.7
Medical fitness								
Fit	18,273	17,525	2981	17.0	46,022	17,097	7116	41.6
Unfit	6659	6449	1345	20.9	6478	2934	1364	46.5
Total	24,932	23,974	4326	18.0	52,500	20,031	8480	42.3

NCO = Non-Commissioned Officer

Note: Unweighted data.

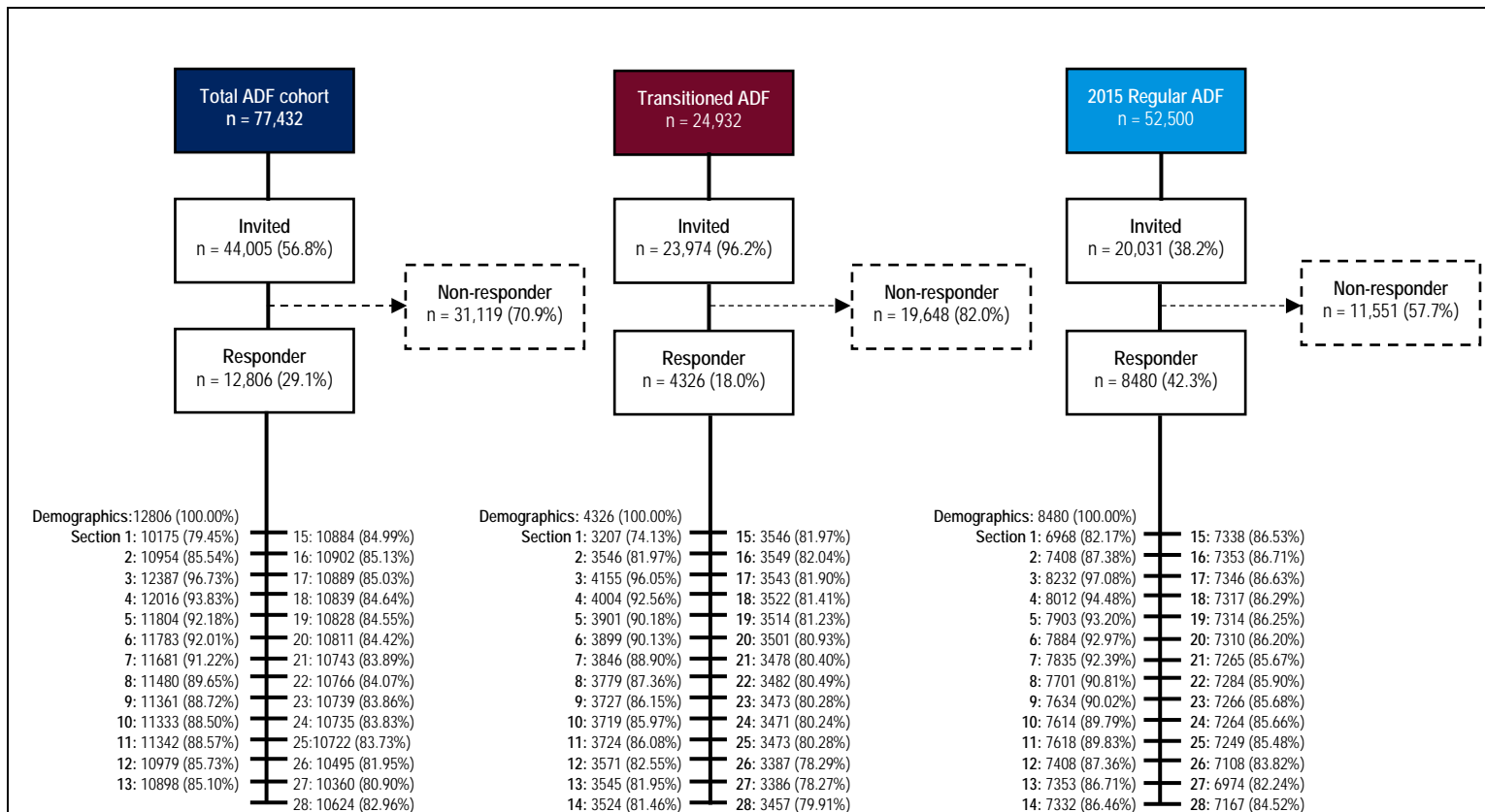
The characteristics of survey respondents were as follows:

Sex – Consistent with the Transitioned ADF population, the sample was predominantly male, with transitioned females being significantly more likely to respond than transitioned males. In the 2015 Regular ADF population, females were less likely to respond than males.

Age – Transitioned ADF survey responders (mean age 41.9 (SE 0.2)) were similar in age to the 2015 Regular ADF responders (mean age 41.1 (SE 0.1)).

Rank – Survey responders from the Transitioned ADF comprised 29.1% Officers, 48.5% Non-Commissioned Officers and 22.4% Other Ranks. In the 2015 Regular ADF, there was a similar distribution, with 41.7% Officers, 51.1% Non-Commissioned Officers and 7.2% Other Ranks. The Transitioned ADF population had significantly lower response rates for Officers and Non-Commissioned Officers, but significantly higher response rates in the Other Ranks compared to the 2015 Regular ADF. In both the Transitioned and 2015 Regular ADF survey groups, the lower ranks were the poorest responders.

Figure A.1 Survey response rates for Transitioned ADF and 2015 Regular ADF



Service – In the Transitioned ADF survey group, 19.9% of survey responders were Navy, 56.9% were Army and 23.1% were Air Force. However, for the Regular 2015 ADF, 34.7% of survey responders were Navy, 41.3% were Army and 24.1% were Air Force. When response rates in the different Services were compared, Transitioned Air Force members were most likely to respond, whereas Transitioned Army and Transitioned Navy members were least likely to respond. In the 2015 Regular ADF, the Army had the highest response rate at 41.3%.

Medical fitness – Transitioned ADF who were medically unfit on transition from the 2015 Regular ADF were slightly overrepresented in the responder group (31.1%) compared to the 2015 Regular ADF population (16.1%). Transitioned ADF who were medically unfit had a response rate of 21.0% compared to 46.5% in the 2015 Regular ADF population.

Table A.3 Unweighted demographic characteristics of responders by Transitioned ADF and 2015 Regular ADF

	Transitioned ADF (n = 4326)			2015 Regular ADF (n = 8480)		
	n	%	95% CI	n	%	95% CI
Age (mean, SE)	41.9	0.2		41.1	0.1	
Age group						
18–27	471	10.9	(10.0–11.9)	602	7.1	(6.6–7.7)
28–37	1262	29.2	(27.8–30.5)	2484	29.3	(28.3–30.3)
38–47	1119	25.9	(24.6–27.2)	2976	35.1	(34.1–36.1)
48–57	871	20.1	(19.0–21.4)	2069	24.4	(23.5–25.3)
58+	548	12.7	(11.7–13.7)	201	2.4	(2.1–2.7)
Sex						
Male	3646	84.3	(83.2–85.3)	6693	78.9	(78.0–79.8)
Female	680	15.7	(14.7–16.8)	1787	21.1	(20.2–22.0)
Rank						
Officer	1259	29.1	(27.8–30.5)	3538	41.7	(40.7–42.8)
Non-Commissioned Officer	2097	48.5	(47.0–50.0)	4336	51.1	(50.1–52.2)
Other Ranks	970	22.4	(21.2–23.7)	606	7.2	(6.6–7.7)
Service						
Navy	863	19.9	(18.8–21.2)	2940	34.7	(33.7–35.7)
Army	2463	56.9	(55.5–58.4)	3500	41.3	(40.2–42.3)
Air Force	1000	23.1	(21.9–24.4)	2040	24.1	(23.2–25.0)
Medical fitness [#]						
Fit	2981	68.9	(67.5–70.3)	7116	83.9	(83.1–84.7)
Unfit	1345	31.1	(29.7–32.5)	1364	16.1	(15.3–16.9)

[#] Refer to glossary for a definition of 'medical fitness'.

Notes

Denominator: Those who were invited and responded to the survey.

Unweighted data.

95% CI: 95% confidence interval; SE: standard error.

A.5.2 CIDI responders

In phase 2 of the research, a subsample of 1,384 individuals from the stratified Transitioned ADF group, 1,088 individuals from the MHPWS group, and 183 from the Combat Zone group were selected to participate in a one-hour telephone interview using the World Mental Health Survey Initiative version of the World Health Organization's Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) (Kessler & Ustun, 2004). Data from all three groups was used to estimate prevalence of mental disorder in the Transitioned ADF.

Stratified Transitioned ADF

A total of 1,384 participants were stratified and sought for participation (selected) in the CIDI 3.0. Of those selected, 53.8% (745) completed the interview. Table A.4 describes the response rates for the stratified Transitioned ADF undertaking the CIDI 3.0 and Table A.5 describes the demographic profile of this group.

Table A.4 CIDI response rates for stratified Transitioned ADF by Service, sex, rank and Medical Employment Classification status

	Stratified Transitioned ADF CIDI (n = 1384 (selected); n = 745 (responded))			
	Population	Selected	Responders	Response rate (%)
Service				
Navy	5671	285	150	52.6
Army	15,038	795	424	53.3
Air Force	4223	304	171	56.3
Sex				
Male	21,671	1140	631	55.4
Female	3261	235	109	45.0
Rank				
Officer	4063	423	252	59.6
Non-Commissioned Officer	7866	694	389	56.1
Other Ranks	13,003	267	104	39.0
Medical fitness[#]				
Fit	18,273	932	521	55.9
Unfit	6659	443	219	49.4
Total	24,932	1384	745	53.8

[#] Refer to glossary for a definition of 'medical fitness'.

Notes

Denominator: Transitioned ADF invited to participate in the Composite International Diagnostic Interview (CIDI).
Unweighted data.

The characteristics of Transitioned CIDI respondents were as follows:

Sex – Consistent with the Transitioned ADF population, the CIDI sample was predominantly male; however, transitioned females were less likely to complete a CIDI than transitioned males.

Age – Transitioned CIDI respondents were significantly older 45.6 (SE 0.4) than non-responders 40.4 (SE 0.5).

Rank – CIDI responders comprised 33.8% Officers, 52.2% Non-Commissioned Officers and 14.0% Other Ranks. ADF members in the Other Ranks had a significantly lower response rate (39.0%) compared to above 50% for those invited in Non-Commissioned Officers and Officers, who were more likely to respond.

Service – 20.1% of CIDI responders were Navy, 56.9% were Army and 23.0% were Air Force. There was no significant difference between CIDI responders and non-responders in relation to Service.

Medical fitness – Transitioned ADF who were medically unfit on transition from Regular ADF comprised 29.4% of CIDI responders.

Table A.5 Demographic characteristics of stratified Transitioned ADF CIDI responders

	Stratified Transitioned ADF CIDI responders (n = 745)		
	n	%	95% CI
Age (mean, SE)	45.6	0.4	
Age group			
18–27	50	6.7	(5.1–8.7)
28–37	171	23.0	(20.1–26.1)
38–47	177	23.0	(20.8–26.9)
48–57	179	24.0	(21.1–27.2)
58+	163	21.9	(19.1–25.0)
Sex			
Male	631	84.7	(81.9–87.1)
Female	109	14.6	(12.3–17.4)
Rank			
Officer	252	33.8	(30.5–37.3)
Non-Commissioned Officer	389	52.2	(48.6–55.8)
Other Ranks	104	14.0	(11.7–16.6)
Service			
Navy	150	20.1	(17.4–23.2)
Army	424	56.9	(53.3–60.4)
Air Force	171	23.0	(20.1–26.1)
Medical fitness[#]			
Fit	521	69.9	(66.5–73.1)
Unfit	219	29.4	(26.2–32.8)

[#] Refer to glossary for a definition of ‘medical fitness’.

Notes

Denominator: Transitioned ADF invited to participate in the Composite International Diagnostic Interview (CIDI).

Unweighted data.

95% CI: 95% confidence interval; SE: standard error.

Mental Health Prevalence and Wellbeing Study group

A total of 1,088 participants from this group were invited to participate in the CIDI 3.0. Of those invited, 76.8% (835) completed the interview. Table A.6 describes the response rates for this group.

