

OFFENDING BEHAVIOUR, MENTAL HEALTH AND WELFARE NEEDS OF VETERANS IN LIAISON AND DIVERSION SERVICES

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Contents

Summary	1
Glossary	4
Chapter 1. Background	5
1.1 Veterans in the Criminal Justice System	5
1.2 Liaison & Diversion services.....	6
1.3 Study aims	7
1.4 A note on methods	7
Chapter 2. Military personnel and civilians in L&D services	8
2.1 Veteran status.....	8
2.2 Regional variations in veteran status	9
2.3 Socio-demographic characteristics and welfare needs	12
Chapter 3. Offending behaviour	15
Chapter 4. Health needs.....	17
4.1 Mental disorders	18
Chapter 5. High-risk subgroups of veterans	20
5.1 Violence against the person.....	20
5.2 Sex offending.....	20
5.3 Acquisitive offences.....	21
5.4 Motoring offences.....	21
5.5 Summary	22
Chapter 6. Discussion	23
6.1 Strengths and limitations	26
6.2 Implications	27
6.3 Recommendations.....	28
Chapter 7. References	31
Appendix A1. Variables.....	35
Appendix A2. Statistical Analyses.....	39
A2.1 Preliminary/descriptive analyses	39
A2.2 Associations with veteran status	39
A2.3 Within-veteran analyses.....	39
Appendix A3. Tables	41
Appendix A4. Serving personnel.....	53
A4.1 Socio-demographic characteristics.....	53
A4.2 Offence characteristics of currently serving personnel	55
A4.3 Health needs of currently serving personnel	56
Appendix A5. Additional recommendations	57
Acknowledgements	58

Summary

This project utilised data from 29 Liaison and Diversion (L&D) services across England from the period 2015-2016. Individuals can be referred to these services when they enter the Criminal Justice System (CJS), e.g. from police custody suites or magistrates' courts, if concerns about mental health or psychosocial needs are raised. We were able to identify which of these referrals pertained to individuals who had previously served in the UK Armed Forces (referred to in this report as veteransⁱ), and were therefore able to compare and contrast socio-demographic factors, offending behaviour and mental health characteristics of veterans with those of non-veterans accessing the L&D service. All of the information in the database was collected by L&D service mental health practitioners during an initial screening assessment. All socio-demographic information was collected via self-report. Offence characteristics were determined from the source of the referral (e.g. from the Police, or from the Prisoner Escort Service). Information regarding the individual's vulnerabilities (mental health, alcohol/substance misuse, and other vulnerabilities) was gathered from a range of sources: from previous contact with L&D services, from other health databases, or from standardised screening tools.

Socio-demographic characteristics of veterans and non-veterans

Of the 49,793 cases recorded in the L&D database in the year from April 2015 to April 2016, 1,215 (2.4%) reported previous or current service in the UK Armed Forces. The majority of these personnel (N = 1,067, 88%) reported that they had left service and were classified as veterans: this group is the focus of this report. Compared to non-veterans, veterans were predominantly male (96% vs 76%), white British (91% vs 84%), and aged over 30 (74% vs 55%). A large proportion of veterans reported to be in owned or rented accommodation (60%); a little more than in the non-veteran sample (55%); and veterans were less likely to be in temporary accommodation or living with family. However, rates of homelessness were similar (9% of both veterans and non-veterans). Whilst the majority of veterans were unemployed (42%), more veterans were in employment than non-veterans (32% vs 17%). There were significant regional variations in the proportion of veterans compared to non-veterans, with the greatest proportion of total veteran cases coming from L&D services in the North West (19% vs 12% of non-veterans), and the smallest proportion of veteran cases coming from those in London (7% vs 15% of non-veterans).

Offence characteristics of veterans and non-veterans

All cases pertained to individuals who had been charged with, or were suspected of having committed, a criminal offence. Offences classed as violence against the person were the most prevalent amongst veterans and non-veterans, however a larger proportion of veterans (37%) than non-veterans (32%) were accused of having committed this type of offence. A larger proportion of veterans than non-veterans were accused of motoring (8% vs 4% of non-veterans) and sex offences (8% vs 5% of non-veterans). Conversely, a smaller proportion of veterans than non-veterans were

ⁱ A person who has served at least one day in the UK Armed Forces (as a Regular or a Reserve), and has left service.

accused of acquisitive offences (e.g. theft, burglary, fraud: 10% vs 16% of non-veterans) or non-interpersonal violence (e.g. criminal damage, arson: 8% vs 10% of non-veterans). On analysis, which took account of socio-demographic differences between veterans and non-veterans, we found that veteran status was independentlyⁱⁱ positively associated with violence against the person and motoring offences, and was negatively associated with acquisitive offences. Veteran status was also negatively associated with sex offences (despite a larger proportion of veterans committing sex offences), suggesting that these differences were driven by socio-demographic factors.

Health needs of veterans and non-veterans

Mental health problems were prevalent in the sample as a whole. However, veterans were more likely to screen positive for any mental disorder than non-veterans (69% vs 59% of non-veterans). Anxiety and Depression were the most common mental health problems recorded among veterans and these were more prevalent than among non-veteran offenders (37% of veterans vs 12% of non-veterans reported Anxiety; and 32% of veterans vs 27% of non-veterans reported Depression). A larger proportion of veterans than non-veterans reported Adjustment Disorder (7% vs 5% of non-veterans) and Dementia (1% vs 0.2% of non-veterans). In addition, veterans reported more co-occurring mental health problems than non-veterans (23% vs 15% of non-veterans reported more than one mental health problem). Conversely, smaller proportions of veterans than non-veterans reported Schizophrenia (5% vs 12% of non-veterans), Personality Disorder (7% vs 11% of non-veterans) and ADHD (0.5% vs 3% of non-veterans). On analysis, we found that veteran status was independently positively associated with Anxiety, Adjustment Disorder, Dementia and the presence of co-occurring mental health problems, and negatively associated with Schizophrenia and ADHD.

Furthermore, larger proportions of veterans than non-veterans reported alcohol misuse (38% vs 29% of non-veterans) and physical health problems (18% vs 10% of non-veterans). Conversely, smaller proportions of veterans than non-veterans reported substanceⁱⁱⁱ misuse (18% vs 28% of non-veterans), learning difficulties (1% vs 4%), and social/communication difficulties (3% vs 4% of non-veterans). On analysis, veteran status was independently positively associated with alcohol misuse and physical health problems, and independently negatively associated with substance misuse, learning difficulties and social/communication difficulties.

Veteran-specific risk factors for different offence types

We also examined whether there were any particular risk factors associated with different types of offences within the veteran sample. Age, employment status and accommodation status were all independent risk factors for offending in the veteran sample. Being aged over 60 was a risk factor for sexual offending. Being unemployed was a risk factor for acquisitive offending, whereas being employed was a risk factor

ⁱⁱ Statistical note: “independent” associations are those that remain statistically significant after taking into account the effects of individual differences in socio-demographic characteristics. A positive association with veteran status means that the *presence* of a particular factor is more likely in veterans than non-veterans (although we note that due to the cross-sectional nature of this study we cannot infer the direction of causality).

ⁱⁱⁱ This refers to substances other than alcohol.

for sexual and motoring offending. Lastly, being homeless was a risk factor for acquisitive offending.

Regarding mental health-related risk factors of offending, Anxiety and the presence of co-occurring mental health problems were independent risk factors for violence against the person offending. Bipolar Disorder^{iv} and substance misuse were independent risk factors for acquisitive offending. Alcohol misuse was an independent risk factor for motoring offences.

^{iv} However, we note that there were small numbers of veterans with Bipolar Disorder in this analysis.

Glossary

ADHD	Attention-Deficit/Hyperactivity Disorder
BME	Black and Minority Ethnic
CI	Confidence Interval
CJS	Criminal Justice System
L&D	Liaison and Diversion
MH	Mental health
Non-veteran	A person who has not served in the UK Armed Forces
OR	Odds Ratio
PTSD	Posttraumatic Stress Disorder
TIC	Trauma-informed care
Veteran	A person who has served at least one day in the UK Armed Forces (as a Regular or a Reserve), and has left service

Chapter 1. Background

1.1 Veterans in the Criminal Justice System

The majority of service leavers make successful transitions back into civilian life (1). However, recent research has shown that a minority find themselves involved in the Criminal Justice System (CJS), often as a result of health, behavioural and social problems (2). Estimates of the proportion of the prison population who have previously served in the UK Armed Forces have ranged from 3.5% to 17% (3,4) suggesting that around 3,000 to 14,000 prisoners may be ex-service personnel (5). Furthermore, it was estimated that 3.4% of adults subject to probation supervision in England and Wales in 2009 were veterans (6). A government review of ex-Armed Forces Personnel in the CJS (7) highlighted the need for better identification of the needs of veterans in the CJS to inform the development of services to help reduce re-offending. Previous research into the needs of veterans in the CJS has been limited by the use of biased samples from specific areas of the CJS, such as prison or probation, with limited data on health and welfare needs (8). Access to the national Liaison and Diversion (L&D) database provides an opportunity to compare the offending behaviour, mental health, and welfare needs of veterans with non-veterans in contact with the CJS.

Offending by military personnel

Government statistics tell us that veterans form the largest occupational group in prison and under the supervision of probation services, and that they are more likely to have committed a violent or sexual offence than offenders who have not served in the military (3,6). However, these statistics relate to those who are given a custodial sentence or probation supervision order. Many offenders will not receive either category of sentence, or at least not initially. Risk factors for offending in veterans are largely similar to those for civilians (9,10), but with a few notable exceptions. First, veteran offenders tend to be older (3). This may be because there is limited opportunity for offending during military service, and thus the individual's time in service acts as a "hiatus" from offending that would have occurred anyway (8). Or, it is possible that experiences resulting from military service have increased the risk of offending in some individuals (11), suggesting a distinct pathway to offending in this particular group. Second, there is evidence that deployment (or aspects of deployment, such as combat) may increase offending among veterans (11). Third, mental health problems, such as common mental disorders and Posttraumatic Stress Disorder (PTSD), as well as alcohol misuse, have been shown to increase the risk of offending behaviour among veterans (11,12).

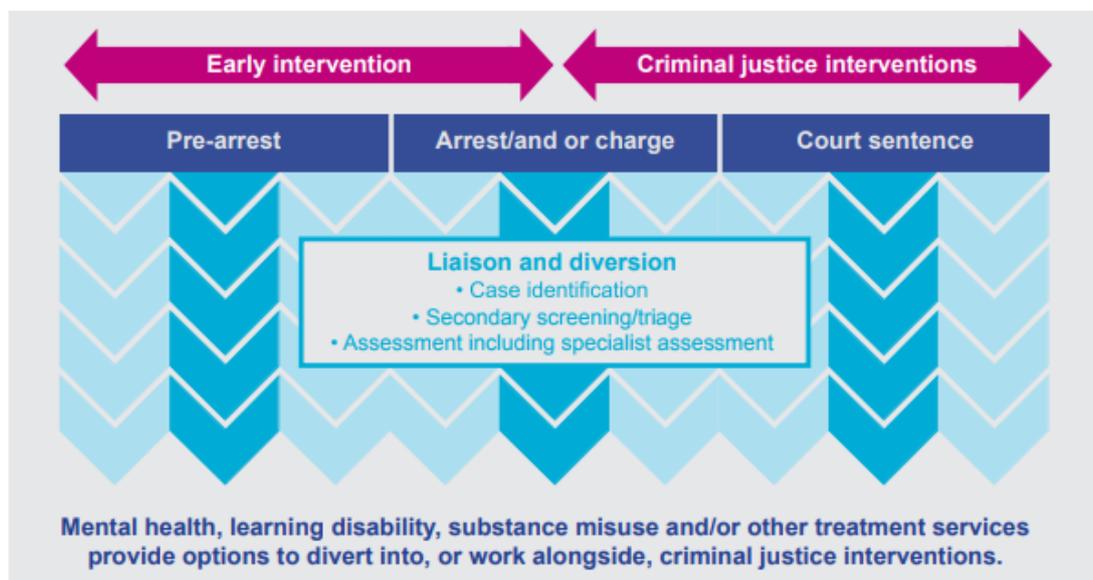
Existing research suggests that socioeconomic needs are strong risk factors for offending among veterans and that the reversal of these risks (e.g. financial stability, stable accommodation, relationship stability) can reduce the risk of offending among veterans and can act as protective factors in the presence of mental health problems (13). Therefore, by the identification of socioeconomic and mental health needs among veterans as they enter the CJS we have the potential to inform the development of early intervention services for veterans in the CJS.

1.2 Liaison & Diversion services

The purpose of Liaison and Diversion (L&D) services is to provide an assessment of individuals within the CJS who have been identified as vulnerable as a result of suspected mental health or psychosocial needs, to ensure that they receive the appropriate support, and to (where possible) divert them out of the CJS and into health, social care or other services. Following recommendations from the Bradley report in 2009 (14), a “National Model” of L&D services was established to ensure consistency among pre-existing services, and to create new services in areas of England that had none. This new model was trialled in 10 sites with existing L&D services in England in April 2014, and was rolled out to 29 sites in April 2015.

Individuals within the CJS who are identified as potentially having mental health problems, learning difficulties, or other psychosocial vulnerabilities may be referred to L&D services for screening, further assessment and, where indicated, treatment. Referral to L&D services should occur at the earliest opportunity, but may take place at various stages of the CJS, including: pre-arrest, arrest, charge, and Court (see Figure 1). Furthermore, referrals can be made by a wide range of agencies, including: police, Crown Prosecution Service, youth offending teams, social workers, drugs/alcohol services, defence lawyers, and parents/guardians/family members. This broad referral process maximises the reach of the L&D service to the most vulnerable of individuals at the earliest opportunity. Individuals referred to L&D services are offered a screening appointment with a mental health practitioner. As part of this screening they are asked whether they have ever served in the UK Armed Forces.

Figure 1: Liaison and Diversion process. NHS England, 2015 (15).



1.3 Study aims

We utilised the national administrative database of cases of vulnerable offenders referred, both military personnel and civilians, who were screened by the 29 L&D services across England during 2015-2016, in order to:

- compare the socio-demographic characteristics of veteran and non-veteran offenders
- compare the health needs of veteran compared to non-veteran offenders
- compare offending behaviour among veterans and non-veterans
- investigate the association between veteran status and: (i) offending behaviour; and (ii) health needs and mental disorders among offenders referred to L&D services
- examine risk factors for different types of offending among the veterans referred to L&D services.

1.4 A note on methods

We have provided full details of the methods, including descriptions of the variables used in the database and how they were collected, in Appendix A1. Full details of the statistical analyses are provided in Appendix A2, and all statistical results tables are provided in Appendix A3.

Chapter 2. Military personnel and civilians in L&D services

This study employed routinely-collected data from L&D services. This consisted of data collected by 29 separate L&D services from April 2015 until April 2016^v. Once a referral has been made to the L&D service, the individual is offered a screening appointment, during which the L&D service mental health practitioner gathers information about them, pertaining to their: socio-demographics (age, ethnicity, employment and accommodation status, etc.); current offence (they report the most severe offence at the time of charge, or the most serious suspected offence in cases where the individual has not yet been charged); military status (whether the individual has ever served in the UK Armed Forces, including as a reserve, although reserve status was not recorded); mental health needs (the presence of one or more diagnosed or suspected mental disorders); alcohol/substance use; and other vulnerabilities (learning, physical, or social and communication difficulties). This information is entered onto the database on a case-by-case basis: each referral is treated as a separate case (an individual may have repeated entries relating to repeated referrals). If any “vulnerabilities” are identified during the screening appointment, the individual is offered further assessment and/or onward referral to specialist services (e.g. health- and social-care, drug/alcohol treatment, etc.).

2.1 Veteran status

Military personnel were defined, using the standard UK definition, as anyone who had served for at least one day in the UK Armed Forces (as a regular or reservist) (16). A total of 62,397 referrals were made to the 29 L&D sites in England between April 2015 and April 2016. Of these, 49,793 cases (80%) included information regarding the individual’s military status, 1,215 of which (2.4% of those with a recorded military status) pertained to individuals who reported that they had served, or were currently serving, in the UK Armed Forces. Individuals were asked whether they had ever served in the UK Armed Forces, and the length of time since they left/were discharged (currently serving, discharged within the last 12 months, 1-5 years ago, or more than 5 years ago).

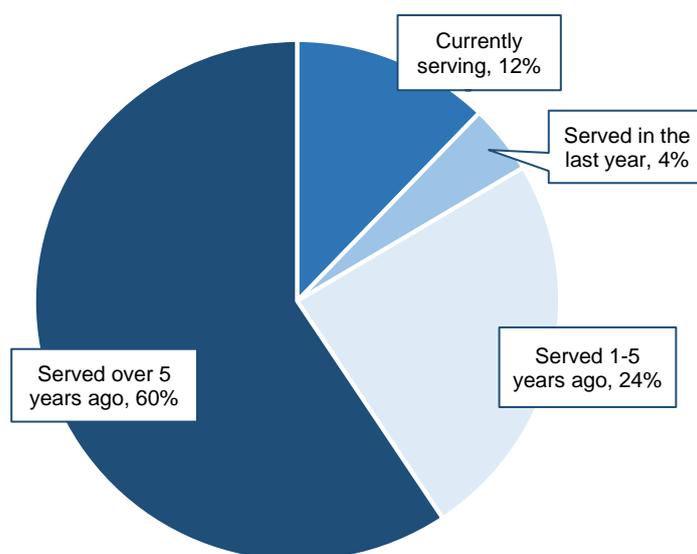
The majority of military personnel in the database had left service over five years ago (N = 721, 60%; see Figure 2); around a quarter (N = 294, 24%) had served one to five years ago; and the remaining cases reported that they had either served in the past year (N = 52, 4%), or were currently serving (N = 148, 12%).

Given that the majority of the military personnel in the database were veterans, we categorised the cases with a recorded military status as veterans (N = 1,067; includes individuals who left military service within the last 12 months, 1-5 years ago, or more than 5 years ago), or non-veterans (N = 48,578), and excluded those who reported that they were currently serving (N = 148)^{vi}.

^v Full details of the variables collected by L&D service are provided in Appendix A1.

^{vi} A full description of the 148 serving personnel is provided in Appendix A4.

Figure 2: Serving status of military personnel in L&D services



2.2 Regional variations in veteran status

There were substantial differences between veterans and non-veterans in terms of the proportions of total cases from each regional L&D service location (see Figure 3 and Table 6 in Appendix A3). The greatest proportion of veteran cases came from the North West (N = 199, 19% of veterans; N = 5,619, 12% of non-veterans), whereas the greatest proportion of non-veteran cases came from the South East (N = 9,434, 19% of non-veterans; N = 156, 15% of veterans). The proportions of cases coming from London also differed significantly between veterans (N = 75, 7%) and non-veterans (N = 7,246, 15%). On analysis, region was significantly (and independently) associated with veteran status (see Figure 4).

