The Physical Health and Healthcare Experiences of UK Ex-servicewomen

CMWR

a.r.u. Veterans & Families Institute for Military Social Research

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Contents

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The Veterans and Families Institute for Military Social Research (VFI) was established in 2014 to provide research, consultancy and impact within the military and veteran community. From this in 2022 the Centre for Military Women's Research (CMWR) was founded, which seeks to inform and improve the well-being of women in the military and veteran community by co-production and collaboration in world-leading research and evaluation.

The King's Centre for Military Health Research: Prof Nicola Fear, Dr Sharon Stevelink, Dr Alexandria Smith

The King's Centre for Military Health Research (KCMHR) is the leading civilian UK centre of excellence for research with the Armed Forces community. Independent of the Ministry of Defence, Office for Veterans' Affairs and chain of command, our research has provided much-needed evidence on the health and well-being of serving and ex-serving personnel and their families.

Defence Medical Welfare Service: Jess Liston

Defence Medical Welfare Service (DMWS) is an independent charity providing medical welfare to those who have served (and continue to serve) on the frontline. We support all members of the Armed Forces community across the services, including serving personnel, reservists, veterans, and their family members/carers.

Op RESTORE, The Veterans Physical Health and Wellbeing Service: Dr Amrutha Bhaskaran, Beth Lambert

Op RESTORE, The Veterans Physical Health and Wellbeing Service is an NHS service that supports individuals who have served in, or are leaving, the UK Armed Forces and have continuing physical health injuries and related medical problems attributed to their time in the Armed Forces. It is hosted at Imperial College Healthcare NHS Trust.

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Executive summary

This research report delivers a comprehensive analysis of the physical health needs and healthcare experiences of UK ex-servicewomen, a group historically underrepresented in veteran health research. The study was a collaboration between five organisations: The Centre for Military Women's Research (Anglia Ruskin University), the King's Centre for Military Health Research (King's College London), Defence Medical Welfare Service, Op RESTORE and the Royal British Legion. We employed a mixed-methods design, integrating a scoping literature review, quantitative analyses of existing UK datasets and qualitative interviews to provide a multidimensional understanding of ex-servicewomen's physical health needs and experiences of accessing support services.

Methods overview

1. Scoping literature review

A scoping review was conducted using the Joanna Briggs Institute (JBI) framework[92] to identify, analyse and summarise research on UK ex-servicewomen's physical health since 2000. The review included 25 relevant reports and articles, focusing on studies with gender-disaggregated data or those specifically examining women's health post-service.

2. Quantitative analyses of existing datasets

Three UK datasets were analysed:

- **UK Biobank:** A large-scale biomedical database containing anonymised lifestyle and health data from 500,000 UK participants aged 40–69, recruited between 2006 and 2010. Participants provided consent, detailed lifestyle and physical information, and biological samples for analysis.

92 Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil, H. Scoping Reviews (2020). Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z, editors. JBI Manual for Evidence Synthesis. JBI; 2024. Available from: https://synthesismanual.jbi.global.

The UK Biobank is accessible worldwide to approved researchers conducting health-related studies in the public interest. It is funded by the Medical Research Council, Wellcome, the British Heart Foundation, Cancer Research UK, the NIHR, and UKRI, and employs over 200 staff across the UK.

- **Defence Medical Welfare Service (DMWS):** A database containing data from 505 ex-servicewomen and 6,116 ex-servicemen supported by DMWS between 2020–2023. Health conditions were extracted from DMWS welfare officer assessments and categorised to align with UK Biobank health categories. Analyses compared health conditions and complexity of needs between ex-servicewomen and ex-servicemen.
- **Op RESTORE, The Veterans Physical Health and Wellbeing Service:** A prospective database of beneficiaries of the first service in England specifically for veterans with continuing physical health injuries and related medical problems attributed to their time in the Armed Forces.

3. Qualitative interviews

- **Sample:** 40 UK ex-servicewomen with current physical health conditions, recruited via veteran networks, social media and veteran charities.
- **Approach:** Exploratory Descriptive Qualitative (EDQ) methodology using semi-structured interviews (approx. one hour, audio-recorded).
- **Analysis:** Reflexive thematic analysis[93] (Braun & Clarke, 2019) in NVivo 14, with both inductive and deductive coding.