Table A.6 CIDI response rates for the MHPWS group, by Service, sex, rank and Medical Employment Classification status

	MHPWS CIDI (n = 1088 (invited); n = 835 (responded))		
	Invited	Responders	Response rate (%)
Service			
Navy	237	175	73.8
Army	462	349	75.5
Air Force	389	311	80.0
Sex			
Male	903	698	77.3
Female	182	135	74.2
Missing	3	2	66.7
Rank			
Officer	451	375	83.2
Non-Commissioned Officer	576	425	73.8
Other Ranks	61	35	57.4
Medical fitness[#]			
Fit	758	590	77.8
Unfit	327	243	74.3
Missing	3	2	66.7
Total	1088	835	76.8

[#] Refer to glossary for a definition of 'medical fitness'.

Notes

Denominator: MHPWS sample invited to participate in the Composite International Diagnostic Interview (CIDI).

Unweighted data.

The characteristics of the MHPWS group CIDI respondents are as follows:

- **Sex** – The MHPWS sample consisted of both 2015 Regular and Transitioned ADF members. Consistent with the ADF population, the CIDI sample was predominantly male, with females being less likely to respond than males.
- **Rank** – CIDI responders in this group consisted of 44.9% Officers, 50.9% Non-Commissioned Officers and 4.2% Other Ranks. Other Ranks were less likely to respond than the other two rank categories.
- **Service** – 21.0% of survey responders were Navy, 41.8% were Army and 37.2% were Air Force. There was no difference between CIDI responders and non-responders in relation to service.

- **Medical fitness** – ADF members who were medically unfit were similarly represented in the CIDI responder group (29.1%) compared to those selected (30.1%). ADF members who were medically fit were also similarly represented in the CIDI responder group (70.7%) compared to 69.7% in the invited population. Therefore, the responder sample was representative in terms of medical fitness of the selected group.

Combat Zone group

A total of 183 participants from this group were invited to participate in the CIDI 3.0. Of those invited, 76.5% (140) completed the interview. Table A.7 describes the response rates for this group.

Table A.7 CIDI response rates for the Combat Zone group, by Service, sex, rank and Medical Employment Classification status

	Combat Zone group CIDI (n = 183 (invited); n = 140 (responded))		
	Invited	Responders	Response rate (%)
Service			
Navy	10	10	100.0
Army	143	111	77.6
Air Force	0	0	0.0
Missing	30	19	63.3
Sex			
Male	148	118	79.7
Female	2	2	100.0
Missing	33	20	60.6
Rank			
Officer	20	16	80.0
Non-Commissioned Officer	101	77	76.2
Other Ranks	47	39	83.0
Missing	15	8	53.3
Medical fitness[#]			
Fit	130	103	79.2
Unfit	21	17	81.0
Missing	32	20	62.5
Total	183	140	76.5

[#] Refer to glossary for a definition of 'medical fitness'.

Notes

Denominator: Combat Zone sample invited to participate in the Composite International Diagnostic Interview (CIDI).
Unweighted data.

The characteristics of the Combat Zone group CIDI respondents were as follows:

- **Sex** – The Combat Zone CIDI sample consisted of both 2015 Regular ADF and Transitioned ADF members. Consistent with the ADF population, the CIDI sample was almost entirely male. Of the two females selected, both responded.

- **Rank** – CIDI responders in this group consisted of 11.4% Officers, 55.0% Non-Commissioned Officers and 27.9% Other Ranks. Other Ranks were less likely to respond than the other two ranking categories.
- **Service** – 7.1% of survey responders were Navy, 79.3% were Army and 0.0% were Air Force. There was no difference between CIDI responders and non-responders in relation to Service.
- **Medical fitness** – ADF members who were medically unfit were similarly represented in the CIDI responder group (12.1%) compared to those selected (11.5%). ADF members who were medically fit were also similarly represented in the CIDI responder group (73.6%) compared to 71.0% in the invited population. Therefore, the responder sample was representative in terms of medical fitness of the selected group.

A.6 Study overview

Prevalence estimates were obtained using a two-phase design. This is a well-accepted approach to epidemiological research (Salim & Welsh, 2009), and was utilised in the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011). In the first phase, participants completed a screening questionnaire. This provided the research team with a clear picture of psychological symptoms from a dimensional perspective.

Based on certain key results from the survey and specific demographic factors, a subset of participants was also selected to participate in a one-hour diagnostic mental health telephone interview. Additional biological, neurocognitive testing and magnetic resonance imaging (MRI) was undertaken by participants in the Combat Zone sample. A detailed description of this additional testing is not provided here but will be provided in a later report.

Interview data for the Transitioned ADF were weighted to ensure the representativeness of the prevalence estimates for key subgroups within the total Transitioned ADF population. Self-report survey data were also weighted to be representative of both the Transitioned ADF and the 2015 Regular ADF.

A.7 Measures

A.7.1 Phase 1: Self-report survey

In phase 1 of the Mental Health and Wellbeing Transition Study, 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 either online or in hard copy. This survey was developed at the beginning of the study period in close consultation with DVA and Defence. Survey anonymity was preserved via the allocation of a unique study ID number to each participant. Participants who previously completed a survey as part of the 2010 ADF Mental Health Prevalence and Wellbeing Study were allocated their same MilHOP study ID number.

Participants were able to complete the survey in one of two ways:

- Online – participants were sent an email that included a secure link to an online invitation package containing the web-based survey. Participants could only access the survey by entering their unique study ID number and password, which was provided to them in the invitation email.
- In hard copy – participants could opt to complete a hard copy version of the questionnaire, which was then mailed to their current postal address.

Each participating sample received a slightly different questionnaire relevant to their current ADF status – Transitioned ADF member, 2015 Regular ADF member, or Ab Initio Reservist – in regard to demographics, Service and deployment history; however, the core-validated measures of psychological and physical health remained the same and replicated where possible the measures previously administered as part of the MHPWS in 2010. This component of the design is critical to the longitudinal comparisons across time and highlights the importance of a consistent approach to the oversight of research design of military and veteran populations over time.

Prior to rollout, the online and hard copy versions of the self-report survey were piloted on a select group of 2015 Regular ADF and ex-serving ADF members. Individuals in the pilot group were asked to provide detailed feedback pertinent to the content and adequacy of the survey and the usability of the system and form. Their comments and feedback were subsequently incorporated into the final version of the survey. This ensured that there were no mistakes in the survey or glitches in the system prior to the study rolling out.

Please note that details of the survey provided to participants belonging to the Combat Zone sample are not provided here, but will be provided in a later report.

Part 1 of survey: Demographics and Service details

Part 1 of the survey was completed by all samples and comprised the major sections described below.

Demographic information

Participants were asked to provide demographic information for sex, date of birth and highest educational qualification attained. These items were taken directly from the 2010 MHPWS (McFarlane et al., 2011).

Household and family structure

Participants were asked questions about their relationship status, household structure and children. Items in this section were derived from several sources including the Timor-Leste Family Study (McGuire et al., 2012), the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Watson & Wooden, 2002) and the 2014 Vietnam Veterans Family Study conducted by DVA (Forrest, Edwards & Daraganova, 2014).

Financial status

Items assessing participants' current financial status, including financial hardship, were taken from the HILDA Survey (Watson & Wooden, 2002) and the Health and Wellbeing Survey of Serving and Ex-Serving Personnel of the UK Armed Forces: Phase 2 (Fear et al., 2010).

Homelessness

This section of the survey comprised eight questions from the 2010 General Social Survey (Australian Bureau of Statistics, 2011), which addressed lifetime and recent episodes of homelessness. Items looked at:

- participants' experiences of homelessness
- reasons for homelessness
- frequency of homelessness
- details about their most recent experience of homelessness (reason for homelessness, time frame, recency)
- assistance sought during period(s) of homelessness, and helpfulness of these services
- barriers to seeking support.

ADF service details

Participants were asked a series of questions specific to their employment with the ADF, including the number of years served, current service status, hours worked per week, rank and Service. Depending on their rank and Service, participants were also asked a series of questions pertaining to their specialty and specific role within the ADF. Items in this section were taken from the 2007 National Survey of Mental Health

and Wellbeing (Australian Bureau of Statistics, 2008) and the 2011 Australian Defence Force Exit Survey (Shirt, 2012).

Feelings about the ADF

This section of the survey aimed to assess participants' level of organisational commitment. Four items were taken from Allen and Meyer's Affective Commitment Scale (Allen & John, 1990), and the other four items were developed by researchers for the study.

Transitioned ADF members were also asked additional questions in part 1 of the survey, pertaining to the items described below.

Employment status

In this section of the survey, participants were asked about their current employment activities. Examples of options included 'full-time work greater than or equal to 30 hours paid employment per week', 'home duties' and 'unemployed/looking for work'. Unemployed members were also required to provide a reason for their unemployed status. Items in this section were taken from the Young and Well Cooperative Research Centre standard suite of measures (Young and Well Cooperative Research Centre, 2013) and the Health and Wellbeing Survey of Serving and Ex-Serving Personnel of the UK Armed Forces: Phase 2 (Fear et al., 2010).

Participants were also required to provide details about their current civilian employment, including the number of hours worked per week, the industry of employment and their main source of income. Items in this section were derived from the Health and Wellbeing Survey of Serving and Ex-Serving Personnel of the UK Armed Forces: Phase 2 (Fear et al., 2010), the Australian Defence Force Exit Survey (Shirt, 2012), and the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Watson & Wooden, 2002). Participants were also asked to indicate whether they had experienced a period of unemployment greater than three months since transitioning, and when this period began. This item was taken from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Reservist status

In this section of the survey, participants were asked about their Reservist status and, where relevant, to provide details pertaining to their Reservist employment, including their full-time/part-time status, the number of hours worked, and weeks away for Reservist work. Items in this section were taken from the Soldier Wellbeing Survey (Riviere, Kendall-Robbins, McGurk, Castro & Hoge, 2011; Thomas et al., 2010).

Year of transition

Participants were asked to indicate what year they transitioned into Active Reserves/Inactive Reserves/out of the ADF. These questions were taken from the

Health and Wellbeing Survey of Serving and Ex-Serving Personnel of the UK Armed Forces: Phase 2 (Fear et al., 2010) and the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Change in relationship status

Participants were asked to indicate whether their relationship status had changed since transitioning from full-time Regular ADF service. If divorced, separated or widowed since transition, participants were asked to provide a date. This item in the survey was taken from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

ADF separation details

This section of the survey comprised two parts. First, participants were asked about their discharge/resignation category. Examples of options included 'medical discharge', 'compassionate grounds' and 'end of fixed-period engagement'. In part 2, participants were provided with a comprehensive list of reasons for leaving the ADF and asked to mark all that played a role in their decision to leave. Participants were also asked to indicate the main reason of those selected. Items in this section were based on the current exit survey utilised by the ADF (Shirt, 2012).

ADF Reservists were also asked additional survey questions pertaining to the items described below.

Reservist details

Participants were asked to provide details in relation to the following: length of time served as a Reservist, Reservist status, periods of continuous full-time service, hours worked per week in the past month, weeks away in the past five years, and satisfaction with participation in the Reserves. Items in this section were derived from the Soldier Wellbeing Survey (Riviere et al., 2011; Thomas et al., 2010), the Health and Wellbeing Survey of Serving and Ex-Serving Personnel of the UK Armed Forces: Phase 2 (Fear et al., 2010) and the RAND Guard/Reserve Survey of Officer and Enlisted Personnel (Kirby & Naftel, 1998). Other items were developed specifically by researchers for use in the study.

Civilian employment

Participants were asked a series of questions about the following in relation to their civilian role (if relevant): employer knowledge of Reservist role, employer attendance at Reservist events, employer support of military affiliation, impact of Reservist duties on civilian role, and a comparison of duties and responsibilities across Reservist and civilian roles. Items in this section were derived from the Soldier Wellbeing Survey (Riviere et al., 2011; Thomas et al., 2010), the Middle East Area of Operations (MEAO) Health Study: Prospective Study (Davy et al., 2012) and the ADF Exit Survey (Shirt, 2012). Information surrounding current employment activities and details of civilian

employment was also collected, as described above in the additional survey questions posed to Transitioned ADF members.

Contribution to the ADF

Participants' perception of their contribution to the ADF was measured via a single item – 'How important do you think your contribution is towards the ADF?' Anchors ranged from 'not at all important' to 'very important'. This item was taken from the RAND Guard/Reserve Survey of Officer and Enlisted Personnel (Kirby & Naftel, 1998).

How the ADF deals with Reservists

Participants' perceptions of how well the ADF deals with, understands and accepts Reservists were assessed via three items measured on a 5-point scale ranging from 'very poor' to 'very good'.

Getting help (Reservist specific)

This section of the survey was developed by researchers and looked at the following: mental health problems resulting from Reservist experience, help sought for these problems, help sought and received from ADF services/non-Defence organisations, and benefits sought and received from DVA.