The proportion of veterans within L&D services in each geographical region ranged from 1.0% in London to 4.3% in Yorkshire (see Figure 5). These were generally lower than the proportions of veterans in each regional population, which ranged from 2.0% in London to 7.4% in the South West in 2015-2016 (17) (see Figure 5). Some regions showed a greater discrepancy between these two proportions than others. For example, the North East and South East were among the highest in terms of the proportions of veterans in the regional population, and yet low proportions of veterans were accessing L&D services in these areas. In contrast, Yorkshire and London had similar proportions of veterans accessing L&D services to the proportions of veterans in their respective regional populations.

Figure 3: Regional variations in veteran status (bars represent the percentage of total cases in the database by region).

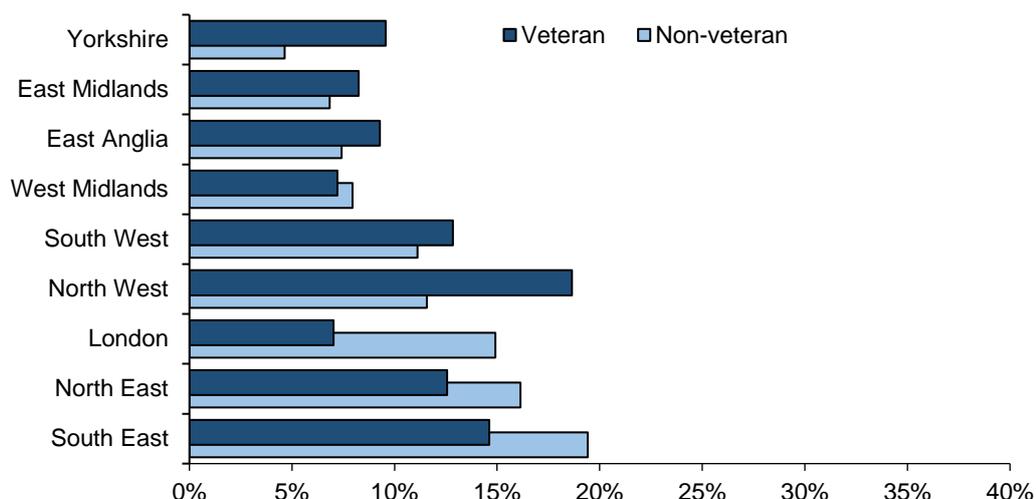
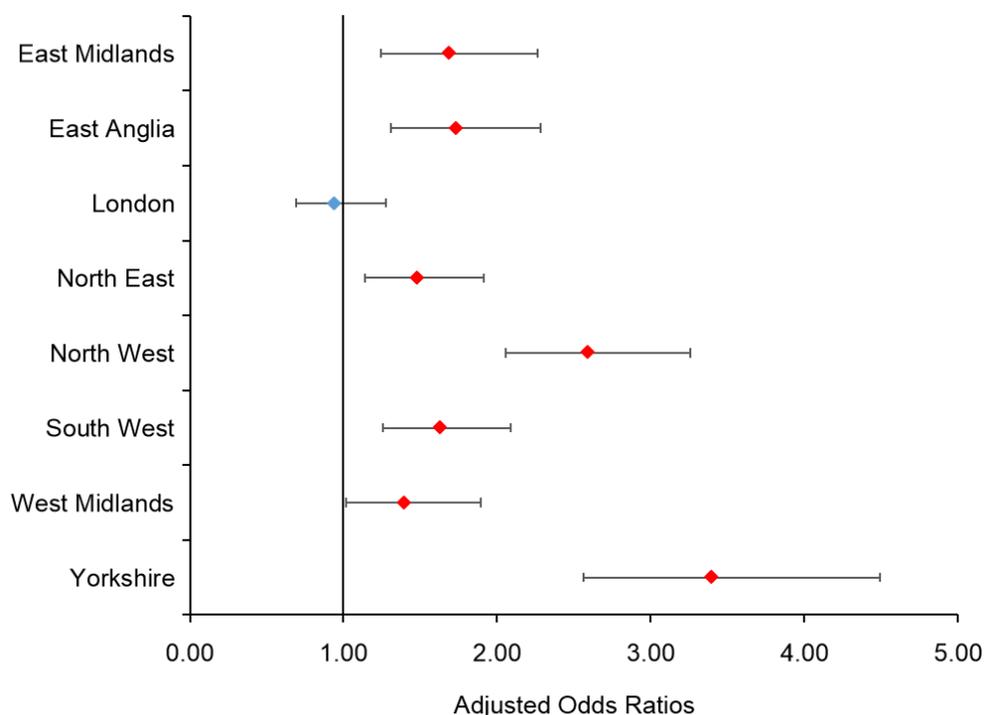
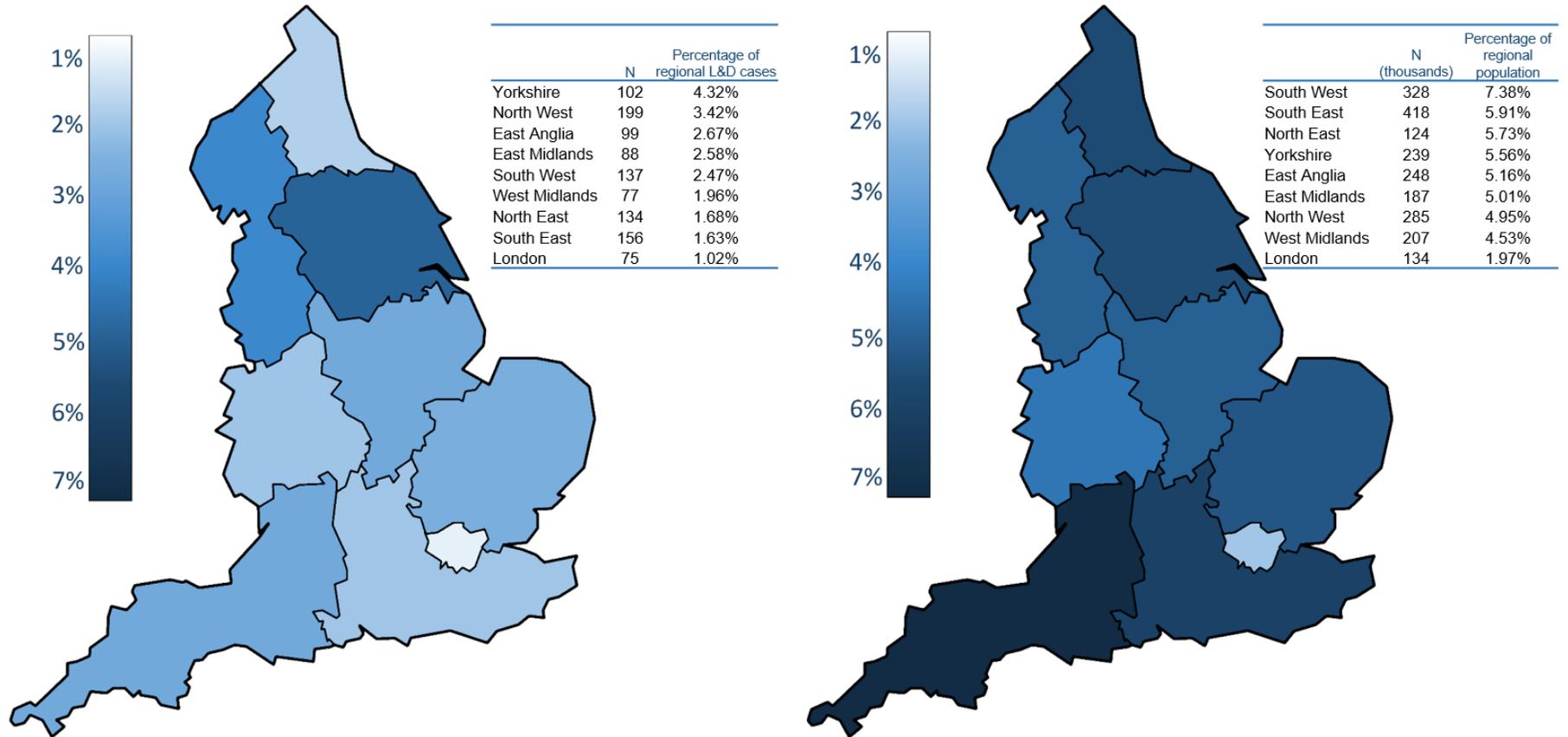


Figure 4: Adjusted associations between L&D site region and veteran status^{vii}



^{vii} Odds Ratios are adjusted for age, gender, ethnicity, employment status and accommodation status. Horizontal bars indicate 95% confidence intervals (CIs). CIs that do not overlap the vertical reference line (i.e. the South East region reference category) are statistically significant. Odds Ratios above 1 indicate that veterans are more likely than non-veterans to be situated in that particular region vs. the South East. Full analysis details are in Appendix A2.

Figure 5: Percentage of regional L&D service cases relating to veterans (left panel) compared to percentage of regional population who are veterans (right panel)^{viii}



^{viii} Data for the right panel are taken from the Ministry of Defence annual population survey of UK armed forces veterans in 2015 (<https://www.gov.uk/government/statistics/annual-population-survey-uk-armed-forces-veterans-residing-in-great-britain-2015>)

2.3 Socio-demographic characteristics and welfare needs

Gender

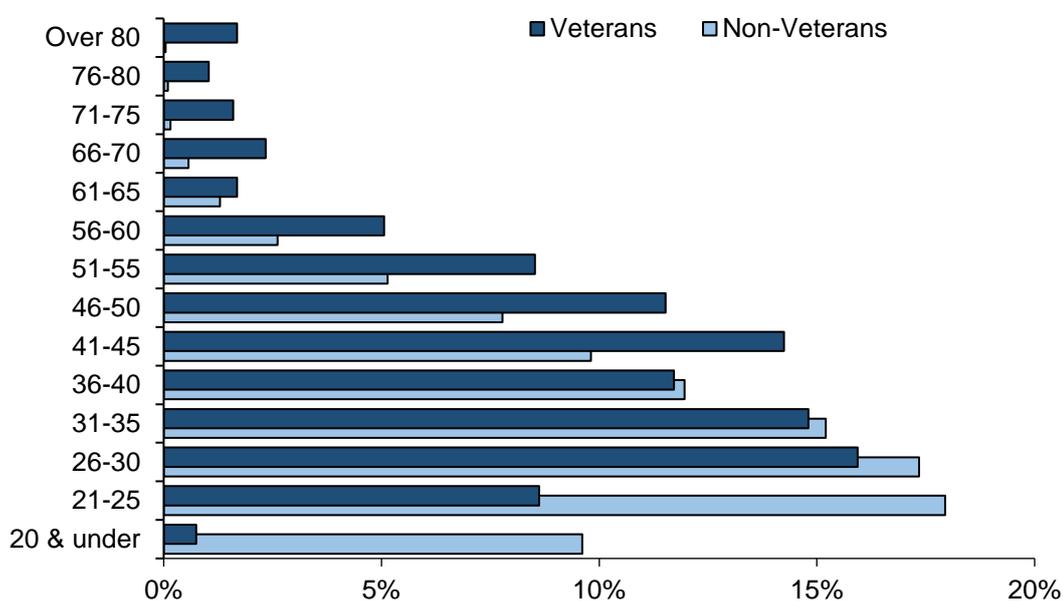
The majority of veterans (N = 1,028, 96%) and non-veterans (N = 37,112, 76%) in the sample were male (see Table 6 in Appendix A3). However, gender was significantly (and independently^{ix}) associated with veteran status: there was a smaller proportion of females in the veteran sample than in the non-veteran sample.

Age

The majority of the veterans in the sample were aged from 26 to 30 (N = 170, 16%), whereas the majority of non-veterans were aged from 21 to 25 (N = 8,717, 19%; see Figure 6). For the purposes of the statistical analyses, age was recoded in to four categories: 30 years and under, 31 to 45 years, 46 to 60 years, and over 60 years.

Age was significantly (and independently) associated with veteran status: greater proportions of veterans than non-veterans were aged 31 to 45 (N = 435, 41% vs. N = 17,960, 37% of non-veterans), 46 to 60 (N = 268, 25% vs. N = 7,545, 16% of non-veterans), or over 60 (N = 89, 8% vs. N = 1,050, 2% of non-veterans; see Table 6 in Appendix A3).

Figure 6: Age distributions of veterans and non-veterans in L&D services



Ethnicity

The majority of veterans (N = 974, 91%) and non-veterans (N = 40,981, 84%) identified as white (see Table 6 in Appendix A3). However, ethnicity was significantly (and

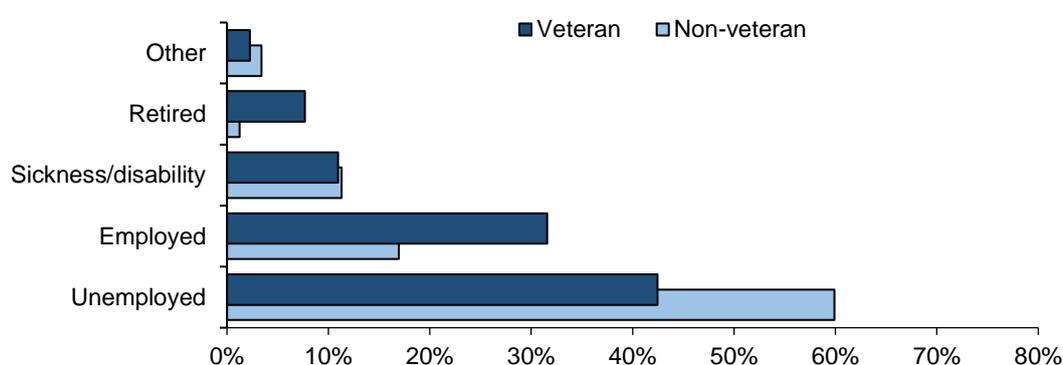
^{ix} Statistical note: “independent” associations are those that remain statistically significant after taking into account the effects of individual differences in socio-demographic characteristics. A positive association with veteran status means that the *presence* of a particular factor is more likely in veterans than non-veterans (although we note that due to the cross-sectional nature of this study we cannot infer the direction of causality).

independently) associated with veteran status: a lower proportion of veterans than of non-veterans identified as black and minority ethnic (BME).

Employment status

The majority of veterans reported that they were unemployed (N = 453, 42%; see Figure 7 and Table 6 in Appendix A3). However, this proportion was considerably smaller than that of the non-veteran sample (N = 29,104, 60%). A much greater proportion of veterans than non-veterans reported that they were employed (veterans, N = 337, 32%; non-veterans, N = 8,239, 17%) or retired (veterans, N = 82, 8%; non-veterans, N = 601, 1%). Employment status was significantly (and independently) associated with veteran status.

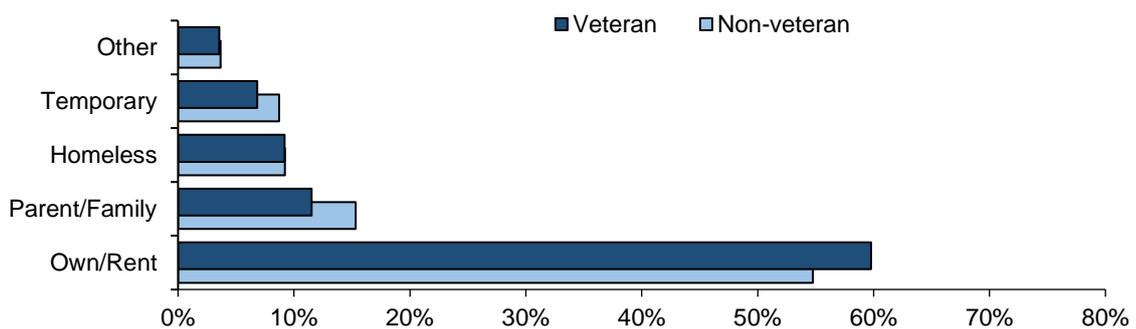
Figure 7: Employment status of veterans and non-veterans in L&D services



Accommodation status

The largest category of accommodation for both veterans (N = 638, 60%) and non-veterans (N = 26,603, 55%) was owned or rented accommodation (see Figure 8 and Table 6 in Appendix A3). A smaller proportion of veterans (N = 123, 12%) than of non-veterans (N = 7,445, 15%) reported that they were living with parents/relatives, and a smaller proportion of veterans (N = 73, 7%) than of non-veterans (N = 4,234, 9%) reported that they were living in temporary accommodation. Similar proportions of veterans (N = 98, 9%) and non-veterans (N = 4,481, 9%) reported that they were homeless. However, accommodation status was not independently associated with veteran status.

Figure 8: Accommodation status of veterans and non-veterans in L&D services



Chapter 3. Offending behaviour

All of the individual cases recorded in the L&D service database had been charged with, or were suspected of having committed, a criminal offence. For each case, the L&D service practitioner recorded the most serious index^x offence that the individual was charged with, or suspected of having committed (16). Offences were classified as: violence against the person (including murder, manslaughter, violence against the person, harassment, and robbery); non-interpersonal violence (including criminal damage, arson, possession of an offensive weapon, and possession of a firearm); sex offence; acquisitive offence (including theft, burglary, and fraud/forgery); drug offence; public order offence; motoring offence; breach of court order; and other^{xi}.

Figure 9 shows the distribution of offence types among veterans and non-veterans in the L&D service. Significantly larger proportions of veterans than of non-veterans were charged with offences classified as violence against the person (veterans, N = 396, 37%; non-veterans, N = 15,410, 32%), sex offences (veterans, N = 82, 8%; non-veterans, N = 2,512, 5%), and motoring offences (veterans, N = 83, 8%; non-veterans, N = 2,136, 4%). Conversely, a significantly smaller proportion of veterans than non-veterans had committed acquisitive offences (veterans, N = 103, 10%; non-veterans, N = 7,793, 16%). When socio-demographic characteristics were accounted for, veteran status was independently associated with all of these offence types (see Figure 10 and Table 7 in Appendix A3). Veteran status was associated with increased risk of violence against the person and motoring offences, and reduced risk of sex offences and acquisitive offences. Of particular note, while a *higher* proportion of veterans (N = 82, 8%) than non-veterans (N = 2,512, 5%) were charged with sex offences, when the socio-demographic characteristics were adjusted for in the analyses, veteran status was associated with a *lower* risk of sex offending. No single socio-demographic variable was responsible for this change in the direction of association between veteran status and sex offending.

^x This was the “current” offence that an individual was charged with, or suspected of having committed.

^{xi} For the purposes of statistical analyses, offence type was recoded into eight separate binary variables, each indicating the presence or absence of each offence type (as in Van Dyke & Orrick (25)). We note that because all of the individuals that were referred to L&D services had been charged with an offence, the absence of one offence type indicates that they were charged with a different offence type (not the absence of an offence).