4. Stakeholder engagement

An expert-by-experience group (10 tri-service ex-servicewomen) and a Project Advisory Board (including MOD, NHS and charity representatives) contributed to study design, data interpretation and recommendations through workshops and regular consultations.

Key findings:

1. Prevalence and nature of physical health conditions

- **Musculoskeletal conditions:** Across data sources, musculoskeletal (MSK) conditions/disorders such as osteoarthritis, back pain and joint injuries appear to be prevalent health problems among ex-servicewomen. UK Biobank data shows that ex-servicewomen are more likely to have osteoarthritis compared to ex-servicemen (21.1% vs 17.5%) and civilian women (21.1% vs 17.4%), with DMWS, Op RESTORE and qualitative interviews reporting

93 Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health, 11(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806.

MSK conditions as the most common condition for ex-servicewomen. Qualitative data suggests these issues are frequently attributed to service-related factors, including 'wear and tear' from intense physical activity, injuries during training or deployment, and the use of equipment and uniforms poorly suited to female bodies. Many women described long-term pain, mobility limitations and the need for home adaptations or assistive devices.

- **Neurological and chronic conditions:** Ex-servicewomen in the UK Biobank dataset are more likely to experience migraines (6.8% vs 2.4%) and thyroid disorders (8.8% vs 2.5%) than their male counterparts, reflecting broader gender patterns. The risk of chronic obstructive pulmonary disease (COPD) is also higher among ex-servicewomen compared to civilian women, after adjusting for smoking and obesity, suggesting occupational exposures unique to military service may be a factor (OR: 1.79).
- **Health behaviours:** UK Biobank data suggests that while the prevalence of obesity (BMI ≥30) is similar between ex-servicewomen and ex-servicemen (29.7% vs. 31.1%), it is notably higher than in civilian women (29.7% vs 19.3%). Additionally, ex-servicewomen report higher prevalence of current or former smoking than civilian women (45.6% vs 37.3%), suggesting that military service is associated with increased uptake or persistence of smoking behaviours.
- **Gender-specific and reproductive health:** The evidence highlights increased risks for certain gender-specific conditions in ex-servicewomen compared to civilian women. Scottish cohort studies identified in the scoping review found a higher prevalence of ovarian and breast cancers among ex-servicewomen, particularly those born after 1960 or with longer service durations[94]. Qualitative data reveals ongoing challenges with gynaecological health, fertility and menopause, including delays in diagnosis and treatment, both during and after service. Some participants described misdiagnosed or untreated conditions that lead to long-term consequences, such as infertility.

2. Impact on daily life and well-being

- **Functional limitations:** Physical health conditions often have a pervasive impact on daily life, affecting personal care, household activities, employment and socialisation. Many women reported chronic pain, fatigue and reduced mobility, leading to dependence on family for care, inability to work full-time or the need for workplace adaptations. The financial burden of managing health (e.g. private therapies, home adaptations) was significant for some, with others relying on military pensions or charitable support.
- **Mental health intersection:** Women described how chronic pain, fatigue and loss of mobility contributed to depression, anxiety and social isolation. Experiences of medical trauma, loss of identity post-service and frustration with physical limitations were common. Indeed, many ex-servicewomen discussed how the highly active lifestyle they led in service influenced their preference for physical activity and sport-based socialisation, and their expectations of their physical health post-service.

94 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

3. Barriers to healthcare access

- **Transition from military to civilian care:** Many ex-servicewomen experienced difficulties transferring medical records upon leaving the military, resulting in delays, loss of information and gaps in care. Navigating the NHS system post-discharge was frequently described as complex and frustrating compared to the more streamlined military healthcare system.
- **Primary and secondary care challenges:** Ex-servicewomen experienced similar challenges in accessing NHS services as civilian woman. Although most GP surgeries were "veteran friendly", some women felt this status had little practical impact on their care. There was a widespread perception that NHS practitioners lacked understanding of military service and its health implications, and had limited awareness of female-specific needs (e.g. menopause, gynaecological issues).
- **Veteran-specific and alternative services:** While some women benefited from veteran-specific services (such as Op RESTORE or Veterans First Point), many encountered barriers including lack of awareness, eligibility confusion and long waits. Access to alternative therapies (e.g., physiotherapy, acupuncture) was highly valued but often limited by NHS provision and cost barriers in the private sector. Some ex-servicewomen reported positive experiences with private healthcare, but affordability was a major constraint.
- **Charity and peer support:** Charitable organisations provided practical support, advocacy and social engagement, but uptake was limited by lack of awareness, perceived stigma or the view that services were male-oriented or intended for those with combat experience. Peer support, sports and arts-based programmes were particularly valued for their positive impact on well-being but were not universally accessible.