Part 2 of survey: Mental Health and Wellbeing Transition Study

Part 2 of the survey was completed by all samples specific to the Mental Health and Wellbeing Transition Study and included factors described in the following sections.

Deployments

In this section of the survey, participants were asked to provide detailed information about their deployment history with the ADF. Deployments were grouped into the following categories: warlike/active service, non-warlike (peacekeeping) service, humanitarian/disaster relief, Defence aid and border protection. For each applicable deployment listed, participants were asked to indicate which country they were deployed to, the name of the operation, the dates they were deployed, the number of times they were deployed, the total number of months deployed, and whether they were deployed in a combat capacity. Items in this section were adapted from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Deployment exposure

Participants were presented with a list of deployment exposures and asked to indicate how many times they had experienced each one during their military career. Response categories ranged from 'never' to '10+ times'. Examples of events included 'exposure to hazardous materials', 'discharge of weapon in direct combat', and 'handled or saw dead bodies'. Items in this section were drawn from the Middle East Area of Operations Census Study (Dobson et al., 2012).

Quality of life

This section of the survey comprised three items that assessed general health, satisfaction with health, and quality of life. General health was measured via the first item of the Short Form (36) Health Survey (SF-36) (Ware & Sherbourne, 1992), referred to as the Short Form 1 (SF1). The SF1 is a single item that is increasingly being utilised in population studies as an indicator of overall health status. Items assessing general health and satisfaction with health were taken from the 2011 Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Depression

Self-reported depression was examined using the Patient Health Questionnaire 9-item scale (PHQ-9) (Kroenke et al., 2001). 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.

Generalised anxiety disorder

Generalised anxiety disorder was measured via the Generalised Anxiety Disorder 7-item scale (GAD-7) (Spitzer, Kroenke, Williams & Lowe, 2006). Each of the seven items is scored from 1 to 3, providing a total generalised anxiety score ranging between 0 and 21. Participants were asked to rate each item in the GAD-7 in relation to the last two weeks only.

Sleep problems

Self-perceived insomnia was examined via the Insomnia Severity Index (ISI) (Bastien, Vallieres & Morin, 2001). The ISI comprises seven items assessing the severity of sleep-onset and sleep maintenance difficulties, satisfaction with current sleep pattern, interference with daily functioning, noticeability of impairment attributed to the sleep problem, and degree of distress or concern caused by the sleep problem.

Each item is rated on a 0–4 scale and the total score ranges from 0 to 28. A higher score suggests more severe insomnia.

General psychological distress

The Kessler Psychological Distress 10-item scale (K10) (Kessler et al., 2002) is 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) and were used to identify levels of psychological distress

in the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Anger

The Dimensions of Anger Reactions 5-item scale (DAR-5) (Forbes et al., 2004) is a concise measure of anger. It consists of five items that address anger frequency, intensity, duration, aggression, and interference with social functioning. Items are scored on a 5-point Likert scale generating a severity score ranging from 5 to 25, with higher scores indicative of 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.

Physical violence

Items addressing participants' personal experiences with physical violence or threatened violence were taken from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Suicidal ideation and behaviour

Twelve-month suicidal ideation and behaviour was assessed via four items that looked specifically at suicidal thoughts, plans and attempts. Three of the items in this section were adapted from the National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2008), and the final item was devised by researchers for use in the current study.

Perceptions of mental health

Items addressing participants' perceptions of their current and future physical and mental health were developed by researchers for use in the study.

Lifetime exposure to traumatic events

Lifetime exposure to trauma was examined as part of the PTSD module of the CIDI 3.0 (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.

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.

Posttraumatic stress disorder

The PTSD Checklist – civilian version (PCL-C) (Weathers et al., 1993) is 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.

Recent life events

Participants completed a modified, 15-item version of the List of Threatening Experiences (Brugha, Bebbington, Tennant & Hurry, 1985). This brief questionnaire is frequently used to assess recent stressful life events. Participants were asked to indicate 'yes' if the event had occurred in the last 12 months, and whether or not it was still having an effect on their life. Examples of events include 'your parent, child or spouse died', 'you had a major financial crisis' and 'you broke off a steady relationship'.

Alcohol use

Alcohol consumption and problem drinking was examined using the Alcohol Use Disorders Identification Test (AUDIT) (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 an instrument that is widely used in epidemiological and clinical practice for defining at-risk patterns of drinking (Babor et al., 2001). Currently, the recommended World Health Organization risk categories are utilised with ADF populations and are also therefore the scoring categories utilised in this study. This process identifies four bands of risk: Band 1 (scores of 0–7) represents those who would benefit from alcohol education; Band 2 (8–15) represents those who are likely to require simple advice; Band 3 (scores of 16–19) are those where counselling and

continued monitoring is recommended; and Band 4 (scores of 20–40) requires diagnostic evaluation and treatment, including counselling and monitoring (Babor et al., 1989; Babor et al., 2001).

Two additional supplementary items of the AUDIT were also included in the questionnaire, as well as additional items on consumption, to ensure comparability with the Australian Health Survey 2011–2012 (Australian Bureau of Statistics, 2012).

Tobacco use

Items assessing tobacco usage were taken from the 2013 National Drug Strategy Household Survey (Australian Institute of Health and Welfare, 2014) and the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011). Participants were asked a series of questions about their past and present tobacco usage, including frequency of use, the ages they started and stopped smoking daily, and the types of tobacco products they had smoked in the last year.

Drug use

Twelve-month and lifetime drug use in Transitioned ADF only was measured using modified items from the 2013 National Drug Strategy Household Survey (Australian Institute of Health and Welfare, 2014). Transitioned ADF were asked a series of questions about two categories of drugs: (1) illicit drugs (including meth/amphetamines, marijuana, heroin, methadone or buprenorphine, cocaine, hallucinogens, ecstasy, ketamine, GHB, inhalants, opiates, opioids), and (2) prescription drugs (including painkillers/analgesics, tranquilisers/sleeping pills) for non-medical purposes (where the term non-medical purposes was defined as either alone or with other drugs in order to induce or enhance a drug experience). Participants were asked if they had ever used these drugs in their lifetime or the last 12 months, and the age that they first used them.

Functioning

Functional impairment was assessed via the Sheehan Disability Scale (Sheehan, 1983), a 5-item self-report measure of disability due to mental health symptoms in three interrelated domains: work/school, social life and family life. The three items assessing impairment in the three domains are scored from 0 to 10 and can yield a total global functional impairment score of between 0 and 30.

Getting help

This section of the survey was developed by key study investigators with specific knowledge and experience within the field. Other items were taken from the 2007 National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2008), the CIDI 3.0 (Haro et al., 2006), and the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011) and modified by investigators to suit the current research.

Means of informing/assessing and maintaining mental health

The first series of questions looked at specific help-seeking strategies utilised by participants to inform/assess and maintain their mental health in the last 12 months, and whether or not they found these strategies to be helpful. The 32 items looking at ways in which people informed/assessed their mental health were developed specifically for the study by researchers. The four items looking at the ways in which people maintained their mental health were taken from the CIDI 3.0 (Haro et al., 2006).

A single item asked participants to indicate their preferred means of receiving information about their mental health. Options included via telephone, the internet, or in person (face to face). This item was developed by researchers for use in the study.

Barriers to care and stigma

Participants were asked to rate the degree to which a list of ‘concerns’ might affect their decision to seek help on a 5-point scale. Anchors ranged from ‘strongly disagree’ to ‘strongly agree’. Items in this section were taken from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011), the Canadian Air Forces Recruit Mental Health Service Use Questionnaire (Fikretoglu, Blais & Lam, 2014), and the Solider Wellbeing Survey (Riviere et al., 2011; Thomas et al., 2010), with several additions by investigators. Examples of items include ‘I wouldn’t know where to get help’, ‘it’s too expensive’ and ‘I don’t trust mental health professionals’.

This section of the survey also included a question that tapped into unmet needs for help. This question targeted individuals who expressed concerns about their mental health but never sought help. Participants were presented with a list of seven barriers and asked to indicate how much they disagreed with each one on a 5-point scale ranging from ‘strongly disagree’ to ‘strongly agree’. Examples of statements include ‘I can still function effectively’ and ‘I didn’t know where to get help’.

Items addressing barriers to care in both of sets of questions listed above fell into the following categories:

- perceived control
- self-stigma
- public stigma
- perceived stigma
- mental health literacy
- physical barrier to care
- career barriers.

Concerns about mental health

Items addressing participants' concerns about their mental health were developed specifically for the study by investigators.

Assistance with mental health

Items addressing assistance sought for mental health were taken from the 2010 ADF Mental Health Prevalence and Wellbeing Study (McFarlane et al., 2011).

Help received and pathways into care

Participants were asked whether they had ever sought or received help from the following list of doctors or professionals for their own mental health in the past 12 months or outside of the past 12 months:

- general practitioner/medical officer
- psychologist
- psychiatrist
- other mental health professional.

For each of the professionals listed above, participants were asked to indicate what services they received, whether they were satisfied with the services, and what compensation (if any) was received. These items were taken from the CIDI (Haro et al., 2006) and adapted for use in the current study.

Participants were also asked whether they had ever utilised the following services in the past 12 months or outside of the past 12 months:

- inpatient treatment, hospital admission
- hospital-based PTSD program
- residential alcohol and other drug program.

For each of the treatments/programs listed above, participants were asked to indicate whether they were satisfied with the service, and how the service was paid for. These items were taken from the CIDI (Haro et al., 2006) and adapted for use in the current study.

Satisfaction with mental health services received

Participants were asked to rate their satisfaction/dissatisfaction with a series of factors associated with receiving mental health care/services. Items included accessibility, cost, location, effectiveness, health professional competence, health professional friendliness, convenience, confidentiality and Medicare cap. Participants were required to provide answers in relation to their experiences in the past 12 months only.

Doctor-diagnosed mental health conditions

This section of the survey asked participants about mental health problems or conditions that they had ever been diagnosed with or treated for by a medical doctor over their lifetime. If a participant said 'yes' to any of the items listed, they were also asked to specify the year they were first diagnosed, whether they had been treated by a doctor for the condition in the past year, and finally whether they had taken medication for the condition in the past month. Items in this section were derived from the 2011 Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Undiagnosed mental health conditions

Participants were presented with a list of mental disorders and asked to indicate whether they currently had (or ever had) each disorder without having been diagnosed or treated for it. Conditions included alcohol abuse or dependence, drug abuse or dependency, stress or anxiety, depression, and PTSD. This question was developed by researchers at the Centre for Traumatic Stress Studies to tap into undiagnosed mental conditions.

Help-seeking latency

In order to assess help-seeking latency, participants were asked to indicate when they first sought help for their own mental health. Options included 'within 3 months of becoming concerned' or 'within 1 year of becoming concerned'. Alternatively, participants were able to specify the number of years since becoming concerned. This item was developed by researchers for use in the study.

Recommendation to seek help/assistance with seeking help

This section of the survey comprised two questions. The first item asked participants whether someone else suggested that they seek help for their mental health condition. The second item asked participants whether someone else practically assisted them in seeking care. Options included their GP, medical officer, partner, other family member, friend/colleague, or their supervisor/manager/commander. These questions were developed by researchers for specific use in the study.

Reasons for seeking care

Participants were asked to indicate what primary and secondary reason led them to seeking care. Examples included 'anger', 'depression' and 'gambling'. These two questions were developed by researchers for specific use in the study.

Health professionals

In this section of the survey, participants were presented with an exhaustive list of health professionals and asked to indicate which of them they had consulted for their own health in the past 12 months. Participants were also asked to indicate how many times they had consulted a general practitioner and/or specialist doctor in the last two

weeks. All items in this section were taken from the 2011 Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Family and children

This section of the survey comprised several scales looking at participants' relationships with their family and children.

Family support and strain was assessed via items of relevance from an adapted version of the Schuster Social Support Scale (Schuster, Kessler & Aseltine, 1990). Affective support was indicated by responses to questions about how often family made them feel cared for and how often family expressed interest in how they were doing. Negative interactions were indicated by responses to questions about how often family made too many demands on them, how often family criticised them, and how often family created tensions or arguments with them. All items were answered on 4-point Likert-type scale ranging from 'often' to 'never'.

Items assessing participants' relationship with their current partner, arguments with their current partner and abuse experienced by their partner were taken from the Timor-Lest Family Study (McGuire et al., 2012).

A single item looking at how often participants had contact with family members not living with them was taken from the 2014 Vietnam Veterans Family Study (Forrest et al., 2014).