Figure 9: Distribution of offence types among veterans and non-veterans in L&D services^{xii}

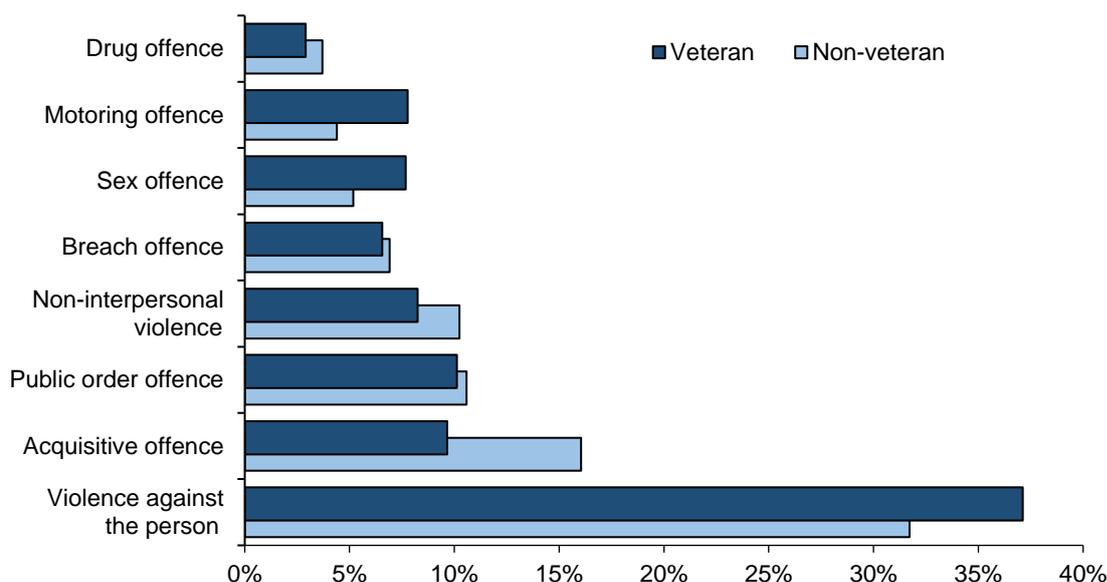
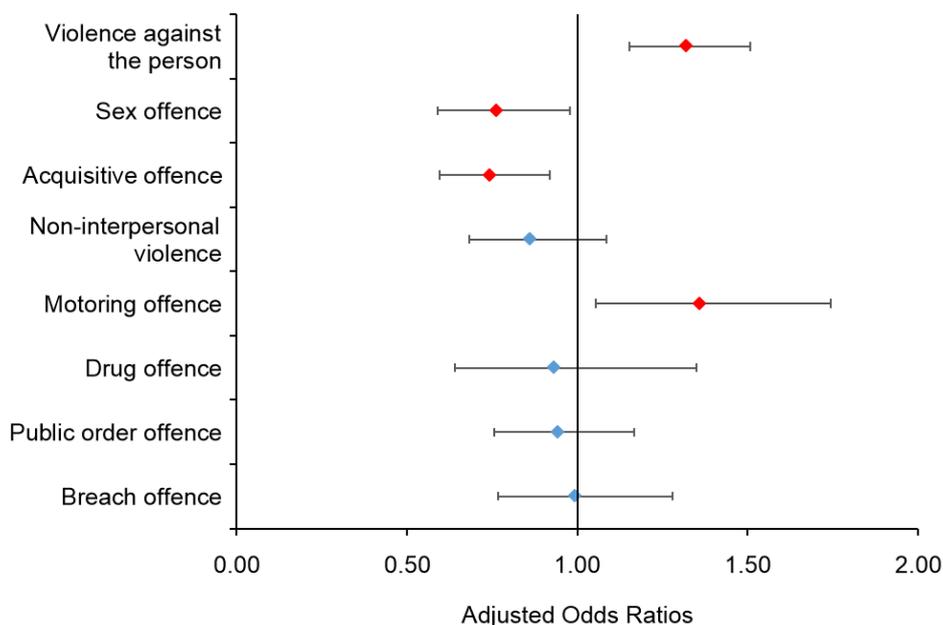


Figure 10: Associations between offence type and veteran status^{xiii}



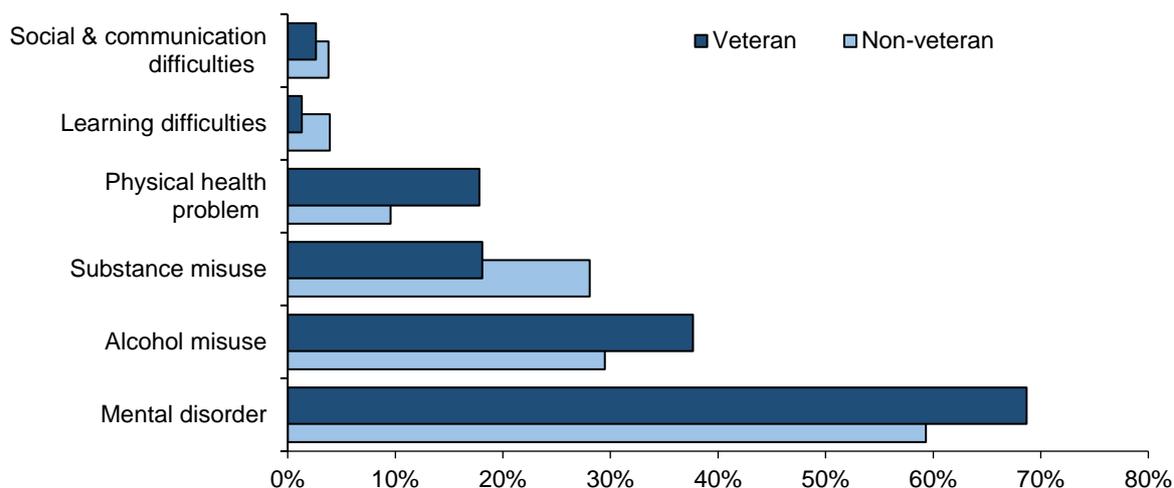
^{xii} The remainder of the cases in the sample had committed offences classed as “other” (veterans, N=80, 8%; non-veterans, N = 4509, 9%).

^{xiii} Odds Ratios are adjusted for age, gender, ethnicity, employment status, and region. Horizontal bars indicate 95% confidence intervals (CIs). CIs that do not overlap the vertical centre line are statistically significant (indicated by red markers). Odds Ratios above 1 indicate that veterans are more likely than non-veterans to have committed that offence type. Full analysis details are in Appendix A2.

Chapter 4. Health needs

The L&D service dataset also included information regarding the presence of a number of needs, including: probable mental disorders, alcohol misuse, substance misuse, physical health problems, social and communication difficulties, and learning difficulties (see Figure 11).^{xiv}

Figure 11: The health needs of veterans and non-veterans in L&D services

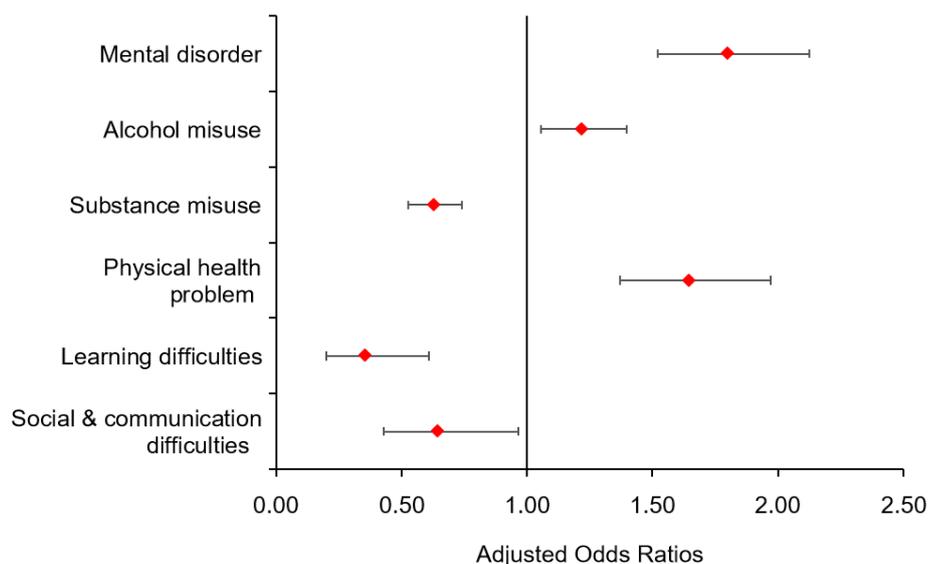


Mental disorders were common across the whole sample, with 69% (N = 733) of veterans and 59% (N = 28,820) of non-veterans having at least one mental disorder recorded.

All of the recorded health needs were independently associated with veteran status (see Table 8 in Appendix A3 and Figure 12). Specifically, veteran status was associated with an increased likelihood of reporting any mental disorder, alcohol misuse, or physical health problem. Conversely, veteran status was associated with a decreased likelihood of reporting substance misuse, learning difficulties or social and communication difficulties.

^{xiv} Full details of the data collection methods and classification of variables are presented in Appendix A1.

Figure 12: Associations between the veteran status and the needs of offenders in L&D services^{xv}



4.1 Mental disorders

Individuals were screened for the following mental disorders: Schizophrenia, Bipolar Affective Disorder, Depression, Anxiety Disorders (including Generalised Anxiety Disorder, Posttraumatic Stress Disorder, Phobias, Panic Disorder, and Obsessive-Compulsive Disorder), Adjustment Disorder, Eating Disorders, Dementia, Attention Deficit/Hyperactivity Disorder (ADHD), and Personality Disorder. Up to three probable mental disorders could be recorded for each case. Whilst all mental disorders were assessed using standardised screening tools and information from medical records where available, screening methods varied among the different sites. As a consequence, some recorded mental disorders reflect actual diagnoses, whereas others reflect elevated scores on screening questionnaires.

Figure 13 shows the prevalence of probable mental disorders among veterans and non-veterans in L&D services. Anxiety (N = 390, 37%) and Depression (N = 346, 32%) were particularly common amongst veterans compared to non-veterans. Adjustment Disorder and Dementia were also found to be more common among veterans, whereas Schizophrenia, Personality Disorder and ADHD were less common among veterans than non-veterans. In addition, veterans reported more co-occurring mental disorders than non-veterans (see Table 9 in Appendix A3).

Anxiety, Adjustment Disorder, Dementia, Schizophrenia, ADHD and the number of co-occurring mental disorders were all independently associated with veteran status (see Table 9 in Appendix A3 and Figure 14). Veteran status was associated with increased likelihood of Anxiety, Adjustment Disorder, Dementia, and multiple mental disorders.

^{xv} Odds Ratios are adjusted for age, gender, ethnicity, employment status and region. Horizontal bars indicate 95% confidence intervals (CIs). CIs that do not overlap the vertical reference line are statistically significant (indicated by red markers). Odds Ratios above 1 indicate that veterans are more likely than non-veterans to have that particular need. Full analysis details are in Appendix A2.

Conversely, veteran status was associated with decreased likelihood of schizophrenia, and ADHD.

Figure 13: Prevalence of mental health needs among veterans and non-veterans in L&D services

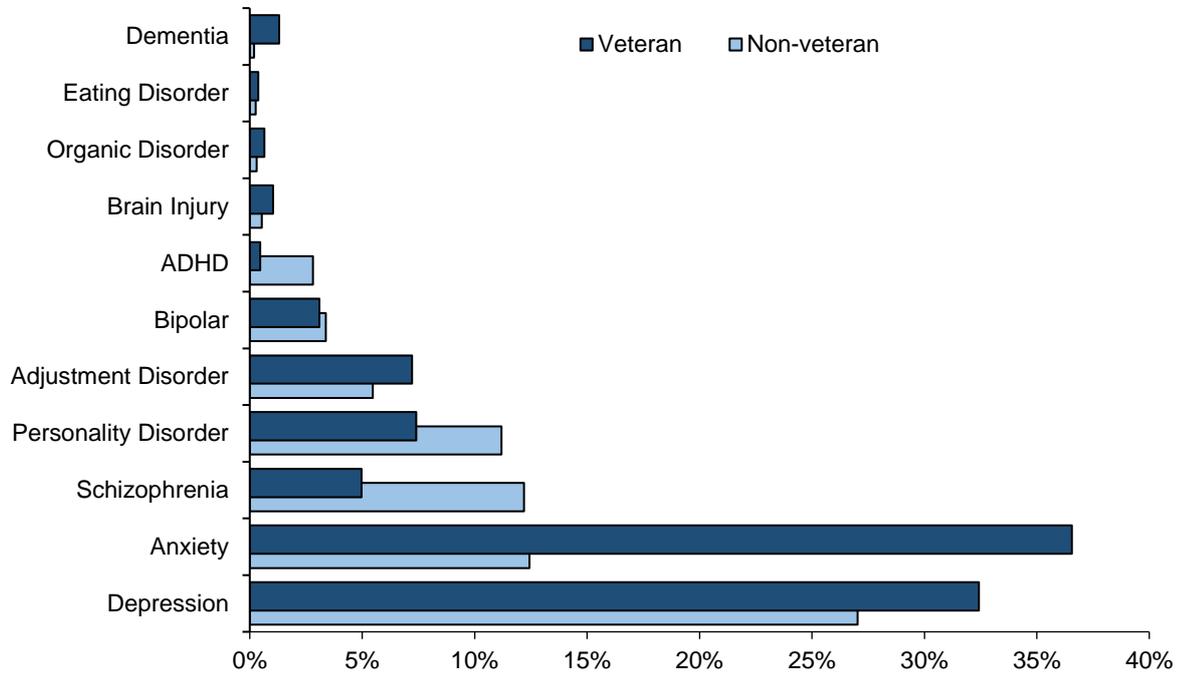
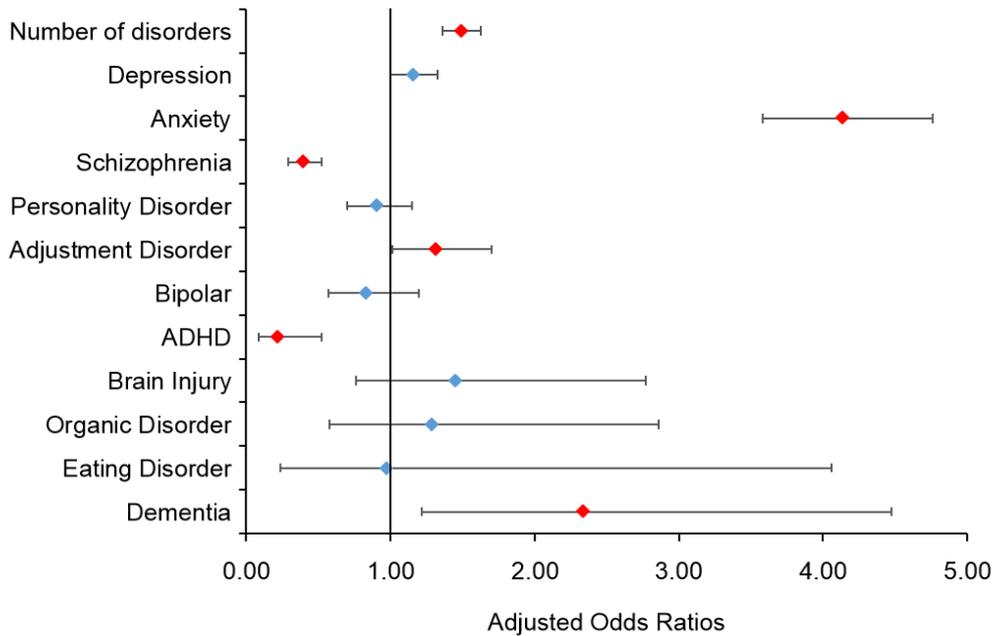


Figure 14: Associations between mental health needs and veteran status^{xvi}



^{xvi} Odds Ratios are adjusted for age, gender, ethnicity, employment status, and region. Horizontal bars indicate 95% confidence intervals (CIs). CIs that do not overlap the vertical centre line are statistically significant (indicated by red markers). Odds Ratios above 1 indicate that veterans are more likely than non-veterans to report that mental disorder. Full analysis details are in Appendix A2.

Chapter 5. High-risk subgroups of veterans

We conducted a number of further analyses to examine whether there were any particular risk factors for different types of offending within the veteran sample (N = 1,067), specifically focusing on offence types that were significantly associated with veteran status in the previous analyses^{xvii}.

5.1 Violence against the person

Socio-demographic factors associated with violence against the person

Of the socio-demographic factors, only employment status was independently associated with offences classified as violence against the person (compared to other non-violent and non-sexual offences; see Table 10 in Appendix A3). Veterans who classed themselves as retired were more likely to have committed violence against the person than other non-violent and non-sexual offences (see Table 10 in Appendix A3).

Mental health factors associated with violence against the person

The associations between the mental health factors and violence against the person offending within the veteran sample are presented in Table 11 (in Appendix A3). A greater proportion of veterans who had committed violence against the person offences reported Anxiety (N = 161, 41%) than veterans who had committed other non-violent and non-sexual offences (N = 165, 35%). Conversely, smaller proportions of veterans who had committed violence against the person offences reported Bipolar Disorder (N = 8, 2%), alcohol misuse (N = 140, 35%), or substance misuse (N = 50, 13%) than veterans who had committed other non-violent and non-sexual offences (Bipolar Disorder, N = 23, 5%; alcohol misuse, N = 208, 44%; substance misuse, N = 114, 24%). On analysis, adjusting for socio-demographic variables, Anxiety disorder was independently positively associated with violence against the person offending. Also, having co-occurring mental health problems was independently associated with violence against the person offending. Bipolar disorder, alcohol misuse and substance misuse were independently negatively associated with violence against the person offending.

5.2 Sex offending

Socio-demographic factors associated with sex offences

Age and employment status were independently associated with sex offending (vs. other non-violent and non-violence-against-the-person offences; see Table 12 in Appendix A3). Specifically, being aged over 60, as well as being employed or on sickness/disability benefit (vs. being unemployed) were associated with sex offending within the veteran sample.

^{xvii} Full details of these analyses are in Appendix A2.

Mental health factors associated with sex offending

The associations between the mental health factors and sex offending within the veteran sample are presented in Table 13 (in Appendix A3). Smaller proportions of veterans who had committed sex offences reported alcohol misuse (N = 14, 17%) or substance misuse (N = 3, 4%) than veterans who had committed other non-sexual and non-violent offences (alcohol misuse, N = 208, 44%; substance misuse, N = 114, 24%). On analysis, alcohol and substance misuse were both independently negatively associated with sex offending.

5.3 Acquisitive offences

Socio-demographic factors associated with acquisitive offences

Employment status and accommodation status were independently associated with acquisitive offending (vs. all other offence types; see Table 14 in Appendix A3). Veterans who were homeless (vs. owning/renting) or unemployed (vs. in employment) were more likely to have committed acquisitive offences.