4. Influence of military culture and gender

- **Help-seeking behaviours:** Military culture, with its emphasis on self-reliance and stigma around "going sick", continued to shape health behaviours post-service. Many ex-servicewomen delayed seeking help until conditions became severe, or felt their needs were less legitimate than those of male or combat veterans. Experiences of dismissive or unprofessional care during service, especially for female-specific health issues, created distrust and reluctance to access support later in life.
- **Gendered service legacy:** The legacy of serving in a male-dominated environment influenced expectations of healthcare and self-perceptions. Many women felt an enduring pressure to "prove themselves" physically, leading to overexertion and increased risk of injury. Post-service, some struggled with the loss of an active lifestyle, further impacting mental health and identity.

Conclusion

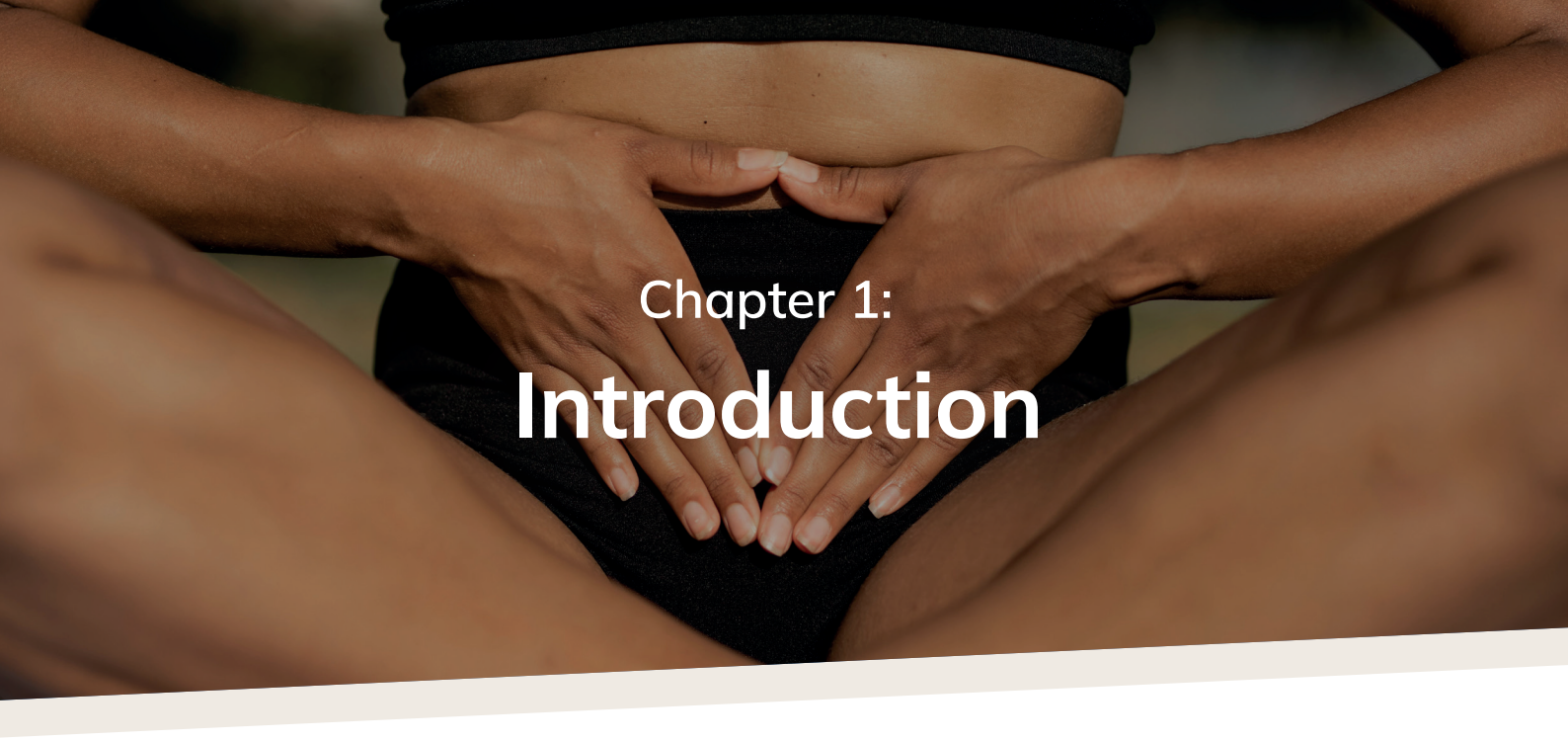
This report shows that UK ex-servicewomen have distinct and complex health needs shaped by gendered experiences during military service, many of which persist after transition to civilian life. While some healthcare experiences after service resemble those of civilian women, additional barriers remain. These include the influence of military culture, the absence of tailored services that reflect women's service histories, and persistent gaps in practitioner awareness of the unique health needs linked to military service. Despite recent efforts to improve understanding, such as veteran-friendly practice initiatives, significant knowledge gaps remain. These include a comprehensive understanding of the long-term health consequences of military service for women, reproductive health challenges, and the combined effects of gender, ethnicity, and service role on health outcomes. Addressing these gaps will require targeted research, evidence-based improvements in care pathways, and enhanced practitioner education to ensure equitable healthcare for all UK veterans.