Items assessing the impact of military service on participants' relationships, employment, physical health, mental health and financial situation were also taken from the 2014 Vietnam Veterans Family Study (Forrest et al., 2014).

Two items assessing relationship satisfaction were taken from the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Watson & Wooden, 2002). Participants were required to rate their relationship with their partner and their children on an 11-point Likert-type scale ranging from 'completely dissatisfied' to 'completely satisfied'.

Items measuring conflict during childhood, parental mental health and parental substance abuse were taken from the Longitudinal Study of Australian Children (Gray & Sanson, 2005).

Global parental self-efficacy was assessed via a single item taken from the Longitudinal Study of Australian Children (Gray & Sanson, 2005). Participants were required to rate their competency as a parent on a 5-point Likert-type scale ranging from 'not very good at being a parent' to 'a very good parent'.

Parental warmth was measured using six items from the Child Rearing Questionnaire (Paterson & Sanson, 1999). These items were also utilised in the Longitudinal Study of Australian Children (Gray & Sanson, 2005). Participants were required to answer questions in this section thinking about their first-born child aged between 4 and 17 who lived with them 50% or more of the time in the last six months. Participants were required to indicate how often each listed event took place on a 5-point Likert-type scale ranging from 'never/almost never' to 'always/almost always'. Examples of events include 'how often did you hug or hold this child for no particular reason' and 'how often did you enjoy listening to this child and doing things with him/her'.

Parental anger was measured using five items from the National Longitudinal Study of Children and Youth (Statistics Canada, 2003). Participants were required to indicate how often each listed event took place on a 5-point Likert-type scale ranging from 'never/almost never' to 'all the time'. Examples of events include 'how often are you angry when you punish this child' and 'how often do you tell this child that he/she is not as good as the others'.

Friends and other social contacts

This section of the survey comprised several scales looking at participants' friends and social contacts.

Social support and strain was assessed via items of relevance from an adapted version of the Schuster Social Support Scale (Schuster et al., 1990). Affective support was indicated by responses to questions about how often friends made them feel cared for and how often friends expressed interest in how they were doing. Negative interactions were indicated by responses to questions about how often friends made too many demands on them, how often friends criticised them, and how often friends created tensions or arguments with them. All items were answered on 4-point Likert-type scale ranging from 'often' to 'never'.

A single item looking at how often participants had contact with friends not living with them was taken from the 2014 Vietnam Veterans Family Study conducted by the Department of Veterans' Affairs (Forrest et al., 2014).

A single item assessing how satisfied participants were with their friendships was taken from the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Watson & Wooden, 2002). Participants were required to rate their relationship on an 11-point Likert-type scale ranging from 'completely dissatisfied' to 'completely satisfied'.

Questions looking at how many ex-service organisations participants belonged to and how these organisations benefited them were taken from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Resilience

The Ohio State University Brief Resilience Scale (BRS) (Smith et al., 2008) was included to assess participants' ability to bounce back or recover from stress. Participants were asked to indicate the extent to which they agreed or disagreed with six anchored statements. The BRS is scored by reverse coding items 2, 6, and 6 and finding the mean of the six items.

The final item in this section assessed global happiness via the Delighted–Terrible scale (Andrews & Crandall, 1976), one of the more common approaches to collecting subjective quality of life data.

Gambling

The Problem Gambling Severity Index (Stinchfield, Govoni & Frisch, 2007) is a widely used nine-item scale for measuring the severity of gambling problems in the general population. Each item is scored from 0 to 3. The higher the total score, the greater the risk of problem gambling behaviour.

Driving

Items examining risky driving were sourced from the Australian Institute of Family Studies (Smart et al., 2005) and looked specifically at driving over the speed limit and driving while affected by alcohol. Participants were asked to consider the last 10 times they drove, and how many times in that period they engaged in risky driving behaviour.

Experience with the law

Participants were asked a series of questions about their experiences with the law, including whether they had ever been arrested, whether they had ever been convicted of a crime in a court of law, and finally whether they had ever been sent to prison. For any that applied, participants were also asked to indicate whether the event occurred prior to entry into the ADF, prior to transition from the Regular ADF service, or since transition from Regular ADF service. Items in this section of the survey were sourced from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

Internet usage

This section of the survey aimed to ascertain what role the internet played in improving the mental health and wellbeing of participants. Items looking at internet usage were taken from the Young and Well National Survey (Burns et al., 2013) and looked specifically at internet usage patterns, means of accessing the internet, the use of the internet for social support, the use of the internet for obtaining information relating to mental health, the use of the internet for managing mental health, barriers to using the internet for mental health, and the efficacy of the internet in meeting needs.

Emerging technologies

The use of new and emerging technologies for health and wellbeing was assessed via a series of items developed by the Young and Well Cooperative Research Centre (Burns et al., 2013; Young and Well Cooperative Research Centre, 2013). Questions looked at participants' current usage of new and emerging technologies, barriers to usage, types of new and emerging technologies utilised, the use of new and emerging technologies for health and wellbeing improvement, reasons for using new and emerging technologies for health and wellbeing, other reasons for using new and emerging technologies, the types of new and emerging technologies participants would utilise if money was not a factor, and finally the early adoption of new technologies.

Head injuries

This section of the survey comprised two scales. Firstly, a self-report version of the Ohio State University Traumatic Brain Injury Identification Method (OSU TBI-ID) (Corrigan & Bogner, 2007), which was adapted by researchers for specific use in the current Programme. The OSU TBI-ID is a standardised measure designed to elicit an individual's lifetime history of traumatic brain injury. Questions focused on the types of head/neck injuries incurred, symptoms experienced (e.g. loss of consciousness, being dazed and confused, loss of memory), age the first and last time the symptoms occurred, frequency of symptoms, loss of consciousness related to a drug overdose or being choked, and finally the occurrence of multiple blows to the head in relation to a history of abuse, contact sports or ADF training/deployment. Secondly, a modified version of the Postconcussion Syndrome Checklist (Gouvier, Cubic, Jones, Brantley & Cutlip, 1992), which was utilised as part of the 2012 Middle East Area of Operations Health Study (Davy et al., 2012). This modified version of the scale required participants to indicate the degree to which they had experienced a list of 11 symptoms in the past four weeks as a result of an injury to their head or neck.

Physical exercise

In order to assess physical activity, participants were asked to complete the Short Last 7 Days Self-Administered version of the International Physical Activity Questionnaire (International Physical Activity Questionnaire, 2002). Questions asked participants to indicate the number of days, the number of times, and the amount of time they spent doing vigorous, moderate and light physical activity in the last seven days, as well as the amount of time they spent sedentary.

Pain

Items assessing pain intensity and disability were taken from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015). Participants were asked to answer a series of questions on a scale of 1 to 10 about their current pain, worst pain and average pain in the last six-month period. Participants were also asked to indicate

how much their pain had interfered with their daily activities, their recreational/social activities, and their ability to work in the last six months.

Injuries

This section of the survey was developed by researchers for the current Programme and looked at injuries sustained during an individual's military career that required time off work. For each injury type, participants were asked to specify how many injuries were sustained during their military career, how many were sustained while on deployment, and how many were sustained during training. Participants were also asked to indicate all the body sites where the injuries occurred.

Respiratory health

This section of the survey asked participants about any respiratory symptoms experienced in the last 12 months. Items were derived from the European Community Respiratory Health Survey I (Burney, Luczynska, Chinn & Jarvis, 1994). Examples of symptoms that were assessed include wheezing or whistling, breathlessness, tightness in the chest, shortness of breath, coughing, phlegm, nasal allergies and asthma.

Physical health

Items assessing current physical health were taken from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015). This 67-item adapted version of the self-report symptom questionnaire included respiratory, cardiovascular, musculoskeletal, dermatological, gastrointestinal, genitourinary, neurological and cognitive symptoms. For every symptom experienced within the past month, participants were also required to provide an indication of symptom severity on a 3-point Likert scale (mild, moderate, severe).

Doctor-diagnosed medical conditions

This 44-item self-report questionnaire asked participants about medical problems or conditions they had been diagnosed with or treated for by a medical doctor over their lifetime. If a participant said 'yes' to any of the items listed, they were also asked to specify the year they were first diagnosed, whether they had been treated by a doctor for the condition in the past year, and finally whether they had taken medications for the condition in the past month. Items in this section were derived from the Australian Gulf War Veterans Health Study 2011 follow-up (Sim et al., 2015).

For more detail surrounding the individual measures listed above under 'Phase 1: Self-report survey', including information about scoring, please refer to the relevant chapters within each report commissioned under the Mental Health and Wellbeing Transition Study.

A.7.2 Phase 2: Diagnostic interview

In phase 2 of the research, a subsample of individuals were selected to participate in a one-hour telephone interview using the CIDI (Kessler & Ustun, 2004).

The CIDI provided the research team with 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) and the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) (World Health Organization, 1994). The CIDI was selected because of its highly structured nature and its vast use in epidemiological studies worldwide, including the 2010 MHPWS, conducted by the Centre for Traumatic Stress Studies, and the 2007 National Survey of Mental Health and Wellbeing, conducted by the Australian Bureau of Statistics.

The CIDI was administered to consenting participants by a team of trained interviewers from the Hunter Research Foundation in Newcastle, New South Wales. Their diagnostic inter-rater reliability was closely monitored by supervisors based at the research centre throughout the study period.

Twelve-month and lifetime ICD-10 mental disorders

The CIDI was used to assess the 12-month and lifetime ICD-10 rates for depressive episode, dysthymia, bipolar affective disorder, panic attack, panic disorder, agoraphobia, social phobia, specific phobia, generalised anxiety disorder, obsessive-compulsive disorder, PTSD, adult separation disorder, harmful alcohol use and dependence, suicidal ideation and behaviour, and intermittent explosive disorder. Clinical calibration studies report that the CIDI has good validity (Haro et al., 2006). Throughout the report, ICD-10 prevalence rates have been presented with hierarchy rules applied to directly compare them with the Australian national rates (Slade et al., 2009). For all ICD-10 disorders, the standard CIDI algorithms were applied; therefore, to qualify for a 12-month diagnosis, individuals would be required to meet lifetime criteria initially and then have reported symptoms in the 12 months before the interview.

Lifetime trauma exposure

Lifetime exposure to trauma was examined as part of the PTSD module of the CIDI. The following criterion A events listed in the CIDI were examined: combat (military or organised non-military group); being a peacekeeper in a war zone or 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 motor vehicle 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 parent or guardian as a child; 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; and experiencing any other event that the participant did not want to talk about.

A.8 Stratification procedure

In phase 2 of the research, 1,807 Transitioned ADF members were invited to participate in a one-hour telephone interview using the CIDI (Kessler & Ustun, 2004). In addition to two subgroups of Transitioned ADF in Sample 5 (Combat Zone) and Sample 6 (MHPWS), who were all eligible to complete a CIDI, CIDI invitations preferred groups accounting for the smallest proportion of the actual population (for example, females) and those with high scores on the PTSD Checklist (PCL) and AUDIT, to increase representativeness of the sample and optimise the ability to capture low-prevalence mental disorders.

As such, these participants were selected for a CIDI based on rank, sex, Service and scores on the PCL and AUDIT, with screening scores on the PCL and AUDIT categorised into the following three bands:

- Band 3 = PCL > 27, AUDIT > 9
- Band 2 = PCL 21–27, AUDIT 7–9
- Band 1 = PCL ≤ 20, AUDIT ≤ 6

Using the method proposed by Salim and Welsh (2009), the stratification procedure aimed to oversample those respondents in Band 3 (greatest likelihood of disorder). A smaller proportion from bands 1 and 2 were also sampled, to control for the possibility of overinflated mental disorder estimates. Transitioned ADF in samples 5 and 6 were also allocated a band, as can be seen in Table A.8, to ensure they were accounted for during sampling.

Based on the predicted proportions of Transitioned ADF survey responders who would score in each band on the PCL-C and AUDIT, according to the population characteristics of sex, rank and Service, the following stratification algorithm was used to generate

lists of eligible CIDI participants from among Transitioned ADF survey completers who consented to complete a CIDI:

- Band 3
- Female Band 2
- Female Band 1
- Male Navy Band 2
- Male Navy Band 3
- Male Army Band 3
- Male Army Band 1
- Male Air Force Band 2.