Mental health factors associated with acquisitive offending

The associations between the mental health factors and acquisitive offending within the veteran sample are presented in Table 15 (in Appendix A3). Larger proportions of veterans who had committed acquisitive offences reported Bipolar Disorder (N = 10, 10%) or substance misuse (N = 42, 41%) than veterans who had committed other non-acquisitive offences (Bipolar Disorder, N = 22, 2%; substance misuse, N = 145, 16%). A smaller proportion of veterans who had committed acquisitive offences reported alcohol misuse (N = 31, 30%) than veterans who had committed other non-acquisitive offences (N = 366, 39%). On analysis, the presence of Bipolar Disorder was independently positively associated with acquisitive offending in veterans^{xviii}. Alcohol- and substance-misuse had differential independent associations with acquisitive offending: alcohol misuse was negatively associated, and substance misuse was positively associated, with acquisitive offending.

5.4 Motoring offences

Socio-demographic factors associated with motoring offences

Only employment status was independently associated with motoring offences within the veteran sample (see Table 16 in Appendix A3). Specifically, being employed (vs. unemployed) was associated with motoring offences.

Mental health factors associated with motoring offences

The associations between the mental health factors and motoring offences within the veteran sample are presented in Table 17 (in Appendix A3). None of the mental health variables was independently associated with motoring offences. A greater proportion

^{xviii} However, we note that there were low numbers in this category, resulting in wide confidence intervals.

of veterans who had committed motoring offences reported alcohol misuse (N = 49, 59%) than veterans who had committed other non-motoring offences (N = 348, 36%). Conversely, a smaller proportion of veterans who had committed motoring offences reported substance misuse (N = 6, 7%) than veterans who had committed other non-motoring offences (N = 181, 19%). Alcohol- and substance-misuse had differential independent associations with motoring offences: alcohol misuse was positively associated, and substance misuse was negatively associated, with motoring offences.

5.5 Summary

Socio-demographic risk factors

Age, employment status and accommodation status were independent risk factors for offending in the veteran sample. Among veterans, being aged over 60 was a risk factor for sexual offending. Being employed was a risk factor for sexual and motoring offending, whereas being unemployed was a risk factor for acquisitive offending. Lastly, being homeless was a risk factor for acquisitive offending.

Mental health and alcohol/substance misuse

Both Anxiety disorder and the presence of co-occurring mental health problems were independent risk factors for violence against the person offending. Bipolar Disorder was an independent risk factor for acquisitive offending. Alcohol misuse was an independent risk factor for motoring offences, and substance misuse was an independent risk factor for acquisitive offences.

Chapter 6. Discussion

A small but significant proportion of military veterans become involved in the criminal justice system (CJS) after leaving service. The needs of veterans in the CJS have generated substantial interest in recent years, driven in part by the Military Covenant, which enshrined in law the agreement that an individual who has served in the military should not experience disadvantage as a result of their service (18). Research to date has identified key welfare and mental health risk factors that increase the risk of offending for military personnel following transition back into civilian life (8,9,19,20). The government review of ex-Armed Forces Personnel in the CJS (7) highlighted the need for better identification of the needs of veterans in the CJS to inform the development of services to help reduce re-offending.

Liaison and Diversion (L&D) services have been designed to identify vulnerable offenders (i.e. those with psychosocial needs) in order to provide them with the support they need (e.g. health and social care), and (where possible) divert them away from custody and into care. We were able to use an administrative database of L&D service-users to identify veterans in the CJS, and to compare their needs with those of non-veteran L&D service-users. We found that veteran and non-veteran offenders in the L&D service differed in a number of key areas:

First, we found that there were key differences in the socio-demographic characteristics of veterans accessing L&D services compared to offenders who had not served: compared to non-veterans, they were more likely to be older and in employment, but with just as unstable accommodation. The average older age of veterans is likely to be, in part, explained by military service, which in effect delays the period during which an individual is at risk of offending in the community (11). Training during military service, which can equip some who would otherwise have had no trade with vocational skills, may explain the higher rates of employment among veterans. It is possible, however, that the comparatively lower unemployment rates among the veterans in the L&D database were skewed by the higher number of veterans of working age who reported being 'retired'. They may have been indicating retirement from the military, thus masking current unemployment status. Military service, however, does little to aid stability of living arrangements with many leaving the military with no stable accommodation (1). This is borne out in our findings of similar levels of homelessness among veterans and non-veterans accessing L&D services.

It is of note that 60% of veterans in the dataset left service over 5 years ago, with a decreasing number having left more recently (24% between 1 and 5 years ago and 4% in the past year). These data suggest that risk of involvement with the CJS increases with time since leaving service, perhaps as the positive impacts of military life, such as having a daily routine and clear focus for one's activity, diminish. However, a considerable proportion of veterans presented to the CJS within 5 years of leaving (24%), indicating an opportunity for early intervention. It also highlights the need for good preparation for leaving service. There is considerable evidence that early service leavers are at greater risk of mental health problems and social exclusion (21–23). However, historically, these individuals were provided with much less support than personnel serving longer than 16 years (24). It was unfortunately not possible to explore length of service as this data was not collected. It would not be surprising if a

large proportion of those who reported having left service more than 5 years ago were early service leavers.

We identified some regional variation in the number of veteran offenders referred to L&D services, with a greater proportion of veterans located in Yorkshire and the North West, and a smaller proportion of veterans in London, the North East and the South East. It is possible that this reflects the areas that were traditionally targeted for military recruitment, or perhaps the differing levels of missing veteran status data among the 29 L&D sites. We also found some differences between the proportions of regional L&D service users who were veterans, and the proportions of the regional population who were veterans. Namely, the North East and South West regions had high proportions of veterans, but relatively lower proportions of veterans were reported to have accessed L&D services in these areas. Conversely, Yorkshire and London had similar proportions of veterans accessing L&D services compared to the proportions of veterans in their respective regional populations. This suggests that the latter regions may have more criminogenic risk factors for veterans and/or that veteran support services in Yorkshire and London are not as effective/accessible as those in the North East and South West.

Second, we found different patterns of offending among veterans in L&D services than non-veterans. Specifically, veterans were more likely to have committed offences that were classified as violence against the person or motoring offences, whereas non-veterans were more likely to have committed acquisitive offences. Our findings echo previous UK data, which found that violence against the person offences were the most prevalent types of offences among veterans in UK prisons (3) and those subject to probation supervision (6). In our study of L&D services, these differences remained even after controlling for differences in socio-demographic factors. This pattern of offending is also supported by recent US research that reported an association between veteran status and violent convictions using data from US state and federal correctional facilities (25).

There is extensive evidence, in both the UK and the US, for a link between military service and future aggressive and/or violent behaviour (9,20,26,27). There are a number of potential explanations for this association. Violence following military service is associated with pre-enlistment antisocial behaviour (28). The military recruits from areas of higher social deprivation and higher crime (19), and thus the violence may simply reflect pre-existing predisposition (28). However, we also know that deployment, in particular combat exposure, is associated with increased risk of future violence among veterans, even after adjusting for pre-military offending behaviour (9,11,20). Furthermore, mental disorders such as PTSD, as well as alcohol misuse, are risk factors for violence and more general offending behaviour among military personnel (9,11,20,27). It is likely that a combination of these factors contributes to the overall increase in violence among veterans.

In addition to the association between veteran status and interpersonal violence, we found that veterans were more likely to commit motoring offences than non-veterans. There is research evidence that road-traffic accidents are prevalent among UK military personnel, and that deployment increases the likelihood of risky driving among UK military personnel (29–31). However, our study is the first direct comparison of motoring offences among veteran with non-veteran offenders. The excess of motoring

offences in veterans may be, in part, a reflection of the general trend towards increased risk taking behaviour observed among military personnel following return from deployment and after leaving service (32).

We found a crude positive association between veteran status and sex offending, showing that veterans were more likely to commit sex offences than non-veterans. However, after adjusting for socio-demographic differences, we found that veteran status was negatively associated with sex offending. Government data has previously shown higher crude rates of sex offending among veterans than non-veterans in UK prisons (3), and among those subject to probation supervision (6), and these differences remained after controlling for differences in age between veterans and non-veterans. Our study suggests that adjusting for differences in additional socio-demographic variables such as gender, ethnicity, and employment status reveals that veteran status is associated with a reduced risk of sex offending. It is important to note that our inability to disaggregate offender by type of sex offence could mask any potential differences between veterans and non-veterans in adult vs child sex offences.

Third, we found that veterans presented with a different pattern of mental health needs from non-veterans. Specifically, veterans were characterised by a higher prevalence of Anxiety disorders, Adjustment disorder, Dementia and alcohol misuse, as well as higher levels of co-occurring mental health problems, compared to non-veterans. There is a wealth of evidence that associates military service (in particular, combat exposure) with Posttraumatic Stress Disorder (PTSD). It was not possible to establish whether this difference in the presence of anxiety between veterans and non-veterans was due to a higher prevalence of PTSD, although it is likely that a proportion of veterans classified as suffering with Anxiety disorder will have been suffering from PTSD symptoms. Higher levels of common mental disorders, such as depression and anxiety, among Armed Forces personnel may be due to (or exacerbated by) the increased likelihood of exposure to stressors within their service roles (33), and also the psychosocial stresses associated with transition out of the military and back into civilian life (34,35). Alcohol misuse in UK Armed Forces personnel is a well-recognised health concern, which is likely to continue into civilian life. Indeed, there is research evidence that rates of alcohol misuse among UK Armed Forces personnel are higher than those among the general population, irrespective of gender (36). Little is known about the prevalence of Dementia in UK Armed Forces veterans. A US study reported a prevalence of 7.3% among those treated at Veterans' Affairs medical centres across the US (37), which was found to be similar to the prevalence of Dementia among similar aged males in the US population. There is some evidence that the presence of PTSD may increase the risk of Dementia in older US veterans (38).

Non-veterans, on the other hand, were characterised by a higher prevalence of Schizophrenia, Personality Disorder, ADHD and substance misuse than veterans. Military selection processes are likely to exclude individuals with serious mental illnesses, and the presence of these conditions would prevent someone from enlisting. This, along with the implementation of routine drug testing in the Armed Forces may account for these differences.

In our further analyses, we examined whether there were specific risk factors for different types of offending within the veteran population. Specifically, we examined the associations between socio-demographic and mental health factors and violence

against the person, sexual, acquisitive, and motoring offending. First, we found that the presence of probable Anxiety disorder was a risk factor for violence against the person offences in veterans compared to other types of non-violent offending. There is a well-established link between anxiety and violence/aggression (39,40), which may be explained by deficits in emotion regulation (41,42). Given that the veterans in the sample had a high prevalence of anxiety-related mental health needs, it is possible that the offending behaviour stems from higher levels of emotion dysregulation in veterans with anxiety. Also, irritability, aggression and reckless behaviour are core symptoms of PTSD (which is classified as an Anxiety disorder by L&D services), which itself is linked with violent offending among military personnel (11,27). We did not find that alcohol misuse was an independent risk factor for interpersonal violent offending. However, we were not able to compare violent offending with non-offending due to the lack of comparison group who had not offended. Rather, we were comparing risk factors for violent offending compared with other types of non-violent offending. As a result, this finding tells us that veterans who misuse alcohol were no more likely to commit an offence of violence against the person than an acquisitive, or other non-violent offence. Of note, we found that having co-occurring mental health problems, (i.e., increased complexity) was associated with increased risk of violence against the person.

Second, sex offending in veterans was associated with older age and being in employment. In terms of age, general offending tends to reduce as age increases. However, sex offending appears to have differential associations with age depending on the type of sex offence. For example, offenders targeting adult women tended to be younger than offenders targeting children (43). It was not possible to establish the precise nature of the sex offence for each case. This, coupled with the relatively low number of veteran sex offenders in the sample, limited any more in-depth analyses and thus interpretation is limited.

Third, substance- and alcohol-misuse were risk factors for acquisitive and motoring offences among veterans (compared to all other types of offences), respectively. There is a well-established link between drug misuse and crime in general, and is consistent across different types of drugs and different types of offending (44). Although the specific link between substance misuse and acquisitive offending has not been studied in veteran populations, our finding is unsurprising. Alcohol misuse was a risk factor for motoring offences in veterans, after controlling for socio-demographic variables. This finding, again, is unsurprising given the link between alcohol consumption and risky driving behaviours (45,46).

6.1 Strengths and limitations

A major strength of our study was the large sample size, especially of the non-veteran group, which was likely to be representative of L&D service-users. This also allowed us to take into account the effects of potentially confounding socio-demographic factors, which would not have been possible using a smaller sample.

Second, we were able to directly compare veterans and non-veterans that were members of the same population – i.e. vulnerable individuals in the CJS. This is a major advantage, as any differences between them are unlikely to be biased due to different sampling methods.

Third, given that individuals are referred to L&D services from a range of settings, our data include individuals who have committed (or were suspected of having committed) a range of offences: from summary offences to murder and manslaughter. This increases the generalisability of our findings.

Fourth, our data included information on a wide range of vulnerabilities that was gathered by trained practitioners: it was not simply a collection of administrative data.

Despite these strengths, there are a number of limitations. First, there was a considerable amount of missing data. For example, 20% of the cases in the database had no information on whether or not the individual had ever served in the Armed Forces. The question may not always be asked, and this may be due to a lack of understanding of the terminology, or simply that it is easily missed. As a result, we may have missed out on approximately 250 veterans (assuming that 2% of those with missing data were veterans), which would have significantly increased the power of our statistical analyses. However, this level of missingness is not unusual in studies and non-response rates are often more than 15% (47).

Second, although the screening was undertaken by trained mental health practitioners, the screening tools did vary among the different sites. Thus, there may be differences in the presence or absence of a vulnerability depending on which tool was used. This may have an impact on reliability and validity of the data relating to vulnerabilities. However there was no difference in the use of screening tools between veterans and non-veterans and therefore this will not have impacted on our comparative analyses.

Third, a significant proportion of the data were established via self-report. This impacts upon the reliability of the information, given the propensity for malingering and deceit among forensic populations (48). However, this is a commonly used methodology in this field. Future embodiments of the L&D service database would benefit from the inclusion of corroborating evidence from other sources, although this will have practicality implications.

Fourth, some of the information on the database was pre-categorised on data entry. For example, all anxiety disorders, and some offences (e.g. sex offences), were grouped together. This meant that we were unable to identify, for example, which cases reported PTSD versus Generalised Anxiety Disorder, or specific types of sex offending.

6.2 Implications

Overall, our study indicates that among offenders in the CJS who have been identified as having social or mental health needs, veterans have a different profile of welfare, mental health, alcohol- and substance-misuse, and general health needs than general population offenders. We have also found that the reasons for which veterans come into contact with the CJS differ from general population offenders, with much higher rates of interpersonal violence and motoring offences and less acquisitive offending. These differences may in part be shaped by their military service. We have also identified key factors associated with different types of offending among veterans, which can be targeted in offence reduction programmes.

Such findings support the identification of military personnel as early in their CJS journey as possible, in order that their specific needs can be met by professionals with an understanding of military culture and the needs of the veteran population. It is important that appropriate intervention takes place early to improve health and social outcomes and reduce reoffending.

Our study also suggests that more efforts could be made upstream of the CJS, for example during transition out of the military, when some of the risk factors for offending behaviour may be targeted. Interventions to improve employment, housing, mental health and alcohol and substance misuse outcomes could reduce the rates of offending following transition.

6.3 Recommendations

1. **Workforce training:** In the light of our finding that veterans in the CJS have different needs from general population offenders, priority must be placed on ensuring that staff members working in the CJS are able to identify veterans, are aware of their needs, and have knowledge of local and regional services available to veterans. This can be achieved through widespread delivery of a training programme in veteran-sensitive practice to the CJS workforce.
2. **Service development:** Having identified the different clinical needs of the veteran population, it is important that there are the services to meet those needs. Prison and probation services need access to veteran support services providing mental health, substance misuse and welfare support. Some prisons already have Veteran Inreach services, which are co-ordinated by community veteran services, are delivered via an inreach model using veteran in custody support nurses, and ensure integration of mental health, welfare and substance misuse support. In other prisons such support is provided by a variety of organisations but with no central co-ordination. Provision of such services is, however, a postcode lottery. NHS England is currently planning to introduce a “Well Being” model of mental health care into prisons in England. This will require significant upskilling of workforce in the delivery of psychological therapies. This model is better suited to the needs of veterans in the CJS whose higher levels of common mental disorder, especially anxiety, need to be acknowledged and interventions offered. They need access to psychological therapies as part of an integrated package of care with support for their welfare and substance misuse needs also. This Well Being approach to mental health should be rolled out in the rest of the CJS, including probation. Alongside this, we recommend that within every mental health team veteran leads are identified who have experience of working with veterans, an understanding of their presentations and their treatment needs, and the services to which they can be referred.
3. **Offence reduction work:** This study provides further evidence of the higher rates of violent offending and other risk taking behaviours such as motoring offending among veterans compared to general population offenders. It also provides further evidence for the key sociodemographic, mental health (broadly anxiety disorders)

and substance misuse targets for offence reduction work in this population. Anxiety disorders (which in this study include PTSD) are often treatable with psychological therapy with or without medication. In a population with high baseline levels of arousal and anger, emotion regulation work is crucial in offence reduction work, especially violence reduction. Research is needed to better understand what offence reduction (especially violence reduction) methods work.

Offence reduction work must also tackle the welfare and alcohol and substance misuse issues that this study and other research has shown to be associated with offending. The integration of mental health support with substance misuse and welfare support is important.

The CJS provides an opportunity to engage with this hard to reach population who have been shown to be reluctant to seek help. Unfortunately, as veterans often present with problems with aggression and alcohol misuse, their mental health and treatment needs are missed and they do not get referred to the appropriate services. This further emphasises the need for training of staff to recognise veteran presentations, and the need for improved access to psychological therapies and joint working between mental health services and substance misuse services.

4. Collaborative working: Greater cross working is needed between NHS, state and third sector organisations to support veterans in the CJS. This study has highlighted the complex mix of welfare, mental health and offender/risk management work that veterans in the CJS require. There are many organisations providing support to veterans who enter the CJS, but often these efforts are not joined up. The Gate to Gate work undertaken by NHS England has been key in delineating the gaps in support available for veterans from the point of leaving service to entering the CJS, to leaving the prison gate and entering the community (1). The lack of communication between mental health, welfare and offender based services has been exposed. This study has highlighted the complex vulnerabilities in this population that require joined up working and services which do not work in silos.
5. More research into sex offending by ex-Armed Forces personnel: A number of data sources in the UK and the US have found higher rates of sex offending among veterans than among general population offenders. Our study has shown that the higher rate of sex offending found among veterans in the L&D services compared to non-veteran offenders was explained by differences in age and employment status between the two groups. However, our sample was not representative of the wider CJS population and we were unable to disaggregate sex offending by type of offence or age of victim. Further research is needed to explore sex offending in this population in more depth.
6. Improved data recording: This piece of work has also highlighted some deficits in the current L&D data collection procedures, for which we have a number of recommendations (see Appendix A5). Better recording of veteran status is needed by all services in the CJS in order that they can be identified, assessed and

appropriate interventions offered. We also identified regional variation in the recording of veteran status and the quality of clinical data. NHS England need to ensure standards of quality in minimum data entry are met.