Recommendations are focused on the following:

- **Raising awareness and improving communication:** Develop targeted campaigns to increase recognition of women's military service and the specific needs of ex-servicewomen, among both the public and healthcare professionals. Ensure clarity on the eligibility for veteran-specific health support.
- **Enhancing training for healthcare professionals:** Mandate and regularly update training for NHS and other health workers to improve understanding of ex-servicewomen's physical health needs, combat veteran stereotypes and ensure appropriate referral to veteran-specific services.
- **Support during transition from military to civilian life:** Improve the transfer of medical records, provide comprehensive health checks (including female-specific health needs), and offer tailored transition support to help ex-servicewomen adapt to civilian healthcare and maintain their health.
- **Addressing specific health risks and conditions:** Develop and implement protocols for managing higher rates of osteoarthritis, smoking and obesity among ex-servicewomen. These should include early screening, tailored interventions and integrated data systems to monitor and support long-term health.
- **Evaluating and improving services and research:** Conduct independent evaluations of veteran-focused healthcare initiatives, ensure consistent identification and recording of veteran status, and prioritise research into the unique health outcomes and experiences of ex-servicewomen, including access to compensation and support for comorbid conditions.

By addressing these recommendations, stakeholders can better meet the needs of this underserved population and ensure equitable access to high-quality healthcare for all UK ex-service personnel.

A full description of the recommendations can be found on page 67.



Chapter 1: Introduction

According to recent census data[95], women currently make up just 13.6% (251,430) of the former serviceperson population in England and Wales, and 12.0% (20,600) of those in Scotland[96 97]. As a result of their minority status, research and understanding of ex-servicewomen has been historically limited in the UK and internationally. Indeed, a 2019 literature review revealed that just 2.0% of international veteran research mentions women[98].

Analysis of the Census 2021 data[99] reveals that the majority of ex-service personnel in England and Wales report their health to be 'good' or 'very good' (64.4%), with rates of disability similar amongst ex-service personnel (32.1%)[100] compared to civilians (30.0%) living in England and Wales. Whilst Scottish Census data 2022[101] reported that the percentage of people reporting a disability or health condition was higher among veterans (43.2%) compared to non-veterans (26.6%), this data is not age-matched, and differences appear to be linked to the older nature of the veteran population. These datasets do not present health outcomes disaggregated by gender.

A comprehensive scoping review of the health and well-being needs of UK ex-servicewomen published in 2021[102] demonstrated the paucity of research available and notable gaps in our understanding of ex-servicewomen's physical health. The Defence Select Committee's inquiry report: 'Protecting those who protect us: Women in the Armed Forces from Recruitment to Civilian

95 Scotland's Census (2024) Scotland's Census 2022 – UK Armed Forces Veterans. Scotland's Census 2022 - UK Armed Forces veterans | Scotland's Census

96 The most recent Northern Irish Census did not ask about Armed Forces Background therefore we cannot accurately size the ex-servicewomen population in Northern Ireland.