Table A.8 Stratification characteristics of Transitioned ADF CIDI sample

	Transitioned ADF CIDI							
	No band [#]		Band 1		Band 2		Band 3	
	Invited (n = 110)	Completed (n = 72)	Invited (n = 408)	Completed (n = 258)	Invited (n = 335)	Completed (n = 225)	Invited (n = 954)	Completed (n = 494)
Navy								
Male	20	8	73	43	57	41	140	71
Female	1	1	17	10	8	4	40	20
Army								
Male	52	37	152	94	155	109	515	272
Female	15	10	35	19	31	15	66	25
Air Force								
Male	17	13	104	77	74	50	152	86
Female	4	3	25	14	8	5	34	16
Missing	1	–	2	1	2	1	7	4

[#] Includes Combat Zone and MHPWS participants who were invited to participate but were not stratified.

Table A.8 shows the final distribution of eligible Transitioned ADF across the strata used for selection into the CIDI, and the number who responded. Of the 1,049 Transitioned ADF who completed a CIDI, 47.1% were in Band 3, 21.4% in Band 2 and 24.6% in Band 1. The final sample comprised 55.4% Army, 18.9% Navy and 25.2% Air Force, with the majority of respondents being male (85.9%). A total of 78 CIDI responders were missing band, sex or Service, and were excluded from the final weighted population.

A.9 Weighting

The statistical weighting process used in the Mental Health and Wellbeing Transition Study replicated that used in the MHPWS, and allowed for the inference of results for the Transitioned ADF and 2015 Regular ADF populations. The two types of weights used in the study were:

- the survey responder weights, which corrected for differential non-response on the survey for Transitioned ADF and 2015 Regular ADF
- two-phase CIDI responder weights, which compensated for differential non-response on the survey, and for oversampling or undersampling of specific cases where participants went on to be interviewed with the CIDI. These weights apply to the Transitioned ADF only, and were used to generate 12-month and lifetime ICD-10 mental disorder prevalence estimates for the entire Transitioned ADF.

The weighting procedure involves the allocation of a representative value or ‘weight’ to the data for each responder, based on key variables that are known for the entire population (including both responders and non-responders). This weight indicates how many individuals in the entire population are represented by each actual responder. Weighting data allows for inference of results for an entire population, in this case, the Transitioned ADF, by assigning a representative value to each ‘actual’ case (responder) in the data. If a case has a weight of 4, it means that case counts in the data as four identical cases. By using known characteristics about each individual within the population (in this case, age, sex, rank and medical fitness), the weight assigned to responders indicates how many ‘like’ individuals in the entire population (based on those characteristics) each responder represents.

Weighting is used to correct for differential non-response and to account for systematic biases that may be present in study responders (e.g. oversampling of high scorers for CIDI). Both types of weights were used in this study.

These two types of weights were combined to give each responder a single weight within the data. This methodology provides representative weights for the population, improving the accuracy of the estimated data, and requires that every individual within the population has actual data on the key variables that determine representativeness.

The Transitioned ADF weights were derived from the distinct strata of sex, Service, rank, and medical fitness, a dichotomous variable derived from Medical Employment Classification (MEC) status (see details of reclassification below). Constraints due to consent meant that MEC status was missing for a number of participants. As medical fitness was a key weighting variable both in providing a proxy health status for each individual in the population and to enable comparisons with the 2010 ADF Mental

Health Prevalence and Wellbeing Study, a data perturbation approach was taken to deal with the missing data (see subsection A.10.1 of this annex on perturbation approach). Once missing MEC status was addressed, there remained 313 (1.2%) of the Transitioned ADF with missing information on the strata variables and therefore the final population was 24,932, with all weighted analyses of the Transitioned ADF summing to this.

The 2015 Regular ADF weights were derived from the distinct strata of sex, Service, rank, medical fitness, and whether the individual completed a study as part of the Military Health Outcomes Program (MilHOP). The inclusion of this additional stratification variable was to account for the targeted sampling of the MilHOP cohort, who were then overrepresented within the current serving responders. A MilHOP flag variable (yes/no = 1/0) was therefore created and used in the weighting process in order to reduce this bias. There were 192 (0.4%) 2015 Regular ADF with missing information on the strata variables, reducing the final weighted population for analysis to 52,500. Tables A.9, A.10 and A.11 present the study population and responders within each strata used for weighting, and show approximately how many persons within each subpopulation each study responder represents.

Table A.9 Strata description – MilHOP Regular ADF

Strata Sex Rank Medical fitness Service	2015 Regular ADF			
	Population	Responders	%	No. of persons in population each responder represents
MilHOP				
Female Officer fit Navy	170	88	51.8	1.9
Female Officer fit Army	237	120	50.6	2.0
Female Officer fit Air Force	249	121	48.6	2.1
Female Officer unfit Navy	48	27	56.3	1.8
Female Officer unfit Army	75	39	52.0	1.9
Female Officer unfit Air Force	76	34	44.7	2.2
Female NCO fit Navy	197	71	36.0	2.8
Female NCO fit Army	245	99	40.4	2.5
Female NCO fit Air Force	255	110	43.1	2.3
Female NCO unfit Navy	65	23	35.4	2.8
Female NCO unfit Army	117	49	41.9	2.4
Female NCO unfit Air Force	100	37	37.0	2.7
Female Other Rank fit Navy	41	12	29.3	3.4
Female Other Rank fit Army	33	4	12.1	8.3
Female Other Rank fit Air Force	51	18	35.3	2.8
Female Other Rank unfit Navy	31	5	16.1	6.2
Female Other Rank unfit Army	19	9	47.4	2.1
Female Other Rank unfit Air Force	31	5	16.1	6.2
Male Officer fit Navy	902	418	46.3	2.2
Male Officer fit Army	1585	723	45.6	2.2
Male Officer fit Air Force	1428	596	41.7	2.4
Male Officer unfit Navy	81	54	66.7	1.5
Male Officer unfit Army	153	75	49.0	2.0
Male Officer unfit Air Force	117	58	49.6	2.0
Male NCO fit Navy	1386	522	37.7	2.7
Male NCO fit Army	2629	1037	39.4	2.6
Male NCO fit Air Force	2153	789	36.6	2.7
Male NCO unfit Navy	214	96	44.9	2.2
Male NCO unfit Army	503	244	48.5	2.1
Male NCO unfit Air Force	309	130	42.1	2.4
Male Other Rank fit Navy	176	46	26.1	3.8
Male Other Rank fit Army	433	57	13.2	7.6
Male Other Rank fit Air Force	320	75	23.4	4.3
Male Other Rank unfit Navy	39	11	28.2	3.5
Male Other Rank unfit Army	105	25	23.8	4.2
Male Other Rank unfit Air Force	43	13	30.2	3.3

NCO = Non-Commissioned Officer

Table A.10 Strata description – non-MilHOP Regular ADF

Strata Sex Rank Medical fitness Service	2015 Regular ADF			
	Population	Responders	%	No. of persons in population each responder represents
Non-MilHOP				
Female Officer fit Navy	305	114	37.4	2.7
Female Officer fit Army	374	112	29.9	3.3
Female Officer fit Air Force	406	139	34.2	2.9
Female Officer unfit Navy	66	23	34.8	2.9
Female Officer unfit Army	87	31	35.6	2.8
Female Officer unfit Air Force	70	28	40.0	2.5
Female NCO fit Navy	120	50	41.7	2.4
Female NCO fit Army	138	70	50.7	2.0
Female NCO fit Air Force	157	79	50.3	2.0
Female NCO unfit Navy	48	24	50.0	2.0
Female NCO unfit Army	50	32	64.0	1.6
Female NCO unfit Air Force	69	36	52.2	1.9
Female Other Rank fit Navy	256	39	15.2	6.6
Female Other Rank fit Army	271	33	12.2	8.2
Female Other Rank fit Air Force	226	58	25.7	3.9
Female Other Rank unfit Navy	59	14	23.7	4.2
Female Other Rank unfit Army	58	14	24.1	4.1
Female Other Rank unfit Air Force	55	20	36.4	2.8
Male Officer fit Navy	1450	188	13.0	7.7
Male Officer fit Army	2977	269	9.0	11.1
Male Officer fit Air Force	2098	213	10.2	9.8
Male Officer unfit Navy	95	11	11.6	8.6
Male Officer unfit Army	238	31	13.0	7.7
Male Officer unfit Air Force	157	26	16.6	6.0
Male NCO fit Navy	2257	149	6.6	15.1
Male NCO fit Army	3447	311	9.0	11.1
Male NCO fit Air Force	1866	268	14.4	7.0
Male NCO unfit Navy	334	23	6.9	14.5
Male NCO unfit Army	575	59	10.3	9.7
Male NCO unfit Air Force	257	28	10.9	9.2
Male Other Rank fit Navy	4451	28	0.6	159.0
Male Other Rank fit Army	10074	43	0.4	234.3
Male Other Rank fit Air Force	2659	47	1.8	56.6
Male Other Rank unfit Navy	491	4	0.8	122.8
Male Other Rank unfit Army	1375	14	1.0	98.2
Male Other Rank unfit Air Force	268	12	4.5	22.3

NCO = Non-Commissioned Officer

Table A.11 Strata description – Transitioned ADF

Strata Sex Rank Medical fitness Service	Transitioned ADF			
	Population	Responders	%	No. of persons in population each responder represents
Female Officer fit Navy	122	32	26.2	3.8
Female Officer fit Army	224	68	30.4	3.3
Female Officer fit Air Force	133	41	30.8	3.2
Female Officer unfit Navy	63	21	33.3	3.0
Female Officer unfit Army	90	31	34.4	2.9
Female Officer unfit Air Force	59	25	42.4	2.4
Female NCO fit Navy	198	49	24.7	4.0
Female NCO fit Army	263	80	30.4	3.3
Female NCO fit Air Force	188	56	29.8	3.4
Female NCO unfit Navy	101	26	25.7	3.9
Female NCO unfit Army	139	48	34.5	2.9
Female NCO unfit Air Force	92	30	32.6	3.1
Female Other Rank fit Navy	411	25	6.1	16.4
Female Other Rank fit Army	421	34	8.1	12.4
Female Other Rank fit Air Force	156	21	13.5	7.4
Female Other Rank unfit Navy	226	34	15.0	6.6
Female Other Rank unfit Army	270	40	14.8	6.8
Female Other Rank unfit Air Force	105	19	18.1	5.5
Male Officer fit Navy	583	173	29.7	3.4
Male Officer fit Army	1409	401	28.5	3.5
Male Officer fit Air Force	772	253	32.8	3.1
Male Officer unfit Navy	124	47	37.9	2.6
Male Officer unfit Army	350	114	32.6	3.1
Male Officer unfit Air Force	134	53	39.6	2.5
Male NCO fit Navy	1285	225	17.5	5.7
Male NCO fit Army	2735	752	27.5	3.6
Male NCO fit Air Force	1148	291	25.3	3.9
Male NCO unfit Navy	343	92	26.8	3.7
Male NCO unfit Army	1055	337	31.9	3.1
Male NCO unfit Air Force	319	111	34.8	2.9
Male Other Rank fit Navy	1697	88	5.2	19.3
Male Other Rank fit Army	5639	327	5.8	17.2
Male Other Rank fit Air Force	889	65	7.3	13.7
Male Other Rank unfit Navy	518	51	9.8	10.2
Male Other Rank unfit Army	2443	231	9.5	10.6

NCO = Non-Commissioned Officer

A.9.1 Reclassification of Medical Employment Classification for study

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

- **MEC 1** – members are medically fit for employment in a deployed or seagoing environment without restriction.
- **MEC 2** – members have medical conditions that require access to various levels of medical support or employment restrictions; however, they remain medically fit for duties in their occupation in a deployed or seagoing environment. In allocation of subclassifications of MEC 2, access to the level of medical support will always take precedence over specified employment restrictions.
- **MEC 3** – members have medical conditions that make them medically unfit for duties 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 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.

MEC status was collapsed to create a new variable ‘medical fitness’, which was used in the current Programme of research. Medical fitness was defined accordingly:

- **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 MEC 2, or are assigned a perturbed MEC value of ‘fit’.
- **Unfit** – those who are not fit for deployment, original occupation and/or further service. ‘Unfit’ can include those who are undergoing rehabilitation, transitioning to alternative return-to-work arrangements, or are in the process of being medically discharged from the ADF. Participants are classified as unfit if they fall into MEC 3 or MEC 4, or are assigned a perturbed MEC value of ‘unfit’.

A.9.2 Estimates from survey

To maximise the actual real data available for analysis, *survey* weights were calculated for each section of the survey separately. This addressed the issue of differential response to various sections of the survey, whereby individuals potentially completed some but not all parts of the survey. A 'survey section responder' was defined as anyone who answered at least one question in that particular section of the survey. There was a total of 29 section responder weight variables. For the purpose of analysis, the weights used were always for the primary outcome variable of interest.