7. **Assessment of PTSD:** Specific assessment of trauma sequelae and PTSD is needed in the CJS. Awareness of the role of trauma in offending behaviour and the need for Trauma Informed Care (TIC) has been slow to gain traction in UK. That the Liaison and Diversion services did not consider PTSD as a separate diagnosis in their database is symptomatic of this. More training in TIC is needed more broadly for all offenders and in particular for veterans in the CJS, many of whom may have experienced operational trauma, but also pre-military and post-military trauma as a result of their early lives and the paths they take after transition.

Conclusion

This study has highlighted the utility of using secondary routinely collected data from services engaged with offenders early in their CJS journey in order to identify vulnerable populations and their need for specific support. We have identified that those who have served in the Armed Forces end up in the CJS and are identified by L&D services as having a vulnerability, have social, mental health, physical health, substance misuse and offending needs that differ from general population offenders. In the light of these differences, we highlight the need for workforce training across the CJS to improve the identification of veterans within the CJS, and to improve access to veteran-specific interventions and treatments (e.g. through integrated mental health, substance-misuse and welfare services) in order to reduce offending in this group. Our results also highlight the importance of improving the assessment and treatment of trauma-related mental health problems (which would not only benefit veterans, but also the general offender population).

Chapter 7. References

1. Lord Ashcroft. *The Veterans Transition Review*. [Online] 2014. Available from: <http://www.veteranstransition.co.uk/vtrreport.pdf>
2. MacManus D, Jones N, Wessely S, Fear NT, Jones E, Greenberg N. The mental health of the UK Armed Forces in the 21st century: resilience in the face of adversity. *Journal of the Royal Army Medical Corps*. 2014; jramc – 2013. Available from: <http://jramc.bmj.com/content/early/2014/01/23/jramc-2013-000213.short>
3. DASA. *Estimating the proportion of prisoners in England and Wales who are ex-Armed Forces – further analysis*. [Online] 2010. Available from: <http://www.ohrn.nhs.uk/resource/policy/ProportionofPrisonVets.pdf>
4. HMIP. *People in prison: Ex-service personnel*. [Online] 2014. Available from: <https://www.justiceinspectors.gov.uk/hmiprisons/wp-content/uploads/sites/4/2014/03/Ex-Service-personnel-findings-paper-2014.pdf>
5. Treadwell J. COUNTERBLAST: More than Casualties of War?: Ex-military Personnel in the Criminal Justice System. *The Howard Journal of Criminal Justice*. 2010;49(1): 73–77. Available from: doi:10.1111/j.1468-2311.2009.00598.x
6. DASA. *Estimating the proportion of offenders supervised by Probation Trusts in England and Wales who are ex-Armed Forces*. [Online] 2011. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/280539/16-march-2011.pdf
7. Phillips S. *Former members of the Armed Forces and the Criminal Justice System. A review on behalf of the Secretary of State for Justice*. [Online] 2014 [Accessed: 11th July 2017]. Available from: <http://www.rfea.org.uk/wp-content/uploads/2015/08/Former-Members-of-the-Armed-Services-and-the-Criminal-Justice-System-A-Review-on-Behalf-of-the-Secretary-of-State-for-Justice.pdf>
8. MacManus D, Wood N. The ex-armed forces offender and the UK criminal justice system. In: Hughes JH (ed.) *Military Veteran Psychological Health and Social Care: Contemporary Issues*. Oxford: Routledge; 2017. p. 62–80.
9. MacManus D, Dean K, Al Bakir M, Iversen AC, Hull L, Fahy T, et al. Violent behaviour in UK military personnel returning home after deployment. *Psychological Medicine*. 2012;42(08): 1663–1673. Available from: doi:10.1017/S0033291711002327
10. Simonoff E, Elander J, Holmshaw J, Pickles A, Murray R, Rutter M, et al. Predictors of antisocial personality : Continuities from childhood to adult life Predictors of antisocial personality Continuities from childhood to adult life. 2004; 118–127. Available from: doi:10.1192/bjp.184.2.118
11. MacManus D, Dean K, Jones M, Rona RJ, Greenberg N, Hull L, et al. Violent offending by UK military personnel deployed to Iraq and Afghanistan: a data linkage cohort study. *The Lancet*. 2013;381(9870): 907–917. Available from: <http://www.sciencedirect.com/science/article/pii/S0140673613603542>
12. Elbogen EB, Johnson SC, Newton VM, Straits-Troster K, Vasterling JJ, Wagner HR, et al. Criminal justice involvement, trauma, and negative affect in Iraq and Afghanistan war era veterans. *Journal of Consulting and Clinical Psychology*. 2012;80(6): 1097–1102. Available from: doi:10.1037/a0029967
13. MacManus D, Burdett H, Jones M, Hull L, Wessely S, Fear NT. Risk and protective factors for offending among UK military personnel after leaving service.

14. Bradley K. *The Bradley Report: Lord Bradley's review of people with mental health problems or learning disabilities in the criminal justice system*. [Online] 2009. Available from: <https://www.rcpsych.ac.uk/pdf/Bradleyreport.pdf>
15. NHS England. *Pathways development*. [Online] Liaison and Diversion manager and practitioner resources. NHS England; 2015. Available from: <https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2015/10/ohc-paper-05.pdf>
16. NHS England Liaison and Diversion Programme. *Liaison and Diversion Operating Model 2013/14*. [Online] Author; 2014. Available from: <https://www.england.nhs.uk/wp-content/uploads/2014/04/ld-op-mod-1314.pdf>
17. Ministry of Defence. Annual Population Survey: UK Armed Forces Veterans residing in Great Britain, 2015. 2015;(October): 1–48. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/559369/20161013_APS_Official_Statistic_final.pdf
18. The Ministry of Defence. the Armed Forces Covenant. *The Ministry of Defence*. 2015; 1–12.
19. MacManus D, Wessely S. Why do some ex-armed forces personnel end up in prison? *BMJ*. 2011;342(jun23 1): d3898–d3898. Available from: doi:10.1136/bmj.d3898
20. Elbogen EB, Johnson SC, Newton VM, Fuller S, Wagner HR, Beckham JC. Self-report and Longitudinal Predictors of Violence in Iraq and Afghanistan War Era Veterans: *The Journal of Nervous and Mental Disease*. 2013;201(10): 872–876. Available from: doi:10.1097/NMD.0b013e3182a6e76b
21. Woodhead C, Rona RJ, Iversen A, MacManus D, Hotopf M, Dean K, et al. Mental health and health service use among post-national service veterans: results from the 2007 Adult Psychiatric Morbidity Survey of England. *Psychological Medicine*. 2011;41(02): 363–372. Available from: doi:10.1017/S0033291710000759
22. Buckman JEJ, Forbes HJ, Clayton T, Jones M, Jones N, Greenberg N, et al. Early Service leavers: A study of the factors associated with premature separation from the UK Armed Forces and the mental health of those that leave early. *European Journal of Public Health*. 2013;23(3): 410–415. Available from: doi:10.1093/eurpub/cks042
23. Woodhead C, Rona RJ, Iversen AC, MacManus D, Hotopf M, Dean K, et al. Health of national service veterans: an analysis of a community-based sample using data from the 2007 Adult Psychiatric Morbidity Survey of England. *Social Psychiatry and Psychiatric Epidemiology*. 2011;46(7): 559–566. Available from: doi:10.1007/s00127-010-0232-0
24. Fossey M. Across the wire. *Veterans, mental health and vulnerability*. Centre for Mental Health: London. 2010; Available from: http://insight.oxfordshire.gov.uk/cms/system/files/documents/Across_the_wire-Veterans_Mental_Health_0.pdf
25. Van Dyke K, Orrick EA. An examination of the influence of veteran status on offense type among an inmate sample. *American Journal of Criminal Justice*. 2017;42(2): 426–442. Available from: doi:10.1007/s12103-016-9373-3
26. MacManus D, Rona R, Dickson H, Somaini G, Fear N, Wessely S. Aggressive and Violent Behavior Among Military Personnel Deployed to Iraq and Afghanistan: Prevalence and Link With Deployment and Combat Exposure. *Epidemiologic Reviews*. 2015;37(1): 196–212. Available from: doi:10.1093/epirev/mxu006
27. Elbogen EB, Johnson SC, Wagner HR, Sullivan C, Taft CT, Beckham JC. Violent behaviour and post-traumatic stress disorder in US Iraq and Afghanistan veterans. *The British Journal of Psychiatry*. 2014;204(5): 368–375. Available from: doi:10.1192/bjp.bp.113.134627

28. MacManus D, Dean K, Iversen AC, Hull L, Jones N, Fahy T, et al. Impact of pre-enlistment antisocial behaviour on behavioural outcomes among UK military personnel. *Social Psychiatry and Psychiatric Epidemiology*. 2012;47(8): 1353–1358. Available from: doi:10.1007/s00127-011-0443-z
29. Sheriff RJS, Forbes HJ, Wessely SC, Greenberg N, Jones N, Fertout M, et al. Risky driving among UK regular armed forces personnel: changes over time. *BMJ open*. 2015;5(9): e008434. Available from: <http://bmjopen.bmj.com/content/5/9/e008434.abstract>
30. Fear NT, Iversen AC, Chatterjee A, Jones M, Greenberg N, Hull L, et al. Risky Driving Among Regular Armed Forces Personnel from the United Kingdom. *American Journal of Preventive Medicine*. 2008;35(3): 230–236. Available from: doi:10.1016/j.amepre.2008.05.027
31. Lincoln AE, Hooper TI, Kang HK, DeBaakey SF, Cowan DN, Gackstetter GD. Motor vehicle fatalities among Gulf War era veterans: Characteristics, mechanisms, and circumstances. *Traffic Injury Prevention*. 2006;7(1): 31–37. Available from: doi:10.1080/15389580500412028
32. Killgore WDS, Cotting DI, Thomas JL, Cox AL, McGurk D, Vo AH, et al. Post-combat invincibility: Violent combat experiences are associated with increased risk-taking propensity following deployment. *Journal of Psychiatric Research*. 2008;42(13): 1112–1121. Available from: doi:10.1016/j.jpsychires.2008.01.001
33. Goodwin L, Wessely S, Hotopf M, Jones M, Greenberg N, Rona RJ, et al. Are common mental disorders more prevalent in the UK serving military compared to the general working population? *Psychological Medicine*. 2015;45(09): 1881–1891. Available from: doi:10.1017/S0033291714002980
34. Hatch SL, Harvey SB, Dandeker C, Burdett H, Greenberg N, Fear NT, et al. Life in and after the Armed Forces: Social networks and mental health in the UK military. *Sociology of Health and Illness*. 2013;35(7): 1045–1064. Available from: doi:10.1111/1467-9566.12022
35. Kapur N, While D, Blatchley N, Bray I, Harrison K. Suicide after Leaving the UK Armed Forces —A Cohort Study. Hotopf M (ed.) *PLoS Medicine*. 2009;6(3): e1000026. Available from: doi:10.1371/journal.pmed.1000026
36. Fear NT, Iversen A, Meltzer H, Workman L, Hull L, Greenberg N, et al. Patterns of drinking in the UK Armed Forces. *Addiction*. 2007;102(11): 1749–1759. Available from: doi:10.1111/j.1360-0443.2007.01978.x
37. Krishnan LL, Petersen NJ, Snow AL, Cully JA, Schulz PE, Graham DP, et al. Prevalence of dementia among veterans affairs medical care system users. *Dementia and Geriatric Cognitive Disorders*. 2005;20(4): 245–253. Available from: doi:10.1159/000087345
38. Yaffe K, Vittinghoff E, Lindquist KA, Barnes D, Covinsky KE, Neylan T, et al. Posttraumatic Stress Disorder and Risk of Dementia Among US Veterans. *Archives of General Psychiatry*. 2010;67(6): 608–613. Available from: doi:10.1001/archgenpsychiatry.2010.61.ABSTRACT
39. Neumann ID, Veenema AH, Beiderbeck DI. Aggression and anxiety: social context and neurobiological links. *Front Behav Neurosci*. 2010;4: 12. Available from: doi:10.3389/fnbeh.2010.00012
40. Hodgins S, De Brito S, Chhabra P, Côté G. Anxiety disorders among offenders with antisocial personality disorders: a distinct subtype? *Canadian Journal of Psychiatry*. 2010;55(12): 784–791.
41. Robertson T, Daffern M, Bucks RS. Emotion regulation and aggression. *Aggression and Violent Behavior*. Elsevier Ltd; 2012;17(1): 72–82. Available from: doi:10.1016/j.avb.2011.09.006
42. Miles SR, Sharp C, Tharp AT, Stanford MS, Stanley M, Thompson KE, et al. Emotion dysregulation as an underlying mechanism of impulsive aggression: Reviewing empirical data to inform treatments for veterans who perpetrate violence. *Aggression and Violent Behavior*.

- 2017;34: 147–153. Available from: doi:10.1016/j.avb.2017.01.017
43. Hanson RK. Recidivism and age: Follow-up data from 4,673 sexual offenders. *Journal of Interpersonal Violence*. 2002;17(10): 1046–1062. Available from: doi:10.1177/088626002236659
 44. Bennett T, Holloway K, Farrington D. The statistical association between drug misuse and crime: A meta-analysis. *Aggression and Violent Behavior*. 2008;13(2): 107–118. Available from: doi:10.1016/j.avb.2008.02.001
 45. Van Dyke NA, Fillmore MT. Laboratory analysis of risky driving at 0.05% and 0.08% blood alcohol concentration. *Drug and Alcohol Dependence*. Elsevier; 2017;175(October 2016): 127–132. Available from: doi:10.1016/j.drugalcdep.2017.02.005
 46. Fillmore MT, Blackburn JS, Harrison ELR. Acute disinhibiting effects of alcohol as a factor in risky driving behavior. *Drug and Alcohol Dependence*. 2008;95(1-2): 97–106. Available from: doi:10.1016/j.drugalcdep.2007.12.018
 47. Peugh JL, Enders CK. Missing Data in Educational Research: A Review of Reporting Practices and Suggestions for Improvement. *Review of Educational Research*. 2004;74(4): 525–556. Available from: doi:10.3102/00346543074004525
 48. Rogers R, Bender SD. Evaluation of Malingering and Deception. *Handbook of Psychology*. Hoboken, NJ, USA: John Wiley & Sons, Inc.; 2003. p. 109–129. Available from: doi:10.1002/0471264385.wei1107
 49. Babor T, Higgins-Biddle JC, Saunders JB, Monteiro MG. The Alcohol Use Disorders Identification Test: Guidelines for use in primary care. *Geneva: World Health Organization*. 2001; 1–40. Available from: doi:10.1177/0269881110393051
 50. Mueser KT, Drake RE, Clark RE, McHugo GJ, Mercer-McFadden C, Ackerson TH. *Evaluating substance abuse in persons with severe mental illness*. Cambridge, MA: Human Services Research Institute; 1995.
 51. McKenzie K, Paxton D. Promoting access to services: the development of a new screening tool. *Learning Disability Practice*. 2006;9(6): 17–21. Available from: doi:10.7748/ldp2006.07.9.6.17.c7451
 52. Hayes SC. Early intervention or early incarceration? Using a screening test for intellectual disability in the criminal justice system. *Journal of Applied Research in Intellectual Disabilities*. 2002;15(2): 120–128. Available from: doi:10.1046/j.1468-3148.2002.00113.x
 53. Baron-Cohen S, Wheelwright S, Skinner R, Martin J, Clubley E. The autism-spectrum quotient (AQ): evidence from Asperger syndrome/high-functioning autism, males and females, scientists and mathematicians. *Journal of Autism and Developmental Disorders*. 2001;31(1): 5–17.

Appendix A1. Variables

Veteran status

A veteran was classified as anyone who had served for at least one day in the UK Armed Forces (including as a reserve). Individuals were asked whether they had ever served in the UK Armed Forces, and the length of time since they left/were discharged (currently serving, discharged within the last 12 months, 1-5 years ago, or more than 5 years ago). For the purposes of this report, we recoded veteran status as a binary variable due to the insufficient numbers of cases reporting to be currently serving or having served in the last year.

Gender

This was established via self-report (and recorded as “prefer not to say” if this information was not provided to the L&D case worker). Individuals whose gender was categorised as “intersex” or “other” were excluded from the analyses due to insufficient numbers (N = 30 non-veterans only).

Age

This was originally recorded in 5-year increments from “20 & under” to “over 80”. For the purposes of the statistical analyses, we recoded age as: 30 and under, 31 to 45, 46 to 60 and over 60.

Ethnicity

This was established via self-report (and recorded as “not stated” if the information was not provided to the L&D case worker). For the purposes of the statistical analyses, ethnicity was recoded as white or black and minority ethnic (BME; see Table 1).

Employment status

This was established via self-report. For the purposes of the statistical analyses, employment status was categorised as: employed; unemployed; retired; sickness/disability; other (see Table 2).

Accommodation

This was established via self-report. For the purposes of the statistical analyses, employment status was categorised as: homeless; temporary; own/rent; parent/family; other (see Table 3).

Offence types

All of the individuals referred to the L&D service had been charged with a criminal offence. For each case, the L&D service practitioner recorded the most serious offence that the individual was charged with, or suspected of having committed (taken

from the police records). Offences were classified as: violence against the person; sex offence; acquisitive offence; violent offence; drug offence; public order offence; breach offence; motoring offence; other offence (see Table 4). For the purposes of statistical analyses, offence type was recoded into eight separate binary variables, each indicating the presence or absence of each offence type (as in Van Dyke & Orrick (25)). We note that because all of the individuals that were referred to the L&D service had been charged with an offence, the absence of one offence type indicates that they were charged with a different offence type (not the absence of an offence)

Needs

Individuals were screened for Schizophrenia, Bipolar Affective Disorder, Depression, Anxiety Disorders (including Generalised Anxiety, Posttraumatic Stress Disorder, phobias, Panic Disorder, and Obsessive-Compulsive Disorder), Adjustment Disorder, eating disorders, Dementia, Attention Deficit/Hyperactivity Disorder (ADHD), and Personality Disorder. Up to three mental disorders could be recorded for each case. Whilst all mental disorders were assessed using standardised instruments/screening tools and information from medical records where available, screening methods varied among the different sites. As a consequence, some mental health needs reflect actual diagnoses, whereas others reflect elevated scores on screening questionnaires.

Presence of alcohol misuse was defined as the consumption of over 14 units per week for women, and over 21 units per week for men (49). Presence of substance misuse was reflected by evidence of social, occupational, psychological, or physical problems related to use of drugs (50).

The presence of learning difficulties (where suspected) was established using the standard cut-off scores on the Learning Disability Screening Questionnaire (51) or the Hayes Ability Screening Index (52). Presence of social & communication difficulties (where suspected) was established using the standard cut-off score on the Autism Spectrum Quotient (53). The presence of physical health problems was established via self-report.