97 Dodds, C. D., & Kiernan, M. D. (2019). Hidden veterans: A review of the literature on women veterans in contemporary society. Illness, Crisis & Loss, 27(4), 293-310.

98 Office for National Statistics (2023) Characteristics of UK Armed Forces veterans, England and Wales: Census 2021. Characteristics of UK Armed Forces veterans, England and Wales - Office for National Statistics

99 Office for National Statistics (2023) UK Armed Forces veterans, health and unpaid care, England and Wales: Census 2021. UK Armed Forces veterans, health and unpaid care, England and Wales - Office for National Statistics

100 Scottish Government (2024) Occasional Paper: Summary Characteristics of UK Armed Forces Veterans – Scotland's Census 2022. Occasional Paper: Summary Characteristics of UK Armed Forces Veterans - Scotland's Census 2022 - gov.scot

101 Godier-McBard, L., Gillin, N., & Fossey, M. (2021). We Also Served: The health and well-being of female veterans in the UK. https://www.centreformilitarywomensresearch.com/wp-content/uploads/2022/11/WeAlsoServed_Electronic.pdf

102 House of Commons Defence Committee (2021) Protecting those who protect us: Women in the Armed Forces from Recruitment to Civilian Life. https://committees.parliament.uk/publications/6959/documents/72771/default/

Life'[103] documents challenges that pose potential short- and long-term impacts on the health of current and former servicewomen, due to in-service policies that do not adequately consider or meet women's needs. This includes the impact of poor healthcare provision for managing menstruation, especially in austere environments; the impact of ill-fitting or unsuitable equipment and uniforms; and the impact of training not adapted to women's bodies. Moreover, Ministry of Defence (MoD) data suggests that women are at increased risk of musculoskeletal and overuse injuries during military training, and higher rates of medical discharges for servicewomen are noted[104]. The limited UK evidence base means we currently have little understanding of UK ex-servicewomen's physical health needs, including the potential long-term ramifications of the challenges outlined above, and gender differences in health outcomes.

In recent years, we have seen a welcome increase in research, both completed and ongoing, exploring the health and well-being of UK ex-servicewomen. However, there remains a dearth of information about the prevalence of different health conditions within the ex-servicewomen population, the impact on their day-to-day life, and their experiences of accessing physical health support. Furthermore, there are crucial gaps in our understanding of how the prevalence of different health conditions compares to ex-servicemen and civilian women.

To that end, this collaborative mixed-methods research project brings together analyses of existing quantitative datasets from the UK Biobank, the Defence Medical Welfare Service and NHS England's Op RESTORE (The Veterans Physical Health and Wellbeing Service, commissioned by NHS England and hosted by Imperial College Healthcare NHS Trust) with in-depth insight from qualitative interviews with ex-servicewomen, to gain an understanding of their physical health conditions, healthcare experiences and needs. Key aims of the project were to:

1. Identify the physical health conditions/illnesses/injuries reported by ex-servicewomen, compared to ex-servicemen and civilian women (where possible).
2. To understand the experiences of ex-servicewomen who have a current physical health condition, in relation to their military service, their day-to-day lives after service, and their access to support services.

During the project we worked alongside stakeholders (including ex-servicewomen and key representatives from government departments and support services) to develop aspects of the research design and data interpretation and to develop the recommendations (see Appendix 1 for further details).