A.9.3 Estimates from Composite International Diagnostic Interview

CIDI weights were derived for the Transitioned ADF based on strata including band (cut-offs based on PCL-C and AUDIT), sex and Service. These strata were used to weight the CIDI responses to the entire population. Within each stratum, the weight was calculated as the population size divided by the number of CIDI respondents for that stratum. As there was no band for non-respondents, the population size within each stratum was estimated by multiplying the known sex by service population total by the observed proportion belonging to the band of interest in the corresponding stratum. A finite population correction was also applied to adjust the variance estimates for the reasonably large sampling fraction in each stratum.

Post-stratification by the variables of sex, Service and rank was used to adjust the weights so that the estimates reproduced the known population totals, and to correct for differential non-response by rank.

A.10 Unit-level perturbation of Medical Employment Classification values

A.10.1 Methodology

Due to the nature of the consent provided for individuals on the Study Roll, access to identified data for weighting purposes required the consent of the individual participants. The Australian Institute of Health and Welfare carried out a perturbation approach that provided each non-consenting record with a releasable MEC value. Perturbation used the observed values of MEC for the non-consenters to give an appropriate value to each non-consenting record. This was achieved simply by fitting a model using releasable data items as predictors in a model of MEC using the non-consenters. The model used was a logistic regression model. This resulted in a set of probabilities of each record taking on MEC values. A Monte Carlo approach used these probabilities to randomly assign a synthetic MEC value to each record. These synthetic MEC values reflect each individual's characteristics. The generation was constrained so that aggregate totals remained consistent with totals of unperturbed values.

The perturbation approach allowed the unit records to better reflect the MEC status of individuals. This allowed researchers to use the unit records to undertake more accurate analyses and tabulations.

The unit record perturbation allowed for tabulation and analyses. The perturbed values did not assume a broad level of homogeneity within the combinations of variables as an aggregate weighting approach, but rather allowed the individual characteristic of each person to inform the perturbed value that they were assigned.

A.10.2 Results

The perturbation process was constrained at the source level. Tables A.12 and A.13 show that this was achieved, as the counts of ‘fit’, ‘unfit’ and ‘missing’ were the same for both the original and perturbed values.

The missing values were assumed to happen at random within the source file. This meant that a participant’s original missing value could be given to any other participant, regardless of their sex, Service, rank or age. As such, the number of ‘fit’ and ‘unfit’ totals at these constraining levels for the perturbed data do not exactly line up with the original totals (see Table A.13 for totals by Service type).

Table A.12 Counts of categories by source

Source	Original MEC value			Perturbed MEC value		
	Fit	Unfit	Missing	Fit	Unfit	Missing
Ab initio Reservists	138	7	0	138	7	0
Current serving	891	196	2	891	196	2
Transitioned	271	159	1	271	159	1

MEC = Medical Employment Classification

Table A.13 Counts of categories by service type

Service	Original MEC value			Perturbed MEC value		
	Fit	Unfit	Missing	Fit	Unfit	Missing
Navy	613	191	3	614	193	0
Army	254	63	0	255	60	2
Air Force	433	108	0	431	109	1

MEC = Medical Employment Classification

A.11 Contact strategy and recruitment methods

A.11.1 Promoting the study

Before the research team made initial direct contact, the following strategies were used to promote the study to participants.

Advertising via print media

The study team developed promotional posters, which were placed in Service newspapers, on DVA and Defence internet and intranet sites, on bases, at ex-service organisations and on the University of Adelaide website.

Ministerial media release

On 11 June 2014, Senator the Hon Michael Ronaldson, the then Minister for Veterans' Affairs, issued a media release launching the study to the wider community, disseminating information and generating interest among ADF members. The Executive Dean of the Faculty of Health Sciences at the University of Adelaide, members of the Scientific Advisory Committee and members of the investigative team were all present. The launch and media release generated enquiries, which the Centre for Traumatic Stress Studies (CTSS) research team responded to promptly and effectively, following strict protocol.

Targeted briefs to ADF leadership

Information sessions were held to brief commanders and other key influencers in the broader Defence community about the importance of the research.

Letter to ex-service organisations

A letter introducing the Transition and Wellbeing Research Programme and an accompanying fact sheet were sent to all relevant ex-service organisations to disseminate information and generate support for the study.

Distribution of study briefing packs

Briefing packs containing study/promotional materials were distributed to ex-service organisations as another means of promoting the study to the target population.

Social media strategy

A series of social media conversations, promotions and advertisements were rolled out via the Transition and Wellbeing Research Programme's Facebook page (Facebook/aumilresearch) and Twitter account (@aumilresearch) throughout the study period. These accounts were managed by the CTSS research team. The primary objectives of the social media campaign were to raise awareness of the research Programme among 2015 Regular ADF and ex-serving ADF members, their families and their social networks; engage other advocates and key stakeholders; provide another

platform for participants to engage with the research team; and disseminate previous military research conducted by CTSS.

A.11.2 Development of the Military and Veteran Health Research Study Roll

Participants' contact details and demographic information were obtained via the creation of the Military and Veteran Health Research Study Roll (Study Roll), which was created by the Australian Institute of Health and Welfare (AIHW), in collaboration with DVA and Defence. This process involved integrating contact information from:

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

To ensure the information was current and reflected the most recent posting cycles, a final PMKeyS download was received immediately before the study began and integrated into the dataset.

This integrated dataset was only passed on to the research team after an opt-out process was conducted. This involved DVA and Defence contacting participants via their websites, email, hard copy letter, service newspapers and a media campaign, and providing them with detailed information about the Study Roll and its broader purpose. The contact information, basic service history and demographic information of individuals who did not opt out of this process within four weeks of the campaign commencing were then passed on to CTSS for the Transition and Wellbeing Research Programme. Participants could still opt out of the Study Roll after the four-week campaign, via an opt-out website or email managed by Defence. This website was open for three months. Individuals who opted out of the Study Roll through this website were excluded from sampling.

To prevent the families of deceased Defence members being approached, the Study Roll was cross-checked against the National Death Index before the opt-out email was sent to individuals and again approximately four weeks before data collection began. All new deaths recorded by Defence were immediately communicated to the research team.

A.11.3 Self-selection procedure

Details of eligible ex-serving members who were not passed on to CTSS at the beginning of the study period, but who subsequently self-selected into the study, were sent to the AIHW for inclusion in the Study Roll. These members were sent an

invitation package, following the standard study protocol. Participants Defence deemed ineligible were required to provide proof of their service to CTSS to participate. Reservists who self-selected into the study were only included in the dataset if they appeared on the original Study Roll.

A.11.4 Sampling by data integrator

Before recruitment, the AIHW created appropriate samples for the research Programme, including:

- all members who transitioned from full-time Regular ADF service between 2010 and 2014
- all ADF members who participated in the MilHOP, excluding members who indicated they did not wish to be contacted for further research
- a stratified random sample of 5,040 2015 Regular ADF members
- 22,638 currently serving Ab initio Reservists. Note: only Reservists with contact information were invited to participate (22,638).

The stratified random sample of 5,040 2015 Regular ADF members was drawn from the remainder of members not already listed as MilHOP participants. This sample did not include those who were deceased or who opted out of the Transition and Wellbeing Research Programme.

Stratification was based on:

- Service (Navy, Army, Air Force)
- sex
- rank code (Officer/enlistee).

The contact information and demographics for each of the subpopulations listed above, with the exception of individuals who opted out of the Study Roll, were then passed on to CTSS researchers for recruitment and weighting purposes.

A.11.5 Phase 1: Distribution of self-report survey

Recruitment for the study was staggered across the entire data collection period. Online invitation packages were distributed to participants in batches. The first batch of invitation emails was rolled out to participants in June 2015. Each email contained a unique study ID number and token password, as well as a secure link to an online invitation package. This package contained the self-report survey and all associated study materials, including information sheets and consent forms. Invitation packs were uniquely tailored to participants' current serving status and eligibility criteria. Where

email addresses were not available, or upon request, hard copy versions of the invitation package were posted to participants.

Follow-up of survey non-respondents

A multifaceted approach to following up survey non-respondents was used to maximise participation rates:

- **Reminder emails** – Email reminders were sent to all non-responders two, four and six weeks after the invitation package was distributed, and one month before the survey was closed. Participants who preferred to complete a hard copy version of the survey were directed to call or email the study team. This was specified in all reminder email correspondence.
- **SMS reminders** – SMS reminders were sent to all non-responders concurrently to alert them to their emails. This included members who had not yet begun the survey, as well as individuals who had partially completed it.
- **Targeted telephone follow-up** – A selection of high-priority participants were targeted via a structured telephone follow-up process. These participants were members of the MHPWS CIDI cohort. It was important to maximise the response rate for this longitudinal cohort with existing data points, to enable mapping of the trajectory of disorder. Telephone follow-up was also extended to participants without email addresses, partial completers and other target groups with low response rates, to ensure representativeness. Specifically, this included:
 - Transitioned ADF members with a landline phone number but no email address or mobile number
 - Transitioned ADF members with a landline phone number and Defence email address only but no mobile phone number
 - partial completers from all cohorts
 - participants with bounced emails from sole non-Defence email addresses, with a landline phone number but no mobile number
 - participants who nominated family members for the Family Wellbeing Study but did not provide contact details for family
 - all other Transitioned ADF members and Ab initio Reservists who had not begun the survey.

Trained research staff at CTSS made the phone calls following a structured script. The calls were made at a variety of times during the day and evening to maximise contact opportunities. A maximum of 10 attempts were made to speak to each participant twice. Where no contact was made, and a telephone message service

was available, a reminder message was left on two of these 10 occasions only, along with the study free-call number and email address.

- **Hard copy letters** – Hard copy invitation letters containing the study free-call number and email address, as well as a link to the online survey, were sent to:
 - all Transitioned ADF non-responders
 - all Ab initio Reservist non-responders
 - all 2015 Regular ADF non-responders who did not participate in the MilHOP.

A.11.6 Phase 2: Diagnostic interview

Selection

In phase 2, a subgroup of Transitioned and Regular ADF members from eligible samples were targeted to participate in a one-hour telephone interview using the World Mental Health Survey Initiative version of the CIDI 3.0. To be eligible for recruitment, potential interviewees must have completed the self-report measures, and have provided consent in the Mental Health and Wellbeing Transition Study consent form to being contacted to participate in a telephone interview. The following groups were targeted for phase 2:

- A stratified sample of ADF members who had transitioned out of full-time service since 2010. Transitioned ADF survey responders were invited to complete a CIDI based on their scores on the PCL-C and AUDIT screening measures, and demographic characteristics were used to further preference participants to ensure the CIDI sample represented the entire cross-section of population characteristics as far as was possible.
- All MHPWS ADF members who were interviewed using the CIDI in 2010 – this included individuals who met ICD-10 diagnostic criteria for either a 12-month ICD-10 affective, anxiety or alcohol disorder in 2010, as well as individuals who were subsyndromal or had no disorder.
- A sample of ADF members who participated in the MEAO Prospective Health Study between 2010 and 2012.

Recruitment

Recruitment calls were made by trained interviewers at the Hunter Research Foundation, who couldn't see the scores of participants on the self-report measures. Telephone calls were made at a variety of times during the day and evening, taking into account participants' preferences, so as to maximise contact opportunities.

To ensure that the most recent contact details were used, a download of current phone numbers was obtained from PMKeyS immediately before the study began and intermittently throughout the interview period.

Participants were contacted by telephone using contact details obtained through:

- participants providing contact details and alternative contact details, either online or in hard copy, as part of phase 1 of the Mental Health and Wellbeing Transition Study
- the Australian Institute of Health and Welfare
- PMKeyS
- participants providing contact details and alternative contact details, either online or in hard copy, as part of the MilHOP studies.

The first telephone call was made using the primary phone number provided in the contact information sheet completed in phase 1. In the absence of this information, a phone number obtained from one of the sources listed above was used.

A maximum of 10 attempts were made to speak to the participant before that participant was removed from the pool. When no contact was made, a reminder message was left on two of the 10 occasions, along with the study's free-call number and email address.

Where telephone contact was made, research officers explained the aims, purpose and requirements of the interview, and if agreement was granted, an interview time was arranged.

Interview

At the beginning of each interview, participants were reminded that participation was voluntary, they could stop the interview at any point, and could withdraw from the study at any time without any impact on their career or entitlements.