Table 1: Categorisation of ethnicity variable

Ethnicity	Non-veterans N (%)	Veterans N (%)	Analysis Category
White British	38564 (79)	928 (87)	White
White Irish	546 (1)	8 (1)	White
Any Other White Background	1871 (4)	38 (4)	White
Mixed White And Black Caribbean	664 (1)	8 (1)	BME
Mixed White And Black African	212 (0)	6 (1)	BME
Mixed White And Asian	149 (0)	(0)	BME
Any Other Mixed Background	305 (1)	4 (0)	BME
Asian Or Asian British Indian	771 (2)	3 (0)	BME
Asian Or Asian British Pakistani	374 (1)	1 (0)	BME
Asian Or Asian British Bangladeshi	258 (1)	(0)	BME
Any Other Asian Background	627 (1)	6 (1)	BME
Black Or Black British Caribbean	1122 (2)	10 (1)	BME
Black Or Black British African	1106 (2)	7 (1)	BME
Any Other Black Background	530 (1)	3 (0)	BME
Chinese	38 (0)	1 (0)	BME
Any Other Ethnic Group	469 (1)	928 (87)	BME

Table 2: Categorisation of employment status variable

Employment Status	Non-veterans N (%)	Veterans N (%)	Analysis Category
Full-time/Part-time	7193 (15)	274 (26)	Employed
Self-employed	1046 (2)	63 (6)	Employed
Housewife/husband/carers	380 (1)	5 (0)	Other
Student/training	839 (2)	7 (1)	Other
Other	440 (1)	117 (11)	Other
Retired	601 (1)	82 (8)	Retired
Sickness/disability	5497 (11)	453 (42)	Sickness/disability
Unemployed	29104 (60)	12 (1)	Unemployed

Table 3: Categorisation of accommodation status variable

Accommodation status	Non-veterans N (%)	Veterans N (%)	Analysis Category
Homeless	4481 (9)	98 (9)	Homeless
B&B	212 (0)	7 (1)	Temporary
Squatting	1500 (3)	25 (2)	Temporary
Hostel (CJS)	438 (1)	7 (1)	Temporary
Hostel (Non-CJS)	2084 (4)	34 (3)	Temporary
Parent/Family	7445 (15)	123 (12)	Parent/Family
Rented	24428 (50)	509 (48)	Own/Rent
Owner	2175 (4)	129 (12)	Own/Rent
Hospital	134 (0)	1 (0)	Other
Other	1648 (3)	37 (3)	Other

Table 4: Categorisation of offence type variable

Main offence at charge	Non-veterans N (%)	Veterans N (%)	Analysis Category
Fraud and forgery	397 (1)	8 (1)	Acquisitive
Theft	5532 (11)	80 (7)	Acquisitive
Burglary	1864 (4)	15 (1)	Acquisitive
Breach of Court Order	3357 (7)	70 (7)	Breach
Drug Offences	1803 (4)	31 (3)	Drug offence
Vehicle Crime	421 (1)	10 (1)	Motoring
Motoring Offences	1715 (4)	73 (7)	Motoring
Criminal Damage	3362 (7)	58 (5)	Non-interpersonal violence
Arson	385 (1)	7 (1)	Non-interpersonal violence
Possession of an offensive weapon	1094 (2)	15 (1)	Non-interpersonal violence
Possession of a firearm	134 (0)	8 (1)	Non-interpersonal violence
Public Order	5142 (11)	108 (10)	Public order
Sexual Offence	2512 (5)	82 (8)	Sex offence
Harassment	1796 (4)	60 (6)	Violence against the person
Robbery	554 (1)	7 (1)	Violence against the person
Violence against the person	12853 (26)	325 (30)	Violence against the person
Murder - Manslaughter	207 (0)	4 (0)	Violence against the person
Other	4509 (9)	80 (7)	Other

Appendix A2. Statistical Analyses

A2.1 Preliminary/descriptive analyses

All analyses were conducted using Stata 14. All categorical data were summarised using frequencies and proportions. In order to describe the associations between the multi-category socio-demographic factors and veteran status in Chapter 2 we calculated Chi-squared tests of association, along with Pearson residuals for each cell. Significant differences between observed and expected cell counts were indicated by Pearson residuals of greater than 2.0 or less than -2.0.

A2.2 Associations with veteran status

We conducted these analyses using a series of univariate and multivariate logistic regression models in Stata 14. First, we examined the univariate associations between each socio-demographic variable and veteran status using separate logistic regression models (see Table 6 in Appendix A3). These socio-demographic variables were subsequently retained in a multivariate logistic regression model predicting veteran status (see Table 6 in Appendix A3). Any socio-demographic variable that was independently associated with veteran status was used as a covariate in the subsequent multivariate analyses. Second, we examined the univariate associations between veteran status and each of the offence type (see Table 7 in Appendix A3), health needs (see Table 8 in Appendix A3) and mental health needs variables (see Table 9 in Appendix A3) using separate logistic regression models. Each variable was then retained in separate multivariate logistic regression models predicting veteran status, whilst controlling for the socio-demographic covariates.

A2.3 Within-veteran analyses

For the within-veteran analyses, we only examined the veterans in the sample (N = 1,067), and we focused on offences that were independently associated with veteran status in the preceding analyses. These were: violence against the person, sex offences, acquisitive offences and motoring offences.

The analyses followed a similar structure to those in the previous section, and we repeated the analyses for each of the offence outcomes (see Table 5 below). First, we examined the univariate associations between each of the socio-demographic^{xix} variables and the offence type. We then calculated a multivariate logistic regression to establish which socio-demographic variables were to be retained as covariates in the following analysis (see Table 10, Table 12, Table 14 and Table 16 in Appendix A3). Second, we examined the univariate associations between each of the mental health and alcohol/substance use variables and the offence type outcome. Each variable was then retained in separate multivariate logistic regression models predicting offence

^{xix} We excluded region from these analyses in order to increase power.

type, whilst controlling for the socio-demographic covariates (see Table 11, Table 13, Table 15 and Table 17 in Appendix A3).

Table 5: Outcome variables used in the high-risk subgroup analyses

Outcome	N (%)	Reference category	N (%)
Violence against the person	396 (45)	Acquisitive, breach, drug, motoring, public order and other offence	475 (55)
Sex Offence	82 (15)	Acquisitive, breach, drug, motoring, public order and other offence	475 (85)
Acquisitive offence	103 (10)	All other offence categories	938 (90)
Motoring offence	83 (8)	All other offence categories	958 (92)

Appendix A3. Tables

Table 6: Association of socio-demographic factors with veteran status

	Non-veterans (N=48,578)	Veterans (N=1,067)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%*)	N (%*)				
Gender						
Female	11096 (22.84)	33 (3.09)	1	-	1	-
Male	37112 (76.40)	1028 (96.34)	9.31 [6.58-13.18]	<0.01	10.61 [7.27-15.49]	<0.01
Age						
30 & Under	21813 (44.90)	270 (25.30)	1	-	1	-
31-45	17960 (36.97)	435 (40.77)	1.96 [1.68-2.28]	<0.01	2.07 [1.75-2.45]	<0.01
46-60	7545 (15.53)	268 (25.12)	2.87 [2.42-3.40]	<0.01	2.87 [2.36-3.48]	<0.01
Over 60	1050 (2.16)	89 (8.34)	6.85 [5.35-8.77]	<0.01	2.92 [1.98-4.31]	<0.01
Ethnicity						
BME	6625 (13.64)	65 (6.09)	1	-	1	-
White	40981 (84.36)	974 (91.28)	2.42 [1.88-3.12]	<0.01	1.92 [1.45-2.55]	<0.01
Employment status						
Employed	8239 (16.96)	337 (31.58)	2.63 [2.28-3.03]	<0.01	2.50 [2.14-2.92]	<0.01
Unemployed	29104 (59.91)	453 (42.46)	1	-	1	-
Sickness/disability	5497 (11.32)	117 (10.97)	1.37 [1.11-1.68]	<0.01	1.22 [0.99-1.52]	0.07
Retired	601 (1.24)	82 (7.69)	8.77 [6.84-11.24]	<0.01	5.22 [3.56-7.67]	<0.01
Other	1659 (3.42)	24 (2.25)	0.93 [0.61-1.41]	0.73	1.28 [0.81-2.03]	0.28
Accommodation status						
Homeless	4481 (9.22)	98 (9.18)	0.91 [0.74-1.13]	0.40	1.12 [0.89-1.40]	0.34
Temporary	4234 (8.72)	73 (6.84)	0.72 [0.56-0.92]	<0.01	1.01 [0.78-1.30]	0.95
Own/Rent	26603 (54.76)	638 (59.79)	1	-	1	-
Parent/Family	7445 (15.33)	123 (11.53)	0.69 [0.57-0.84]	<0.01	0.81 [0.66-1.00]	0.05
Other	1782 (3.67)	38 (3.56)	0.89 [0.64-1.24]	0.49	0.96 [0.67-1.36]	0.80
Region						
East Midlands	3321 (6.84)	88 (8.25)	1.60 [1.23-2.09]	<0.01	1.68 [1.25-2.26]	<0.01
East Anglia	3604 (7.42)	99 (9.28)	1.66 [1.29-2.14]	<0.01	1.73 [1.31-2.28]	<0.01
London	7246 (14.92)	75 (7.03)	0.63 [0.47-0.83]	<0.01	0.94 [0.69-1.28]	0.70
North East	7836 (16.13)	134 (12.56)	1.03 [0.82-1.31]	0.78	1.48 [1.14-1.91]	<0.01
North West	5619 (11.57)	199 (18.65)	2.14 [1.73-2.65]	<0.01	2.59 [2.05-3.26]	<0.01
South East	9434 (19.42)	156 (14.62)	1	-	1	-
South West	5401 (11.12)	137 (12.84)	1.53 [1.22-1.93]	<0.01	1.62 [1.26-2.09]	<0.01
West Midlands	3859 (7.94)	77 (7.22)	1.21 [0.92-1.59]	0.18	1.39 [1.02-1.90]	0.04
Yorkshire	2258 (4.65)	102 (9.56)	2.73 [2.12-3.52]	<0.01	3.39 [2.56-4.49]	<0.01

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, and region.

* Percentages may not add up to 100% due to missing data

Table 7: Association of offence type with veteran status

	Non-veterans (N=48,578)	Veterans (N=1,067)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%*)	N (%*)				
Violence against the person						
No	32227 (66.34)	645 (60.45)	1	-	1	-
Yes	15410 (31.72)	396 (37.11)	1.28 [1.13-1.46]	<0.01	1.32 [1.15-1.51]	0.01
Sex offence						
No	45125 (92.89)	959 (89.88)	1	-	1	-
Yes	2512 (5.17)	82 (7.69)	1.54 [1.22-1.93]	<0.01	0.76 [0.59-0.98]	0.03
Acquisitive offence						
No	39844 (82.02)	938 (87.91)	1	-	1	-
Yes	7793 (16.04)	103 (9.65)	0.56 [0.46-0.69]	<0.01	0.74 [0.60-0.92]	0.01
Non-interpersonal violence						
No	42662 (87.82)	953 (89.32)	1	-	1	-
Yes	4975 (10.24)	88 (8.25)	0.79 [0.64-0.99]	0.04	0.86 [0.68-1.08]	0.20
Motoring offence						
No	45501 (93.67)	958 (89.78)	1	-	1	-
Yes	2136 (4.40)	83 (7.78)	1.85 [1.47-2.32]	<0.01	1.36 [1.05-1.74]	0.02
Drug offence						
No	45834 (94.35)	1010 (94.66)	1	-	1	-
Yes	1803 (3.71)	31 (2.91)	0.78 [0.54-1.12]	0.18	0.93 [0.64-1.35]	0.70
Public order offence						
No	42495 (87.48)	933 (87.44)	1	-	1	-
Yes	5142 (10.59)	108 (10.12)	0.96 [0.78-1.17]	0.67	0.94 [0.76-1.17]	0.58
Breach offence						
No	44280 (91.15)	971 (91.00)	1	-	1	-
Yes	3357 (6.91)	70 (6.56)	0.95 [0.74-1.21]	0.69	0.99 [0.77-1.28]	0.95

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, and region.

* Percentages may not add up to 100% due to missing data

Table 8: Association of needs with veteran status

	Non-veterans (N=48,578)	Veterans (N=1,067)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%*)	N (%*)				
Mental Health need						
No	11711 (24.11)	203 (19.03)	1	-	1	-
Yes	28820 (59.33)	733 (68.70)	1.47 [1.25-1.72]	<0.01	1.80 [1.52-2.13]	0.01
Physical need						
No	34248 (70.50)	689 (64.57)	1	-	1	-
Yes	4646 (9.56)	190 (17.81)	2.03 [1.73-2.39]	<0.01	1.64 [1.37-1.97]	0.01
Learning Difficulties						
No	37971 (78.17)	922 (86.41)	1	-	1	-
Yes	1903 (3.92)	14 (1.31)	0.30 [0.18-0.51]	<0.01	0.35 [0.20-0.61]	0.01
Social & communication difficulties						
No	37905 (78.03)	897 (84.07)	1	-	1	-
Yes	1846 (3.80)	28 (2.62)	0.64 [0.44-0.94]	0.02	0.64 [0.43-0.96]	0.03
Alcohol misuse						
No	24165 (49.74)	516 (48.36)	1	-	1	-
Yes	14315 (29.47)	402 (37.68)	1.32 [1.15-1.50]	<0.01	1.21 [1.06-1.40]	0.01
Substance misuse						
No	24603 (50.65)	709 (66.45)	1	-	1	-
Yes	13635 (28.07)	193 (18.09)	0.49 [0.42-0.58]	<0.01	0.62 [0.53-0.74]	0.01

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, and region.

* Percentages may not add up to 100% due to missing data

Table 9: Association of mental health needs with veteran status

	Non-veterans (N=48,578)	Veterans (N=1,067)				
	N (%*)	N (%*)	OR [95% CI]	p	aOR [95% CI]†	p
Any disorder						
No	11711 (24.11)	203 (19.03)	1	-	1	-
Yes	28820 (59.33)	733 (68.70)	1.47 [1.25-1.72]	<0.01	1.80 [1.52-2.13]	0.01
Schizophrenia						
No	34604 (71.23)	883 (82.76)	1	-	1	-
Yes	5927 (12.20)	53 (4.97)	0.35 [0.27-0.46]	<0.01	0.39 [0.29-0.52]	0.01
Anxiety						
No	34491 (71.00)	546 (51.17)	1	-	1	-
Yes	6040 (12.43)	390 (36.55)	4.08 [3.57-4.66]	<0.01	4.13 [3.58-4.76]	0.01
Personality Disorder						
No	35093 (72.24)	857 (80.32)	1	-	1	-
Yes	5438 (11.19)	79 (7.40)	0.59 [0.47-0.75]	<0.01	0.90 [0.70-1.15]	0.40
Bipolar Disorder						
No	38889 (80.05)	903 (84.63)	1	-	1	-
Yes	1642 (3.38)	33 (3.09)	0.87 [0.61-1.23]	0.42	0.82 [0.57-1.20]	0.31
Depression						
No	27403 (56.41)	590 (55.30)	1	-	1	-
Yes	13128 (27.02)	346 (32.43)	1.22 [1.07-1.40]	<0.01	1.15 [1.00-1.32]	0.05
Dementia						
No	40440 (83.25)	922 (86.41)	1	-	1	-
Yes	91 (0.19)	14 (1.31)	6.75 [3.83-11.89]	<0.01	2.33 [1.22-4.47]	0.01
ADHD						
No	39164 (80.62)	931 (87.25)	1	-	1	-
Yes	1367 (2.81)	5 (0.47)	0.15 [0.06-0.37]	<0.01	0.21 [0.09-0.52]	0.01
Adjustment Disorder						
No	37876 (77.97)	859 (80.51)	1	-	1	-
Yes	2655 (5.47)	77 (7.22)	1.28 [1.01-1.62]	0.04	1.31 [1.01-1.70]	0.04
Brain Injury						
No	40273 (82.90)	925 (86.69)	1	-	1	-
Yes	258 (0.53)	11 (1.03)	1.86 [1.01-3.41]	0.05	1.45 [0.76-2.77]	0.26
Organic Disorder						
No	40385 (83.13)	929 (87.07)	1	-	1	-
Yes	146 (0.30)	7 (0.66)	2.08 [0.97-4.46]	0.06	1.29 [0.58-2.86]	0.54
Eating Disorder						
No	40402 (83.17)	932 (87.35)	1	-	1	-
Yes	129 (0.27)	4 (0.37)	1.34 [0.50-3.64]	0.56	0.98 [0.23-4.06]	0.97
Number of MH needs						
1 or fewer	33,525 (69.01)	690 (64.67)	1	-	1	-
More than 1	7,049 (14.51)	246 (23.06)	1.38 [1.27-1.50]	<0.01	1.49 [1.36-1.63]	0.01

† Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, and region.

* Percentages may not add up to 100% due to missing data

MH = mental health.

Table 10: Association of socio-demographic variables with violence against the person offences^a within the veteran sample

	Other offences (N=475)	Violence against the person (N=396)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%*)	N (%*)				
Gender						
Female	18 (3.79)	11 (2.78)	1.00	-	1.00	-
Male	453 (95.37)	384 (96.97)	1.39 [0.65-2.97]	0.40	0.94 [0.43-2.05]	0.87
Age						
30 & Under	114 (24.00)	95 (23.99)	1.04 [0.74-1.46]	0.84	1.02 [0.72-1.44]	0.92
31-45	205 (43.16)	165 (41.67)	1.00	-	1.00	-
46-60	121 (25.47)	100 (25.25)	1.03 [0.73-1.44]	0.88	0.93 [0.66-1.31]	0.67
Over 60	32 (6.74)	35 (8.84)	1.36 [0.81-2.29]	0.25	0.62 [0.28-1.36]	0.23
Ethnicity						
BME	27 (5.68)	25 (6.31)	1.00	-	1.00	-
White	436 (91.79)	364 (91.92)	0.90 [0.51-1.58]	0.72	0.89 [0.51-1.56]	0.69
Employment status						
Employed	138 (29.05)	132 (33.33)	1.44 [1.05-1.97]	0.02	1.20 [0.88-1.65]	0.25
Unemployed	233 (49.05)	155 (39.14)	1.00	-	1.00	-
Sickness/disability	47 (9.89)	46 (11.62)	1.47 [0.93-2.32]	0.10	1.33 [0.86-2.05]	0.20
Retired	27 (5.68)	37 (9.34)	2.06 [1.21-3.52]	<0.01	2.30 [1.05-5.04]	0.04
Other	9 (1.89)	9 (2.27)	1.50 [0.58-3.87]	0.40	1.63 [0.65-4.09]	0.30
Accommodation status						
Homeless	55 (11.58)	31 (7.83)	0.60 [0.37-0.96]	0.03	0.75 [0.47-1.20]	0.23
Temporary	36 (7.58)	24 (6.06)	0.71 [0.41-1.22]	0.21	0.79 [0.46-1.36]	0.40
Own/Rent	271 (57.05)	255 (64.39)	1.00	-	1.00	-
Parent/Family	60 (12.63)	38 (9.60)	0.67 [0.43-1.05]	0.08	0.69 [0.45-1.07]	0.10
Other	15 (3.16)	12 (3.03)	0.85 [0.39-1.85]	0.68	0.64 [0.30-1.35]	0.24

^a Violence against the person vs all other offences, excluding violent offences and sex offences.