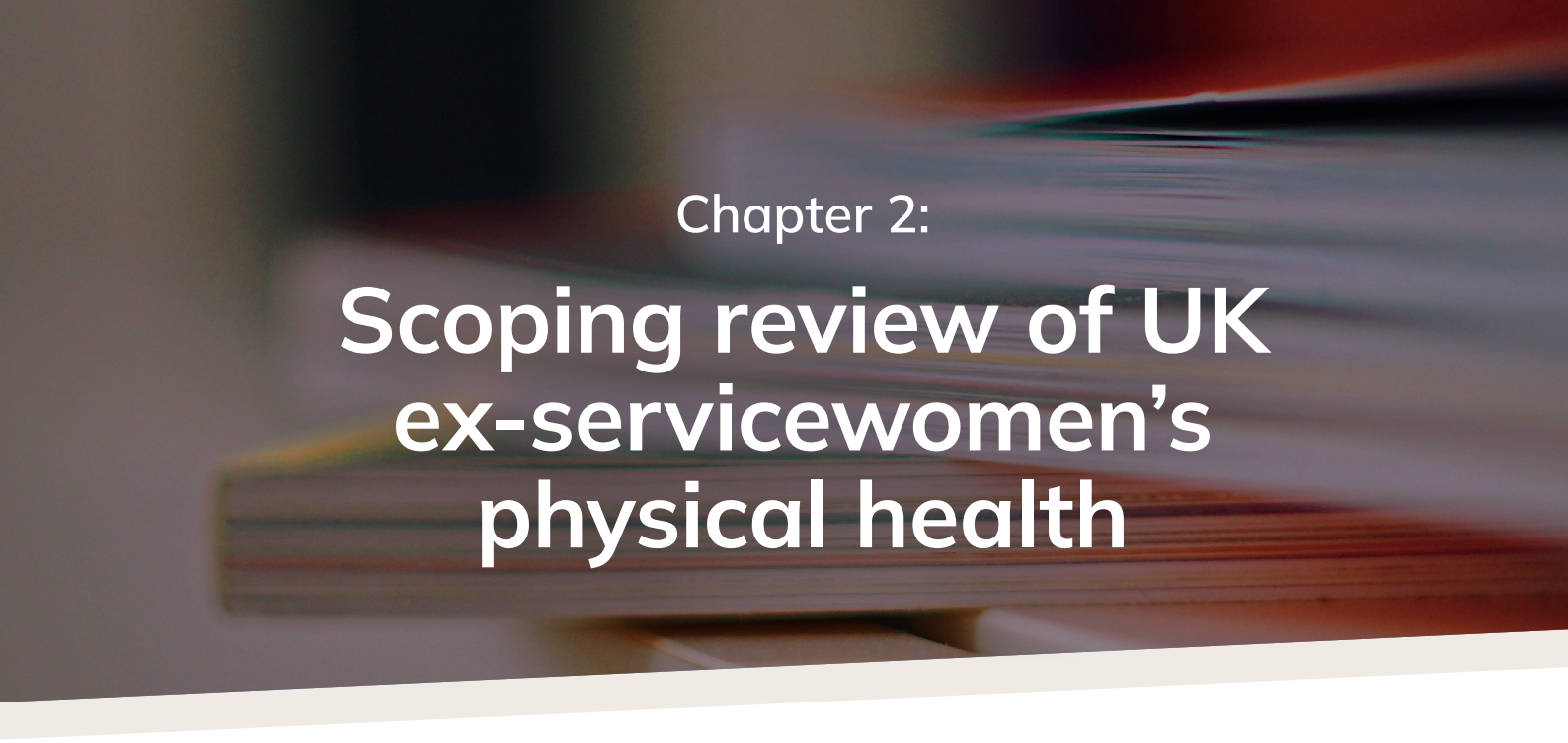
The rest of the report is structured in the following way:

- In Chapter 2, we report a scoping review of the existing UK literature focused on the physical health needs of ex-servicewomen.
- In Chapter 3, we report analyses of three existing datasets that include physical health outcomes of UK ex-servicewomen:

103 House of Commons Defence Committee (2021) Protecting those who protect us: Women in the Armed Forces from Recruitment to Civilian Life. https://committees.parliament.uk/publications/6959/documents/72771/default/

104 Ministry of Defence (2016). Interim Report on the Health Risks to Women in Ground Close Combat Roles. https://assets.publishing.service.gov.uk/media/5a80af3aed915d74e33fbd2a/20160706_ADR006101_Report_Women_in_Combat_WEB-FINAL.PDF

  - Data collected by the UK Biobank
  - Data collected by Defence Medical Welfare Service
  - Data collected by the Op RESTORE service
- In Chapter 4, we report the analysis of a new in-depth qualitative dataset, comprising interviews with 40 UK tri-service ex-servicewomen with physical health conditions that impact their day-to-day lives.
- Finally, in Chapter 5, we integrate the findings of these different data sources, and provide recommendations for research and service provision based on our findings.