If the participant agreed to proceed with the interview, verbal consent was obtained and recorded. Following this, the highly structured interview was undertaken.

At the end of the structured interview, participants were provided with sufficient time to debrief, ask questions, and provided interview-related feedback. If at any time the participant indicated that they were feeling distressed or suicidal, interviewers implemented the relevant duty of care protocols.

A.12 Medicare and Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme data linkage

As part of the broader research Programme, participants were also invited to fill out a consent form authorising the study access to complete Medicare, Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme data. Data for each consenting participant were obtained for a five-year period before their scheduled interview date and included information about their medical visits, procedures, associated costs, and prescription medications filled at pharmacies. Consent forms for this component of the research were sent securely to the Department of Human Services, which holds this information confidentially.

A.13 Statistical analysis

Analyses were conducted in Stata version 13.1 or SAS version 9.2 or 9.4. All analyses were conducted using weighted estimates of totals, means and proportions, except where specified otherwise. Standard errors were estimated using linearisation, except where specified otherwise.

Subgroup analyses were conducted on each of the 12-month ICD-10 mental disorders using demographic and deployment history predictors, including sex (male, female), age (18–27, 28–37, 38–47, 48–57, 58+), 2015 Regular ADF service or service at transition (Navy, Army, Air Force), 2015 Regular ADF rank or rank on transition (Officer, Non-Commissioned Officer, Other Ranks), years of service in the Regular ADF (< 3 months, 3 months – 3.9 years, 4 – 7.9 years, 8 – 11.9 years, 12 – 15.9 years, 16 – 19.9 years, 20+ years), and deployment status (ever deployed, never deployed). For members of the Transitioned ADF, specific transition factors were included: transition status (ex-serving, Inactive Reservist, Active Reservist), reason for discharge (medical discharge, other reason), years since transition (0, 1, 2, 3, 4, 5), and DVA client status (DVA client, not a DVA client).

Comparisons between the prevalence of 12-month ICD-10 disorders among subgroups were analysed using weighted logistic regressions. All regressions involved variables for age, sex, Service and rank. Comparisons between the prevalence of 12-month ICD-10 disorder classes (affective disorders, anxiety disorders, alcohol disorders) among subgroups were analysed using a weighted multinomial logistic regression, with number of disorder classes as the outcome. The regression involved the covariates age, sex, Service and rank. Comparisons between the prevalence of self-reported suicidal behaviour among subgroups were analysed using weighted logistic regressions. All regressions included the covariates age, sex, Service and rank.

For the self-report measures, the proportion (n (%)) of ADF members in each subgroup is presented. Comparisons between the mean total scores among subgroups were also

analysed where appropriate, using weighted multiple linear regressions. All regressions included the covariates age, sex, Service and rank. Comparisons between the prevalence of self-reported alcohol consumption and problems with drinking were analysed using weighted logistic regressions. A proportional odds model was considered for analysis. However, the main assumption of this approach was violated, so the ordinal response was dichotomised by means of several cut-offs. All regressions included the covariates age, sex, Service and rank.

To compare the mental health and wellbeing of the 2015 Regular ADF with the 2010 Regular ADF, a direct numerical comparison was performed. This did not include standardisation or tests of statistical significance. As these two samples cannot be considered independent, between-group differences should be interpreted with caution, noting that some members of the 2015 Regular ADF sample were also represented in the 2010 Regular ADF sample. The issue of individual change in symptoms and disorder over time in this group will be addressed in the future longitudinal report.

To compare estimates in the Transitioned ADF with the Australian community, direct standardisation was applied to estimates in the 2014–2015 National Health Survey (NHS). The NHS data were restricted to those aged 18 to 71 (consistent with the Transition and Wellbeing Research Programme transition population). The data were standardised by sex, employment status (employed or not) and age category (18–27, 28–37, 38–47, 48–57 and 58+). Standard errors for the NHS data were estimated using the replication weights provided in the NHS data file.

A.14 Ethical considerations

In order to combat potential risks and ensure that participation in the study was completely free from coercion, participants were made explicitly aware that their involvement in the study was voluntary and that they could decline to participate and/or were free to withdraw from the project at any time. This was emphasised in all study materials. Secondly, whether or not an individual chose to participate in the study was not communicated to senior staff in the ADF, nor were members asked directly to participate in the study by a uniformed Officer. This also ensured that recruitment was free from coercion.

In order to manage potential risks to participants in relation to both phase 1 and phase 2 of the research, a duty of care protocol was established and strictly adhered to by the research team.

A.15 Ethical approvals

The study protocol was approved by the DVA Human Research Ethics Committee (E014/018), and was mutually recognised by the Directorate, Defence Health Research, and the University of Adelaide Human Research Ethics Committee. The study protocol was also submitted to the Australian Institute of Health and Welfare Ethics Committee and received approval accordingly (EO 2015/1/163).

Annex B Relevant Australian and international literature

B.1 Australian evidence

The Middle East Area of Operations (MEAO) Census Study examined the health status of more than 14,000 Regular ADF and ex-serving ADF members deployed to the MEAO between 2001 and 2009 (Dobson et al., 2012), and the MEAO Prospective Health Study examined just under 2,000 Regular ADF members deployed to the MEAO between 2010 and 2012 (Davy et al., 2012). The MEAO Prospective Health Study found generally low levels of mental and physical health symptoms, as would be expected in a healthy, deployable cohort; however, low-level increases in some mental and physical health measures were documented between pre- and post-deployment, suggesting the possibility of reactivity to exposures experienced in the deployed environment. While both studies targeted only those ADF members who had deployed, the MEAO Census Study included those who were transitioned (either as Active or Inactive Reservists, or ex-serving), and identified poorer mental and general health among ADF members who had been discharged or transitioned into the Reserves compared to those who remained in service. Ex-serving ADF members (OR 6.9; 95% CI 5.6, 8.6), Active Reservists (OR 2.5; 95% CI 2.1, 2.9) and Inactive Reservists (OR 2.4; 95% CI 2.0, 2.9) were significantly more likely to report more symptoms of posttraumatic stress disorder (PTSD) than Regular ADF members. This pattern was also observed for symptoms of major depressive disorder, alcohol misuse and suicidal ideation (Dobson et al., 2012).

A 10-year follow-up health study of Australian Gulf War veterans – conducted 10 years after a baseline study in 2000–2002 – produced similar findings (Sim et al., 2015). In this study, 7.3% of Gulf War veterans and 2.8% of the matched comparison group met criteria for 12-month PTSD 10 years after their initial assessment. Further, the pattern of PTSD was more likely to persist and less likely to remit, with a four-fold increase in 12-month PTSD in Gulf War veterans over the 10-year follow-up period.

Similar patterns of worse mental health in veterans has been observed in the context of suicide. For example, a recent Australian Institute of Health and Welfare report examined the number of suicides of current, reserve and ex-serving ADF members between 2002 and 2014. Although suicide rates were 53% lower among ADF males serving full-time and 46% lower among ADF male Reservists, the suicide rate for ex-serving ADF males was 13% higher than for males in the Australian population. There

were significantly elevated rates of suicide in ex-serving men aged 18 to 24 (1.9 times higher) and 25 to 29 (1.5 times higher) compared to men in the Australian community. In 2002–2014, suicides were recorded for 84 current full-time serving ADF members, 66 ADF reserve members and 142 ex-serving ADF members (Australian Institute of Health and Welfare, 2016).

B.2 International evidence

There is a lack of consensus on the meaning, definition and terminology used to describe the transition process in different countries (Ray & Heaslip, 2011). The literature considers various transition periods, ranging from up to six months before release from service until approximately five years after release (Pedlar & Thompson, 2016; Shields et al., 2016), with no standard start or end to transition (Pedlar & Thompson, 2016). The five-year post-service time frame is one of the only relatively consistent features of early transition across studies. Similarly, there is worldwide variation in how service leavers, veterans and ex-serving members are defined (Burdett et al., 2013; Department of Veterans' Affairs, 2013).

Despite this lack of consensus around theoretical framework, definition and terminology, the period of transition from military to civilian life is recognised as one of the most significant and stressful transitions in the life course of military members. Many service leavers make the transition from military service with relative ease, with an estimated 60% to 75% internationally reporting an easy adjustment to civilian life (Pew Research Center, 2011; Thompson et al., 2011; Van Til et al., 2014a). However, others, particularly those who developed mental health symptoms or disorders before discharge, may struggle with the adjustment to civilian life (Coll et al., 2011; Demers, 2011; Department of Veterans' Affairs, 2016; Institute of Medicine, 2013; Iversen et al., 2005; Kukla et al., 2015; Pease et al., 2016; Sayer et al., 2014; Tanielian & Jaycox, 2008). The transition period brings significant changes in identity, community, residence, social networks, status, family roles, occupation, finances, routines, responsibilities, supports and culture (Demers, 2011; Harvey et al., 2011; Hatch et al., 2013; Sayer et al., 2014; Sayer et al., 2010). These changes have the potential to manifest in the development of psychosocial adjustment issues. These can range from employment difficulties to family and/or relationship conflict, mental health and substance abuse problems, and criminal offending. Obstacles and stress in multiple domains also place individuals at significant risk of poor outcomes (Bergman, Burdett & Greenberg, 2014; Burdett et al., 2013; Castro & Kintzle, 2014; Coll et al., 2011; Pease et al., 2016; Pedlar & Thompson, 2016; Shields et al., 2016; Wainwright, McDonnell, Lennox, Shaw & Senior, 2016).

Additionally, during the transition process, individuals also actively re-establish or connect with civilian healthcare and other service providers that are largely unknown

to them, making it challenging to access appropriate care. These factors make this initial transition period a critical time for optimising the physical, mental and social health and wellbeing of transitioned military members. While it is recognised that, as with all life transitions, some degree of struggle is normal, the normative course of adaptation during the transition period remains poorly understood (Sheilds et al., 2016).

Similar to the Australian experience, international research has mainly focused on the impact of service on military members in specific deployments (for example, Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF)). While a number of these studies include current and ex-serving contingents, comprehensive research studies on representative cohorts of transitioned military populations remain scarce, with existing studies plagued by conflicting results, largely due to differences in sampling and research methodologies.

For example, a number of studies reported that the rates of PTSD – with and without comorbid depression and self-harm/attempted suicide – among transitioned members were almost double those of current serving members (Hatch et al., 2013; Jones et al., 2013; Pinder, Iversen, Kapur, Wessely & Fear, 2012). However, other studies report the prevalence of mental disorders as similar across both groups (Fear et al., 2009) or greater in current serving compared to transitioned members (US treatment-seeking samples; Villatte et al., 2015), or they report very specific differences in outcomes between the two groups (Villatte et al., 2015). For instance, Villatte et al. (2015) compared the characteristics of non-fatal suicide attempts in transitioned ($n = 746$) and current serving members ($n = 1,013$) receiving treatment, in a pooled data analysis of six randomised controlled trials examining suicide interventions among members of the military. Although current serving members were more likely than those who had transitioned to report a suicide attempt in their lifetime, among those who attempted suicide, transitioned members made a greater number of attempts. Interestingly, among transitioned members, the majority of first attempts typically occurred after military separation, with only 22% taking place before military enrolment and 21% occurring during active service (Villatte et al., 2015). This provides strong evidence for the overwhelming challenges some members of the military experience while reintegrating into civilian life.

Other studies monitoring changes in symptoms over time (during service and post-service) have reported varying patterns of symptom presentation over the course of a military career. For example, Golub and Bennett (2014) examined substance use patterns (during service and post-service) in 269 transitioned OIF/OEF military members who had discharged from service to low-income minority neighbourhoods within the previous two years. Interestingly, this study found alcohol use increased during military service, decreased dramatically on deployment, and then returned to

pre-military levels after separation from the military. The finding that alcohol use, especially heavy use, declined after separation was consistent with the idea that some individuals participated in a drinking culture while in the military and left it behind after separation. A recent review of the issues faced by transitioning ex-service members in the United Kingdom supported this result, suggesting there is a culture of hazardous drinking in the UK military that is of concern, particularly for those who maintain military social networks (St George's House, 2014). However, it is important to note that differences in military cultures and attitudes towards drinking in different countries may invariably impact the prevalence of alcohol disorder in different military populations (Sundin et al., 2014).