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, accommodation status, and region.

* Percentages may not add up to 100% due to missing data

Table 11: Association of mental health needs with violence against the person^a offences within the veteran sample

	Other offences (N=475)	Violence against the person (N=396)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%)	N (%)				
Any disorder						
No	95 (20.00)	64 (16.16)	1.00	-	1.00	-
Yes	325 (68.42)	282 (71.21)	1.29 [0.90-1.84]	0.16	1.41 [0.97-2.03]	0.07
Schizophrenia						
No	399 (84.00)	326 (82.32)	1.00	-	1.00	-
Yes	21 (4.42)	20 (5.05)	1.17 [0.62-2.19]	0.63	1.17 [0.61-2.23]	0.64
Anxiety						
No	255 (53.68)	185 (46.72)	1.00	-	1.00	-
Yes	165 (34.74)	161 (40.66)	1.34 [1.01-1.79]	0.04	1.41 [1.05-1.90]	0.02
Personality Disorder						
No	385 (81.05)	315 (79.55)	1.00	-	1.00	-
Yes	35 (7.37)	31 (7.83)	1.08 [0.65-1.80]	0.76	1.15 [0.69-1.93]	0.59
Bipolar						
No	397 (83.58)	338 (85.35)	1.00	-	1.00	-
Yes	23 (4.84)	8 (2.02)	0.41 [0.18-0.93]	0.03	0.39 [0.16-0.93]	0.03
Depression						
No	271 (57.05)	206 (52.02)	1.00	-	1.00	-
Yes	149 (31.37)	140 (35.35)	1.24 [0.92-1.66]	0.16	1.28 [0.95-1.73]	0.10
Dementia						
No	415 (87.37)	341 (86.11)	1.00	-	1.00	-
Yes	5 (1.05)	5 (1.26)	1.22 [0.35-4.24]	0.76	0.67 [0.17-2.59]	0.56
ADHD						
No	419 (88.21)	343 (86.62)	1.00	-	1.00	-
Yes	1 (0.21)	3 (0.76)	3.66 [0.38-35.39]	0.26	4.32 [0.44-42.02]	0.21
Adjustment Disorder						
No	377 (79.37)	323 (81.57)	1.00	-	1.00	-
Yes	43 (9.05)	23 (5.81)	0.62 [0.37-1.06]	0.08	0.69 [0.40-1.17]	0.17
Brain Injury						
No	417 (87.79)	339 (85.61)	1.00	-	1.00	-
Yes	3 (0.63)	7 (1.77)	2.87 [0.74-11.18]	0.13	2.67 [0.66-10.85]	0.17
Organic Disorder						
No	418 (88.00)	344 (86.87)	1.00	-	1.00	-
Yes	2 (0.42)	2 (0.51)	1.22 [0.17-8.67]	0.85	0.84 [0.11-6.43]	0.87
Eating Disorder						
No	419 (88.21)	344 (86.87)	1.00	-	1.00	-
Yes	1 (0.21)	2 (0.51)	2.44 [0.22-26.98]	0.47	2.15 [0.19-24.53]	0.54
Number of MH needs						
1 or fewer	320 (67.37)	242 (61.11)	1.00	-	1.00	-
More than 1	100 (21.05)	104 (26.26)	1.17 [0.97-1.40]	0.10	1.21 [1.01-1.47]	0.04
Alcohol misuse						
No	209 (44.00)	195 (49.24)	1.00	-	1.00	-
Yes	208 (43.79)	140 (35.35)	0.72 [0.54-0.96]	0.03	0.75 [0.56-1.02]	0.06
Substance misuse						
No	298 (62.74)	277 (69.95)	1.00	-	1.00	-
Yes	114 (24.00)	50 (12.63)	0.47 [0.33-0.68]	<0.01	0.51 [0.35-0.75]	0.01

^a Violence against the person vs all other offences, excluding violent offences and sex offences.

† Adjusted odds ratios: adjusted for employment status

* Percentages may not add up to 100% due to missing data. MH = mental health.

Table 12: Association of socio-demographic variables with sex offences^a within the veteran sample

	Other offences (N=475)	Sex offence (N=82)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%)	N (%)				
Gender						
Female	18 (3.79)	0 (0.00)				
Male	453 (95.37)	82 (100.00)				
Age						
30 & Under	114 (24.00)	15 (18.29)	1.12 [0.57-2.23]	0.74	1.25 [0.58-2.69]	0.57
31-45	205 (43.16)	24 (29.27)	1.00	-	1.00	-
46-60	121 (25.47)	26 (31.71)	1.84 [1.01-3.34]	0.05	1.73 [0.84-3.55]	0.14
Over 60	32 (6.74)	17 (20.73)	4.54 [2.20-9.36]	<0.01	7.36 [2.10-25.82]	<0.01
Ethnicity						
BME	27 (5.68)	6 (7.32)	1.00	-	1.00	-
White	436 (91.79)	73 (89.02)	0.75 [0.30-1.89]	0.55	0.99 [0.32-3.07]	0.98
Employment status						
Employed	138 (29.05)	28 (34.15)	2.36 [1.28-4.36]	<0.01	2.74 [1.36-5.52]	<0.01
Unemployed	233 (49.05)	20 (24.39)	1.00	-	1.00	-
Sickness/disability	47 (9.89)	12 (14.63)	2.97 [1.36-6.50]	<0.01	3.18 [1.37-7.40]	<0.01
Retired	27 (5.68)	12 (14.63)	5.18 [2.28-11.75]	<0.01	1.39 [0.38-5.10]	0.62
Other	9 (1.89)	4 (4.88)	5.18 [1.46-18.31]	0.01	6.68 [1.40-31.78]	0.02
Accommodation status						
Homeless	55 (11.58)	4 (4.88)	0.40 [0.14-1.16]	0.09	0.59 [0.20-1.81]	0.36
Temporary	36 (7.58)	2 (2.44)	0.31 [0.07-1.32]	0.11	0.37 [0.08-1.67]	0.19
Own/Rent	271 (57.05)	49 (59.76)	1.00	-	1.00	-
Parent/Family	60 (12.63)	10 (12.20)	0.92 [0.44-1.92]	0.83	1.35 [0.60-3.02]	0.47
Other	15 (3.16)	7 (8.54)	2.58 [1.00-6.66]	0.05	2.66 [0.92-7.69]	0.07

^a Sex offences vs all other offences, excluding violence against the person and violent offences.

† Adjusted odds ratios: adjusted for age, ethnicity, employment status and accommodation status.

* Percentages may not add up to 100% due to missing data

Table 13: Association of mental health needs with sex offences^a within the veteran sample

	Other offences (N=475)	Sex offence (N=82)				
	N (%*)	N (%*)	OR [95% CI]	p	aOR [95% CI] [†]	p
Any disorder						
No	95 (20.00)	22 (26.83)	1.00	-	1.00	-
Yes	325 (68.42)	54 (65.85)	0.72 [0.42-1.24]	0.23	0.92 [0.50-1.70]	0.78
Schizophrenia						
No	399 (84.00)	71 (86.59)	1.00	-	1.00	-
Yes	21 (4.42)	5 (6.10)	1.34 [0.49-3.66]	0.57	1.73 [0.59-5.06]	0.32
Anxiety						
No	255 (53.68)	50 (60.98)	1.00	-	1.00	-
Yes	165 (34.74)	26 (31.71)	0.80 [0.48-1.34]	0.40	1.06 [0.61-1.86]	0.83
Personality Disorder						
No	385 (81.05)	72 (87.80)	1.00	-	1.00	-
Yes	35 (7.37)	4 (4.88)	0.61 [0.21-1.77]	0.36	0.88 [0.29-2.70]	0.83
Bipolar						
No	397 (83.58)	76 (92.68)				
Yes	23 (4.84)	0 (0.00)				
Depression						
No	271 (57.05)	46 (56.10)	1.00	-	1.00	-
Yes	149 (31.37)	30 (36.59)	1.19 [0.72-1.96]	0.50	1.32 [0.77-2.26]	0.31
Dementia						
No	415 (87.37)	74 (90.24)	1.00	-	1.00	-
Yes	5 (1.05)	2 (2.44)	2.24 [0.43-11.78]	0.34	0.27 [0.03-2.88]	0.28
ADHD						
No	419 (88.21)	75 (91.46)	1.00	-	1.00	-
Yes	1 (0.21)	1 (1.22)	5.59 [0.35-90.29]	0.23	15.27 [0.86-270.62]	0.06
Adjustment Disorder						
No	377 (79.37)	72 (87.80)	1.00	-	1.00	-
Yes	43 (9.05)	4 (4.88)	0.49 [0.17-1.40]	0.18	0.66 [0.22-1.96]	0.46
Brain Injury						
No	417 (87.79)	75 (91.46)	1.00	-	1.00	-
Yes	3 (0.63)	1 (1.22)	1.85 [0.19-18.06]	0.60	1.76 [0.17-18.22]	0.63
Organic Disorder						
No	418 (88.00)	74 (90.24)	1.00	-	1.00	-
Yes	2 (0.42)	2 (2.44)	5.65 [0.78-40.73]	0.09	1.92 [0.23-15.98]	0.55
Eating Disorder						
No	419 (88.21)	76 (92.68)				
Yes	1 (0.21)	0 (0.00)				
Number of MH needs						
1 or fewer	320 (67.37)	55 (67.07)	1.00	-	1.00	-
More than 1	100 (21.05)	21 (25.61)	0.88 [0.64-1.20]	0.41	1.06 [0.75-1.51]	0.74
Alcohol misuse						
No	209 (44.00)	61 (74.39)	1.00	-	1.00	-
Yes	208 (43.79)	14 (17.07)	0.23 [0.13-0.43]	<0.01	0.20 [0.10-0.40]	0.01
Substance misuse						
No	298 (62.74)	70 (85.37)	1.00	-	1.00	-
Yes	114 (24.00)	3 (3.66)	0.11 [0.03-0.36]	<0.01	0.15 [0.05-0.51]	0.01

^a Sex offences vs all other offences, excluding violence against the person and violent offences.

[†] Adjusted odds ratios: adjusted for age & employment status

* Percentages may not add up to 100% due to missing data. MH = mental health.

Table 14: Association of socio-demographics with acquisitive^a offences in the veteran sample

	Other offences (N=938)	Acquisitive offence (N=103)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%*)	N (%*)				
Gender						
Female	28 (2.99)	4 (3.88)	1.00	-	1.00	-
Male	905 (96.48)	99 (96.12)	0.77 [0.26-2.23]	0.62	1.45 [0.33-6.36]	0.62
Age						
30 & Under	234 (24.95)	24 (23.30)	0.74 [0.44-1.23]	0.24	0.87 [0.50-1.53]	0.63
31-45	374 (39.87)	52 (50.49)	1.00	-	1.00	-
46-60	243 (25.91)	22 (21.36)	0.65 [0.39-1.10]	0.11	0.75 [0.43-1.31]	0.32
Over 60	83 (8.85)	4 (3.88)	0.35 [0.12-0.98]	0.05	0.34 [0.07-1.55]	0.16
Ethnicity						
BME	51 (5.44)	11 (10.68)	1.00	-	1.00	-
White	864 (92.11)	91 (88.35)	0.49 [0.25-0.97]	0.04	0.57 [0.27-1.20]	0.14
Employment status						
Employed	311 (33.16)	20 (19.42)	0.42 [0.25-0.71]	<0.01	0.53 [0.30-0.91]	0.02
Unemployed	386 (41.15)	59 (57.28)	1.00	-	1.00	-
Sickness/disability	99 (10.55)	15 (14.56)	0.99 [0.54-1.82]	0.98	1.03 [0.54-1.97]	0.93
Retired	76 (8.10)	5 (4.85)	0.43 [0.17-1.11]	0.08	1.04 [0.26-4.13]	0.96
Other	22 (2.35)	1 (0.97)	0.30 [0.04-2.25]	0.24	0.44 [0.06-3.46]	0.44
Accommodation status						
Homeless	77 (8.21)	20 (19.42)	2.78 [1.58-4.89]	<0.01	2.46 [1.37-4.41]	<0.01
Temporary	57 (6.08)	11 (10.68)	2.06 [1.02-4.17]	0.04	1.68 [0.81-3.47]	0.16
Own/Rent	577 (61.51)	54 (52.43)	1.00	-	1.00	-
Parent/Family	111 (11.83)	9 (8.74)	0.87 [0.42-1.81]	0.70	0.84 [0.40-1.80]	0.66
Other	35 (3.73)	3 (2.91)	0.92 [0.27-3.08]	0.89	0.59 [0.14-2.59]	0.49

^a Acquisitive offences vs all other offences.

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status and accommodation status.

* Percentages may not add up to 100% due to missing data

Table 15: Association of mental health needs with acquisitive^a offences in the veteran sample

	Other offences (N=938)	Acquisitive offence (N=103)				
	N (%)	N (%)	OR [95% CI]	p	aOR [95% CI] [†]	p
Any disorder						
No	177 (18.87)	20 (19.42)	1.00	-	1.00	-
Yes	647 (68.98)	73 (70.87)	1.00 [0.59-1.68]	1.00	0.97 [0.56-1.67]	0.91
Schizophrenia						
No	778 (82.94)	89 (86.41)	1.00	-	1.00	-
Yes	46 (4.90)	4 (3.88)	0.76 [0.27-2.16]	0.61	0.75 [0.26-2.18]	0.59
Anxiety						
No	474 (50.53)	59 (57.28)	1.00	-	1.00	-
Yes	350 (37.31)	34 (33.01)	0.78 [0.50-1.22]	0.27	0.76 [0.48-1.22]	0.25
Personality Disorder						
No	754 (80.38)	85 (82.52)	1.00	-	1.00	-
Yes	70 (7.46)	8 (7.77)	1.01 [0.47-2.18]	0.97	0.90 [0.41-1.98]	0.80
Bipolar						
No	802 (85.50)	83 (80.58)	1.00	-	1.00	-
Yes	22 (2.35)	10 (9.71)	4.39 [2.01-9.59]	<0.01	3.99 [1.73-9.21]	0.01
Depression						
No	514 (54.80)	60 (58.25)	1.00	-	1.00	-
Yes	310 (33.05)	33 (32.04)	0.91 [0.58-1.43]	0.69	0.93 [0.59-1.49]	0.77
Dementia						
No	811 (86.46)	92 (89.32)	1.00	-	1.00	-
Yes	13 (1.39)	1 (0.97)	0.68 [0.09-5.24]	0.71	1.85 [0.18-18.73]	0.60
ADHD						
No	819 (87.31)	93 (90.29)				
Yes	5 (0.53)	0 (0.00)				
Adjustment Disorder						
No	757 (80.70)	86 (83.50)	1.00	-	1.00	-
Yes	67 (7.14)	7 (6.80)	0.92 [0.41-2.07]	0.84	0.98 [0.43-2.23]	0.95
Brain Injury						
No	813 (86.67)	93 (90.29)				
Yes	11 (1.17)	0 (0.00)				
Organic Disorder						
No	817 (87.10)	93 (90.29)				
Yes	7 (0.75)	0 (0.00)				
Eating Disorder						
No	821 (87.53)	93 (90.29)				
Yes	3 (0.32)	0 (0.00)				
Number of MH needs						
1 or fewer	602 (64.18)	74 (71.84)	1.00	-	1.00	-
More than 1	222 (23.67)	19 (18.45)	0.91 [0.69-1.21]	0.52	0.92 [0.68-1.24]	0.57
Alcohol misuse						
No	446 (47.55)	59 (57.28)	1.00	-	1.00	-
Yes	366 (39.02)	31 (30.10)	0.64 [0.41-1.01]	0.06	0.59 [0.37-0.94]	0.03
Substance misuse						
No	651 (69.40)	48 (46.60)	1.00	-	1.00	-
Yes	145 (15.46)	42 (40.78)	3.93 [2.50-6.17]	<0.01	3.49 [2.17-5.63]	0.01

^a Acquisitive offences vs all other offences.

[†] Adjusted odds ratios: adjusted for employment status and accommodation status.

* Percentages may not add up to 100% due to missing data. MH = mental health.

Table 16: Association of socio-demographic variables with motoring^a offences within the veteran sample

	Other offences (N=958)	Motoring offence (N=83)	OR [95% CI]	p	aOR [95% CI] [†]	p
	N (%)	N (%)				
Gender						
Female	29 (3.03)	3 (3.61)	1.00	-	1.00	-
Male	926 (96.66)	78 (93.98)	0.81 [0.24-2.73]	0.74	0.74 [0.21-2.59]	0.63
Age						
30 & Under	234 (24.43)	24 (28.92)	1.46 [0.83-2.57]	0.19	1.05 [0.54-2.04]	0.90
31-45	398 (41.54)	28 (33.73)	1.00	-	1.00	-
46-60	242 (25.26)	23 (27.71)	1.35 [0.76-2.40]	0.30	1.62 [0.86-3.07]	0.14
Over 60	79 (8.25)	8 (9.64)	1.44 [0.63-3.27]	0.39	1.98 [0.47-8.33]	0.35
Ethnicity						
BME	57 (5.95)	5 (6.02)	1.00	-	1.00	-
White	881 (91.96)	74 (89.16)	0.96 [0.37-2.46]	0.93	0.73 [0.27-1.95]	0.53
Employment status						
Employed	286 (29.85)	45 (54.22)	3.73 [2.12-6.58]	<0.01	3.40 [1.87-6.18]	<0.01
Unemployed	427 (44.57)	18 (21.69)	1.00	-	1.00	-
Sickness/disability	110 (11.48)	4 (4.82)	0.86 [0.29-2.60]	0.79	0.76 [0.25-2.32]	0.63
Retired	76 (7.93)	5 (6.02)	1.56 [0.56-4.33]	0.39	0.96 [0.21-4.41]	0.96
Other	20 (2.09)	3 (3.61)	3.56 [0.97-13.08]	0.06	1.21 [0.15-9.84]	0.86
Accommodation status						
Homeless	90 (9.39)	7 (8.43)	0.85 [0.37-1.92]	0.69	0.92 [0.38-2.27]	0.86
Temporary	66 (6.89)	2 (2.41)	0.33 [0.08-1.39]	0.13	0.53 [0.12-2.30]	0.40
Own/Rent	578 (60.33)	53 (63.86)	1.00	-	1.00	-
Parent/Family	113 (11.80)	7 (8.43)	0.68 [0.30-1.52]	0.34	0.73 [0.31-1.72]	0.47
Other	37 (3.86)	1 (1.20)	0.29 [0.04-2.19]	0.23	0.40 [0.05-3.02]	0.37

^a Motoring offences vs all other offences.