Chapter 2:

Scoping review of UK ex-servicewomen's physical health

We conducted a comprehensive scoping review of the existing published literature focused on UK ex-servicewomen's physical health needs, outcomes and healthcare experiences after leaving military service. Twenty-five relevant reports and articles were identified during the literature search. They include 22 peer-reviewed papers, two reports, and one PhD thesis, published between 2000 and 2023. Only five papers have a specific focus on examining gender differences in ex-serviceperson's physical health (two papers) or exclusively report on ex-servicewomen's physical health needs (three papers). Most of the papers focused on the physical health outcomes of UK ex-service personnel more broadly, reporting gender/sex disaggregated findings (16 papers), and the remainder explored potentially gendered challenges and therein considered health outcomes for ex-servicewomen (four papers).

Many of these publications come from several key cohort-based studies, and few of the papers specifically focused on gender differences in physical health outcomes. Furthermore, the literature identified is both broad in its focus and lacking in depth and replication; in other words, there are multiple different physical health conditions and concerns explored and methodologies used, but there is a lack of consistency across papers. On this basis, we have grouped findings by presenting findings from the same or similar cohorts/studies, rather than by physical health condition or type. The cohorts covered are as follows:

1. The Scottish Veterans Health Study cohort
2. Gulf War veteran cohorts
3. The Women's Royal Army Corps study
4. SUSTAIN study health outcomes

Following this, we provide a synthesis of qualitative findings from three studies of ex-servicewomen regarding their physical health needs and experiences.

2.1 The Scottish Veterans Health Study cohort

The following section presents the findings from the Scottish Veterans Health Study[105] and its follow-on study Trends in Scottish Veterans Health[106]. Details on these studies and their methodology can be found in Appendix 3.

Results from these studies are split into the differences in physical health outcomes for 1) ex-servicewomen vs ex-servicemen, and 2) ex-servicewomen vs their civilian women counterparts.

2.1.1 Differences in health outcomes between ex-servicewomen and ex-servicemen

When comparing ex-service personnel's physical health outcomes by gender in the initial Scottish Veterans Health Study[107] ex-servicewomen were significantly less likely to be diagnosed with non-melanoma skin cancer, alcoholic liver disease and acute myocardial infarction (MI) compared to ex-servicemen. However, ex-servicewomen were more likely to be diagnosed with multiple sclerosis than ex-servicemen, replicating trends within civilian populations where women are more frequently diagnosed than men. A non-significant reduction in diabetes risk was found amongst ex-servicewomen compared to ex-servicemen[108]. Finally, no significant gender difference was found when examining the frequency of hepatitis B or chronic obstructive pulmonary disease (COPD)[109].

105 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2014. Acute myocardial infarction in Scottish military veterans: A retrospective cohort study of 57,000 veterans and 173,000 matched non-veterans. American Journal of Epidemiology, 179(12), pp.1434–1441.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2015. Motor neurone disease and military service: Evidence from the Scottish Veterans Health Study. Occupational and Environmental Medicine, 72(12), pp.877–879.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2016. Early adoption of screening and the changing pattern of cervical cancer in UK military women: Evidence from the Scottish Veterans Health Study. Journal of the Royal Army Medical Corps, 162(5), pp.379–382.

Bergman, B.P., Mackay, D.F., Morrison, D. and Pell, J.P., 2016. Smoking-related cancer in military veterans: Retrospective cohort study of 57,000 veterans and 173,000 matched non-veterans. BMC Cancer, 16, pp.311–315.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2017. Lymphohaematopoietic malignancies in Scottish military veterans: Retrospective cohort study of 57,000 veterans and 173,000 non-veterans. Cancer Epidemiology, 47, pp.100–105.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2018. Chronic obstructive pulmonary disease in Scottish military veterans. Journal of the Royal Army Medical Corps, 164, pp.25–29.

Bergman, B.P., Macdonald, E.B., Mackay, D.F. and Pell, J.P., 2019. Healthy workers or less healthy leavers? Mortality in military veterans. Occupational Medicine (London), 69, pp.570–576.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2019. Peripheral arterial disease in Scottish military veterans: A retrospective cohort study of 57,000 veterans and 173,000 matched non-veterans. Journal of Public Health (Oxford, England), 41(1), pp.E9–E15.