Alcohol misuse, together with depressive and other anxiety disorders, has been reported as one of the primary issues for current serving members of the military in the United Kingdom, and is more prevalent than PTSD (Fear et al., 2009). Members of the UK military report considerably higher rates of alcohol misuse than the general population. It is also reported to be higher than levels in the US and Australian militaries (King's Centre for Military Health Research, 2014; Sundin et al., 2014). This is likely to be reflected in the prevalence of alcohol misuse and mental disorders in those who have transitioned from military service in each of these countries; however, the direction of this relationship (particularly in Australia) is yet to be determined. Currently, alcohol misuse appears to be the US military's primary substance use concern, among both current and ex-serving US members of the military (Golub & Bennett, 2014). Hourani et al. (2012) conducted a longitudinal survey of 475 combat-exposed Marines and examined their mental health before they left the military and six months after returning to civilian life. Overall, they reported a significant decrease in anxiety, depression and PTSD symptoms from pre-transition to six months post-transition. Although there was an overall decrease in levels of symptomatology across the entire cohort, there was an increase in some disorders in a proportion of personnel; specifically, 10% of the cohort reported the onset of PTSD and 13% reported the onset of an anxiety disorder after separating from military service. This highlights that for a subset of military personnel, there can be an increase of psychological problems after discharge.

B.3 Mental health in transitioned Canadian Regular Force members

To date, a Canadian study is the only large-scale population-based study to examine a cohort of transitioned military members. The 2010 Survey on Transition to Civilian Life (STCL) was a national telephone survey that examined the health and wellbeing of 3,154 Canadian Regular Force members after they transitioned to civilian life (Thompson et al., 2011). All members had transitioned out of regular service between 1998 and 2007, and were assessed between two and 12 years after leaving military service. In this study, mental health conditions were assessed using a checklist of self-

reported diagnosed mental health conditions (including mood disorder, anxiety disorder and PTSD) that had lasted six months or more, a single-item measure of self-rated mental health, and the Mental Component Summary score of the 12-item Short Form Health Survey (SF-12).

Results of this study showed that most veterans (67%) assessed their mental health as 'very good' or 'excellent' on a self-rated perceived mental health measure. Regarding specific mental disorders, a single item asked about the presence of mental disorders (including depression) diagnosed by a health professional. Overall, 20% of respondents to the STCL reported either depression or anxiety, and this rate was greater in those accessing Veterans Affairs Canada (VAC) support (52%).

Other mood disorders (mania, dysthymia or bipolar disorder) were reported among only 3% of the survey population, and, again, this was higher for VAC clients (9%) (Thompson et al., 2011). The rate for self-reported (non-PTSD) anxiety disorders was 10% for the survey population, which was higher than in the Canadian general population (5%). Similar to findings for other mental disorders, the rates for anxiety disorders were elevated in VAC clients (30%), indicating that most who had anxiety were already VAC clients (Thompson et al., 2011). Finally, 11% of the total study population reported having PTSD, with a rate of 43% for VAC clients. Too few non-VAC clients reported PTSD to calculate a reliable rate (Thompson et al., 2013; Thompson et al., 2011). The prevalence of self-reported heavy drinking was 25.6%, which is comparable to the general population (Thompson et al., 2011).

The STCL also asked respondents about lifetime suicidal thoughts, suicidal ideation and suicide attempts in the last 12 months. For the sample of transitioned members, 6% had suicidal ideation in the last 12 months, with the rates highest among VAC clients (16%), and comparably lower in non-clients (4%). Of the total survey population, 18% had seriously considered committing suicide at some time in their lives, and this rate was higher in VAC clients (40%) (Thompson et al., 2011). Suicidal ideation was much more common than suicide attempts. Very few respondents had attempted suicide in the last 12 months (1%). The estimated rate for suicide attempts at some time in their life for the total STCL population was 6%, which again was highest in VAC clients (14%). As in most civilian, and military and veteran studies, women were more likely to report suicidal ideation than men (Thompson et al., 2011).

The 2013 Life After Service Survey extended the STCL and examined 2,611 Canadian Regular Force members who transitioned between 1998 and 2012, as well as Reservists who transitioned between 2003 and 2012 (Thompson et al., 2015; Thompson et al., 2014; Van Til et al., 2014a; Van Til, Poirier, Sweet, McKinnon & MacLean, 2014b). The sample included the Kessler Psychological Distress 10-item scale (K10) as an additional measure of distress in the previous month and the Primary Care

PTSD (PC-PTSD) symptom screen (a measure of probable PTSD in the previous month), using *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) criteria cut-off scores (Thompson et al., 2015; Thompson et al., 2014).

Similar to the findings in the STCL study, just over one-third of the Regular Force members who had transitioned were VAC clients – and they had poorer mental health than Reservists. Of the Regular Force members who transitioned, 24% had one or more of the self-reported diagnosed mental health conditions. Self-reported mood disorders were almost three times more prevalent among the Regular Force members who had transitioned than in the general Canadian population, with prevalence of 24% for Regular Force members and 17% for Reservists compared to 6.3% in the general population.

The majority of Regular Force members who had transitioned (79%) showed low levels of psychological distress. On the K10 measure of psychological distress in the previous month, 13% of Regular Force veterans had moderate or severe levels of psychological distress (7% and 5% respectively). The prevalence of self-reported diagnosed PTSD for Regular Force members who had transitioned was 13% and the rate of suicidal ideation in the previous year was 7% (6–8%) (Thompson et al., 2015; Thompson et al., 2014). Of the transitioned groups, transitioned Reservists, particularly those with part-time or temporary full-time service – as opposed to those with full-time service in support of deployed operations, domestically or internationally – had the least difficulty adjusting to civilian life.

It was interesting to note that in the 2013 Life After Service Survey, of the 13% of transitioned Regular Force members with self-reported diagnosed PTSD, 38% did not meet the screening criteria for probable PTSD as measured by the PC-PTSD (Thompson et al., 2015). This suggests that about one-third with a diagnosis of PTSD were not highly symptomatic in the month before the survey. Conversely, 42% of transitioned Regular Force members who screened positive for PTSD in the previous month did not have a self-reported diagnosis of PTSD, and may have been captured after being undiagnosed and/or having subsyndromal mental health problems. This suggests an unmet need for recognition and diagnosis of PTSD in ex-serving members who are not seeking treatment and are living in the community (Thompson et al., 2015).

B.4 Risk and protective factors

Despite the lack of direct comparability of studies undertaken in different countries, there is an emerging profile of transitioned members of the military who have particularly poor mental health. This profile comprises a number of distinct risk and protective factors known to influence mental health during and after the transition period. These include pre-enlistment factors (childhood and non-military trauma and

adversity), socio-demographic characteristics (age, sex and educational level), military and service-related factors (rank, Service, years of service, service-related mental and physical health problems) and transition factors (reason for transition, years since transition) (MacLean et al., 2014).

The Canadian military study by Thompson et al. (2013) also examined the link between the health-related quality of life of members and a number of socio-demographic and transition factors. In this study, poorer mental and physical health was observed in transitioned members who were middle-aged; lower in rank; widowed, separated or divorced; or unemployed, earning a low income or dissatisfied with their financial situation; had 10 to 19 years of service; were living in conditions that made it difficult to maintain physical and mental health; had a disability; had low social support; or who were medically discharged.

In the UK context, Hatch et al. (2013) compared 1,753 service leavers with 6,511 regular serving members included in a representative cohort study of UK armed forces. In this study, service leavers were more likely than service members to report common mental disorders (assessed by the 12-item General Health Questionnaire), less social participation outside work and general disengagement with military social contacts. Interestingly, the failure to form and participate in social networks outside the Armed Forces appeared to have a differential impact on mental health, with the maintenance of *military-specific* social networks being associated with adverse psychological consequences, with the risk for common mental disorders also being partially explained by the social disengagement reported in this group. Pinder et al. (2012) reported that self-harm and suicide attempts were associated with being younger, experiencing greater childhood adversity and undertaking a shorter term of service, in a sample of UK current and ex-serving members of the military (Pinder et al., 2012).

Hourani et al. (2012) examined 475 US combat-exposed Marines six months after they transitioned to civilian life, and revealed similar risk and protective factors for those meeting screening criteria for mental health problems (depression, anxiety and PTSD) and functional impairment. In this study, primary risk factors included experiencing higher levels of pre-separation combat exposure and post-separation stress across multiple life domains. Marines with a mental health problem were also more likely to report a reason other than retirement or expiry of service for leaving the military than those not reporting a mental health problem. In this study, protective factors included having higher scores for pre-separation resilience and perceived social support at follow-up. Consistent with the Canadian research, reintegration difficulties were higher among US veterans who served in OIF, OEF or Operation New Dawn and who were Department of Veterans Affairs (VA) health care users (62%), than for those who did not use VA (45%). Overall, veterans identified as VA users had poorer mental health

and greater reintegration difficulty and alcohol misuse than non-VA users (62% vs 45%) (Sayer et al., 2015).

The number of readjustment stressors was reported to closely correlate with psychiatric problems and a significant risk factor for suicide in a study of 233,803 members who had left the UK Armed Forces (1996–2005). In this study, the odds of suicidal ideation among a psychiatrically impaired subsample with a high number of stressors was 4.3 times that of the no-stressor group. After adjusting for individual mental health conditions, the odds of suicidal ideation among those experiencing the highest number of stressors were 5.4 times that of veterans experiencing no readjustment stressors (Kapur, While, Blatchley, Bray & Harrison, 2009). Other post-service stressors known to be associated with poor outcomes included relationship and family conflict, separation and divorce, financial stress, unemployment and reliance on maladaptive coping strategies such as alcohol misuse (Golub & Bennett, 2014; Hoggatt, Williams, Der-Martirosian, Yano & Washington, 2015).

Similar to what has been observed for current serving military members, other stressors experienced before and during service may also contribute to the risk of developing mental health problems for some ex-serving members in the transition period. This includes pre-enlistment or childhood adversity, such as childhood physical abuse, physical assault, social adversity and non-military-related accidents or disasters (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), as well as combat exposure and physical assault occurring during military service (Clancy et al., 2006). Other non-service-related lifetime traumas, including adult sexual trauma and physical assault after military service, are also associated with PTSD symptoms in particular (Clancy et al., 2006), as are a number of trauma types (Wisco et al., 2014).

A key limitation in understanding the impact of transition on the mental health of military members is the lack of longitudinal studies documenting health and functioning of healthy regular serving populations, and how these may shift over time. Clearly, with the higher rates of delayed-onset PTSD in military populations, this assessment over time is particularly important. The current report goes some way to addressing these issues.

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
BRS	Brief Resilience Scale
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
GP	general practitioner
HILDA	Household, Income and Labour Dynamics in Australia
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
ISI	Insomnia Severity Index
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
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OR	odds ratio
OSU TBI-ID	Ohio State University Traumatic Brain Injury Identification Method
PBS	Pharmaceutical Benefits Scheme
PCL-C	Posttraumatic Stress Disorder Checklist – civilian version
PC-PTSD	Primary Care PTSD Screen
PHQ-9	Patient Health Questionnaire 9-item scale
PMKeyS	Personnel Management Key Solution
Programme	Transition and Wellbeing Research Programme
PTSD	posttraumatic stress disorder
RPBS	Repatriation Pharmaceutical Benefits Scheme
SE	standard error
STCL	Survey on Transition to Civilian Life
VA	US Department of Veterans Affairs
VAC	Veterans Affairs Canada

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.

Help-seeking latency. The delay in time between first becoming concerned about a health problem and first seeking help for that problem. To assess help-seeking latency in the study, participants were asked to indicate when they first sought help for their own mental health. Options included ‘within three months of becoming concerned’ or ‘within one year of becoming concerned’. Alternatively, participants were able to specify the number of years since becoming concerned. This item was developed by researchers for use in the study.

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.

Pharmaceutical Benefits Scheme (PBS). The PBS began as a limited scheme in 1948, offering free medicines for pensioners and a list of 139 ‘life-saving and disease-preventing’ medicines free to other members of the community. Today, the PBS provides timely, reliable and affordable access to necessary medicines for all Australians. The PBS is part of the Australian Government’s broader National

Medicines Policy. Healthcare utilisation and cost data, including Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme data, were obtained for consenting serving and ex-serving ADF members as part of the current program of research.

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 (referred to as ‘Officers’ in current report):** 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.

Repatriation Pharmaceutical Benefits Scheme (RPBS). The benefits listed in the RPBS can only be prescribed for Department of Veterans' Affairs beneficiaries who hold a Gold, White or Orange Card. Healthcare utilisation and cost data, including Pharmaceutical Benefits Scheme/Repatriation Pharmaceutical Benefits Scheme data, were obtained for consenting serving and ex-serving ADF members as part of the current program of research.

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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