[†] Adjusted odds ratios: adjusted for age, gender, ethnicity, employment status, accommodation status, and region.

* Percentages may not add up to 100% due to missing data

Table 17: Association of mental health needs with motoring^a offences within the veteran sample

	Other offences (N=958)	Motoring offence (N=83)				
	N (%)	N (%)	OR [95% CI]	p	aOR [95% CI] [†]	p
Any disorder						
No	177 (18.48)	20 (24.10)	1.00	-	1.00	-
Yes	668 (69.73)	52 (62.65)	0.69 [0.40-1.18]	0.18	0.82 [0.46-1.46]	0.50
Schizophrenia						
No	797 (83.19)	70 (84.34)	1.00	-	1.00	-
Yes	48 (5.01)	2 (2.41)	0.47 [0.11-1.99]	0.31	0.64 [0.15-2.75]	0.55
Anxiety						
No	485 (50.63)	48 (57.83)	1.00	-	1.00	-
Yes	360 (37.58)	24 (28.92)	0.67 [0.41-1.12]	0.13	0.69 [0.41-1.16]	0.16
Personality Disorder						
No	772 (80.58)	67 (80.72)	1.00	-	1.00	-
Yes	73 (7.62)	5 (6.02)	0.79 [0.31-2.02]	0.62	0.81 [0.28-2.33]	0.70
Bipolar						
No	816 (85.18)	69 (83.13)	1.00	-	1.00	-
Yes	29 (3.03)	3 (3.61)	1.22 [0.36-4.12]	0.74	1.11 [0.25-4.86]	0.89
Depression						
No	534 (55.74)	40 (48.19)	1.00	-	1.00	-
Yes	311 (32.46)	32 (38.55)	1.37 [0.85-2.23]	0.20	1.39 [0.83-2.30]	0.21
Dementia						
No	832 (86.85)	71 (85.54)	1.00	-	1.00	-
Yes	13 (1.36)	1 (1.20)	0.90 [0.12-6.99]	0.92	1.17 [0.12-11.11]	0.89
ADHD						
No	840 (87.68)	72 (86.75)				
Yes	5 (0.52)	0 (0.00)				
Adjustment Disorder						
No	780 (81.42)	63 (75.90)	1.00	-	1.00	-
Yes	65 (6.78)	9 (10.84)	1.71 [0.82-3.60]	0.15	1.55 [0.70-3.43]	0.28
Brain Injury						
No	834 (87.06)	72 (86.75)				
Yes	11 (1.15)	0 (0.00)				
Organic Disorder						
No	838 (87.47)	72 (86.75)				
Yes	7 (0.73)	0 (0.00)				
Eating Disorder						
No	842 (87.89)	72 (86.75)				
Yes	3 (0.31)	0 (0.00)				
Number of MH needs						
1 or fewer	624 (65.14)	52 (62.65)				
More than 1	221 (23.07)	20 (24.10)	0.94 [0.68-1.28]	0.68	0.96 [0.69-1.33]	0.80
Alcohol misuse						
No	481 (50.21)	24 (28.92)	1.00	-	1.00	-
Yes	348 (36.33)	49 (59.04)	2.82 [1.70-4.69]	<0.01	2.79 [1.64-4.75]	0.01
Substance misuse						
No	634 (66.18)	65 (78.31)	1.00	-	1.00	-
Yes	181 (18.89)	6 (7.23)	0.32 [0.14-0.76]	<0.01	0.32 [0.12-0.81]	0.02

^a Motoring offences vs all other offences.

[†] Adjusted odds ratios: adjusted for employment status.

* Percentages may not add up to 100% due to missing data. MH = mental health.

Appendix A4. Serving personnel

A4.1 Socio-demographic characteristics

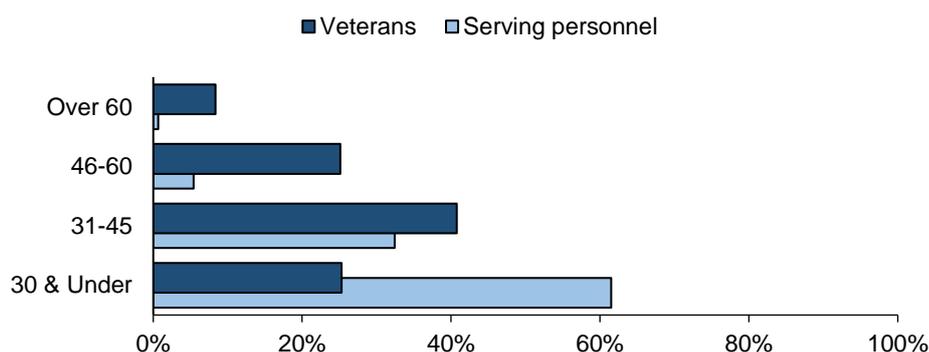
Gender

Of the 148 serving personnel, 90% (N = 133) were male. This proportion was smaller than that of the veteran sample (N = 1028, 96%).

Age

The age distribution of the L&D cases reporting to be currently serving in the UK Armed forces is presented in Figure 15. The majority of currently serving personnel were aged 30 and under (N = 91, 61%). This contrasts with the veterans in the database, who tended to be older (aged 31-45, N = 435, 41%; aged 46-50, N = 268, 25% see also Table 6 in Appendix A3).

Figure 15: Age distribution of L&D cases reporting to be currently serving in the UK Armed Forces



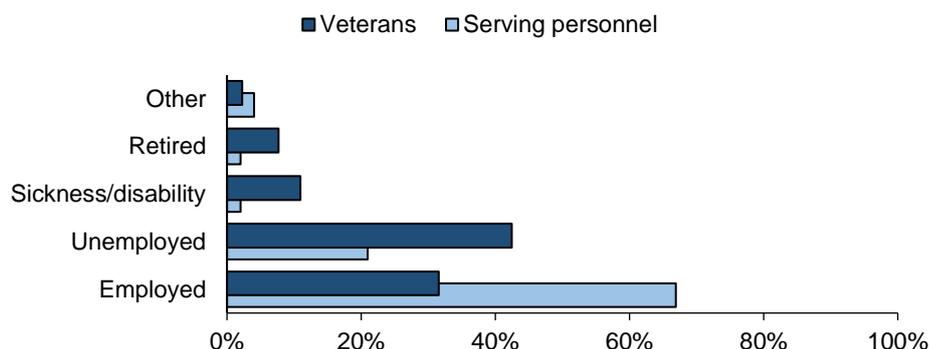
Ethnicity

The majority of serving personnel identified as white British (N = 121, 82%). However, 14% (N = 21) identified as BME which is more than twice the proportion of BME among veterans in the L&D database (N = 65, 6% see also Table 6 in Appendix A3).

Employment

The employment status of the L&D cases reporting to be currently serving in the UK Armed forces are presented in Figure 16. The majority of currently serving personnel reported that they were in employment, owing to the fact that they were still serving in the UK Armed Forces (N = 99, 67%). This proportion was greater than that of the veteran sample (N = 337, 32% see also Table 6 in Appendix A3). However, 21% (N = 31) of cases reporting to be currently serving classified themselves as unemployed. It is likely that these cases pertained to Reservists who were not on deployment during their contact with L&D services.

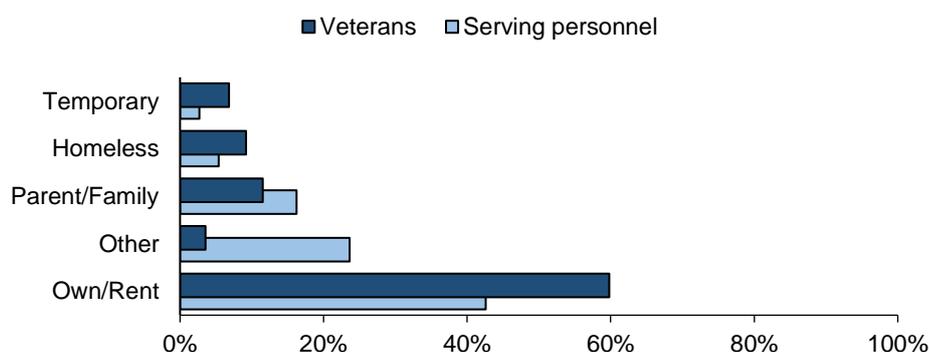
Figure 16: Employment status of L&D cases reporting to be currently serving in the UK Armed Forces



Accommodation

The accommodation status of the L&D cases reporting to be currently serving in the UK Armed forces are presented in Figure 17. The majority of serving personnel reported that they were in owned or rented accommodation (N = 63, 43%). This proportion was smaller than that of the veteran sample (N = 638, 60%). The proportions of serving personnel and veterans in the remaining accommodation categories were largely similar, except that a considerably larger proportion of serving personnel than veterans classified their accommodation status as “other” (serving personnel, N = 32, 24%; veterans, N = 38, 4%; see also Table 6 in Appendix A3)^{xx}.

Figure 17: Accommodation status of L&D cases reporting to be currently serving in the UK Armed Forces

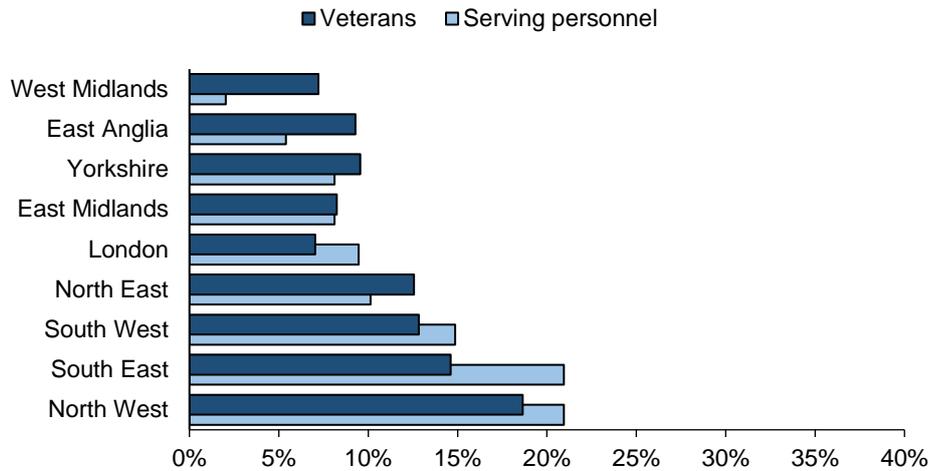


Region

The regional locations of L&D cases reporting to be currently serving in the UK Armed forces are presented in Figure 18. Largely similar to the veteran sample, serving personnel tended to be situated in the North West (N = 31, 21%) and the South East (N = 31, 21%), although these proportions were larger than those of the veteran sample (North West, N = 199, 19%; South East, N = 156, 15%; see Table 6 in Appendix A3).

^{xx} The “other” accommodation category comprised “hospital” and “other”. None of the serving personnel was in hospital, therefore we were unable to ascertain the accommodation status of the remaining 32 serving personnel.

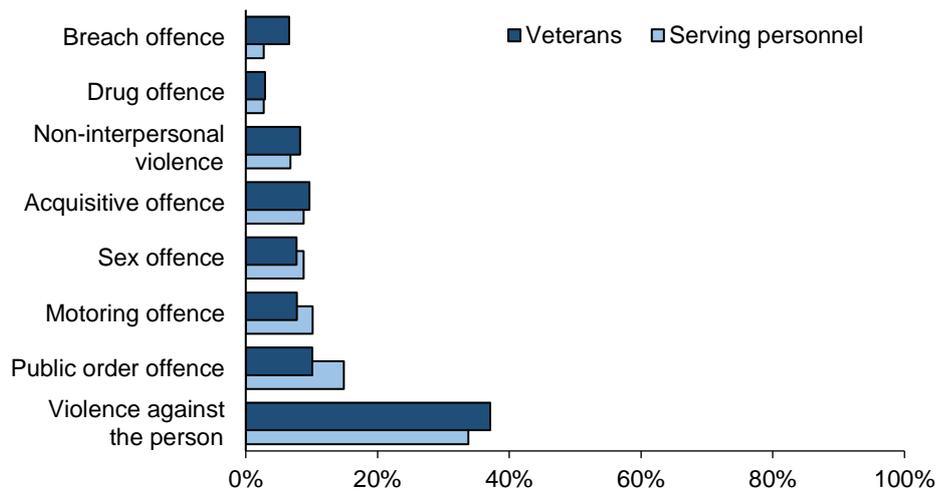
Figure 18: Regional location of L&D cases reporting to be currently serving in the UK Armed Forces



A4.2 Offence characteristics of currently serving personnel

Figure 19 shows the offences that the serving personnel were charged with (or were suspected of having committed). The majority of serving personnel had committed violence against the person offences (N = 50, 34%). This proportion was not dissimilar to that of the veteran sample (N = 396, 37%). Public order (N = 22, 15%), motoring (N = 15, 10%) and sex offences (N = 13, 9%) were more prevalent among serving personnel compared to the veteran sample (see Figure 19). Conversely, acquisitive (N = 13, 9%), non-interpersonal violence (N = 10, 7%) and breach offences (N = 4, 3%) were less prevalent among serving personnel than veterans (see Figure 19 and Table 7 in Appendix A3).

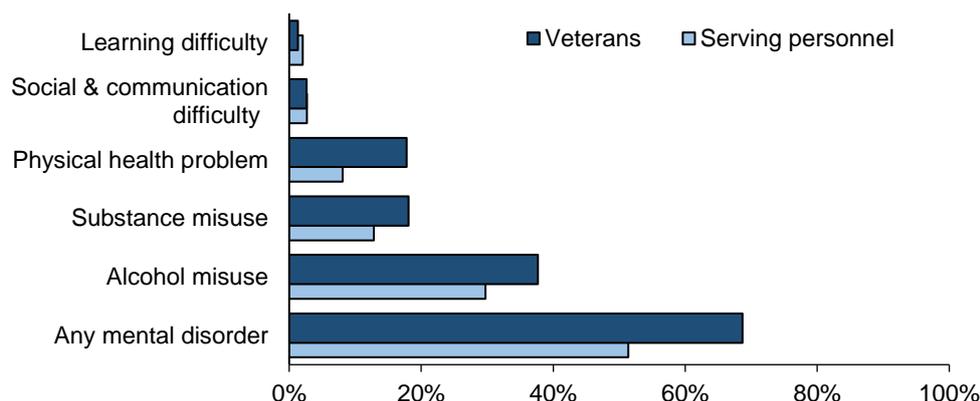
Figure 19: Offence characteristics of L&D cases reporting to be currently serving in the UK Armed Forces



A4.3 Health needs of currently serving personnel

The health needs of the L&D cases reporting to be currently serving in the UK Armed forces are presented in Figure 20. The presence of any mental disorder (N = 76, 51%), alcohol misuse (N = 44, 30%), substance use (N = 19, 13%), physical health problems (N = 12, 8%) were all less prevalent among the serving personnel compared to the veteran sample (see Figure 20 and Table 8 in Appendix A3).

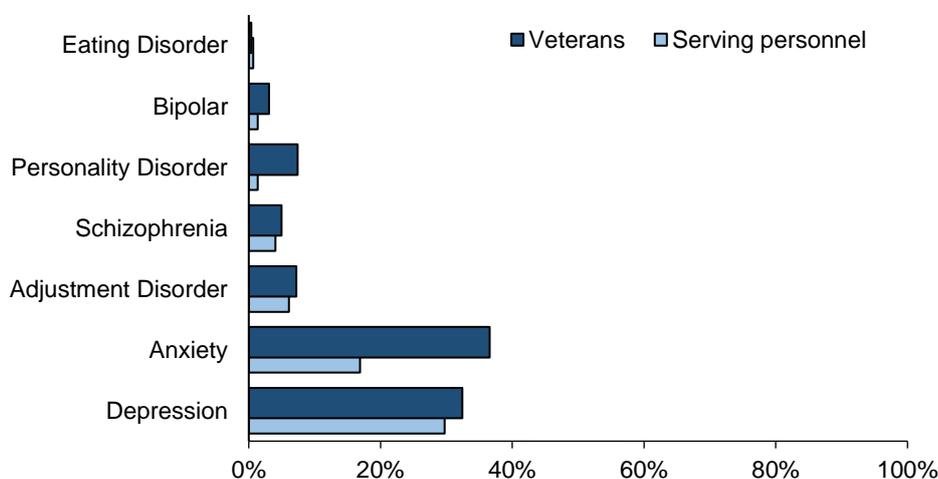
Figure 20: The health needs of L&D cases reporting to be currently serving in the UK Armed Forces



Mental disorders

The mental disorders among the L&D cases reporting to be currently serving in the UK Armed forces are presented in Figure 21. The most prevalent mental disorders reported by serving personnel were Depression (N = 44, 30%) and Anxiety (N = 25, 17%). However, all mental disorders were less prevalent among serving personnel, compared to the veteran sample (see Figure 21). Anxiety disorders in particular were much less prevalent among serving personnel than among veterans (veterans, N = 390, 37%).

Figure 21: Probable mental disorders among L&D cases reporting to be currently serving in the UK Armed Forces.



Appendix A5. Additional recommendations

In addition to the recommendations outlined in the Discussion section, we have a number recommendations relating to L&D data collection:

<u>Issue</u>	<u>Recommendation</u>
<ul style="list-style-type: none"> There was a considerable amount of missing data, as well as data that were entered as “unknown”. This may be due to a number of factors for example: (i) the questions are missed; (ii) the questions are deliberately not asked for various reasons e.g. the individual’s current presentation; (iii) the respondent chose not to answer certain questions; (iv) data are lost in the process of inputting it into the database. 	<ul style="list-style-type: none"> There are a number of simple practical solutions to the issue of missing data: (i) there should be more options in the database fields so that the reason for the missing information can be recorded: e.g. having extra selection options such as “refused to answer”, and “question not asked”; (ii) it should not be possible to move to the next database field if the current field is left blank; (iii) if the information is inputted from paper forms, these should be laid out such that fields are less likely to be missed e.g. having each question on a separate line, etc.
<ul style="list-style-type: none"> Offences are pre-categorised therefore information on the precise nature of the offence is lost. 	<ul style="list-style-type: none"> Having an extra field to specify the exact offence would solve this issue.
<ul style="list-style-type: none"> Some mental health problems e.g. Anxiety Disorders are combined together, which does not allow for an examination of e.g. different Anxiety Disorders. 	<ul style="list-style-type: none"> Again, having extra fields in which to specify the precise mental health problem would solve this issue.
<ul style="list-style-type: none"> Many of the fields in the database had an “other” option, but no additional specifying field. This means that potentially rich information is lost simply because there is nowhere to record it. 	<ul style="list-style-type: none"> There should be an extra specifying field, which should be compulsory if “other” is selected.

Acknowledgements

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