106 Bergman, B.P., Mackay, D.F. and Pell, J.P., 2021. Trends in cardiovascular disease in Scottish military veterans: a retrospective cohort study. BMJ open, 11(7), p.e044465.

Bergman, B.P., Mackay, D. and Pell, J.P., 2022a. Type 2 diabetes in Scottish military veterans: a retrospective cohort study. BMJ open, 12(2), p.e057431.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2022b. Postservice lower limb amputation in Scottish military veterans. BMJ Mil Health, 168(1), pp.25–28.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2023a. Dementia in Scottish military veterans: early evidence from a retrospective cohort study. Psychological Medicine, 53(3), pp.1015–1020.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2023b. Hip and knee replacement as a proxy measure for lower limb osteoarthritis in Scottish military veterans. BMJ Mil Health, 169(4), pp.321–326

107 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

108 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

109 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

Ex-servicewomen were found to be more likely to undergo a hip replacement than ex-servicemen, a gender difference that was also evident in the civilian population in this study. However, whilst civilian women were found to be more likely to undergo a knee replacement than civilian men, this gender difference was not identified in the ex-service personnel population. The authors note this is 'likely to be a consequence of the relatively small number of women veterans who have undergone this procedure'[110].

2.1.2 Differences in health outcomes between ex-servicewomen and civilian women

The initial Scottish Veterans Health Study found there to be no significant difference when comparing Scottish ex-servicewomen and their civilian counterparts in the majority of physical health conditions investigated[111]. However, the authors caution that the small numbers of ex-servicewomen with some of these conditions may limit the statistical power to detect differences.

However, subgroup analyses for ovarian and breast cancer prevalence revealed some notable differences between Scottish ex-servicewomen and their civilian counterparts[112]. Ex-servicewomen who had served for between 13 and 16 years had a significantly higher breast cancer prevalence than their civilian counterparts. Furthermore, looking at ovarian cancer, whilst there was no significant difference between Scottish ex-service and civilian women born before 1960, ex-servicewomen born after 1960 were significantly more likely to be diagnosed with ovarian cancer than civilian women.

Building upon these initial findings, Bergman et al [113] in the Trends in Scottish Veterans Health study found an increased risk for ex-servicewomen compared to civilian women's dementia diagnoses at the age of 50.

2.1.3 Key findings

- Scottish ex-servicewomen appear to be at reduced risk of non-melanoma skin cancer, alcoholic liver disease, acute myocardial infarction and diabetes compared to Scottish ex-servicemen, reflecting gender patterns seen in the general population.
- Scottish ex-servicewomen appear to be at increased risk of multiple sclerosis and hip replacements, compared to Scottish ex-servicemen, reflecting gender patterns seen in the general population.

110 Bergman, B.P., Mackay, D.F. and Pell, J.P., 2023b. Hip and knee replacement as a proxy measure for lower limb osteoarthritis in Scottish military veterans. BMJ Mil Health, 169(4), pp.321–326

111 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2015. Motor neurone disease and military service: Evidence from the Scottish Veterans Health Study. Occupational and Environmental Medicine, 72(12), pp.877–879.

Bergman, B.P., Macdonald, E.B., Mackay, D.F. and Pell, J.P., 2019. Healthy workers or less healthy leavers? Mortality in military veterans. Occupational Medicine (London), 69, pp.570–576.

Bergman, B.P., Mackay, D.F. and Pell, J.P., 2019. Peripheral arterial disease in Scottish military veterans: A retrospective cohort study of 57,000 veterans and 173,000 matched non-veterans. Journal of Public Health (Oxford, England), 41(1), pp.E9–E15.

112 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

113 Bergman, B.P., Mackay, D.F. and Pell, J.P., 2023a. Dementia in Scottish military veterans: early evidence from a retrospective cohort study. Psychological Medicine, 53(3), pp.1015–1020.

- An increased occurrence of ovarian and breast cancer is found in specific cohorts of Scottish ex-servicewomen compared to Scottish civilian women.
- Ex-servicewomen over the age of 50 appear to be at increased risk of dementia compared to Scottish civilian women.

2.2 1991 Gulf War veteran cohorts

Five studies explored the health outcomes of service personnel deployed in the Gulf region during the Gulf War and reported gender disaggregated outcomes. Two of these studies report data collected by researchers at the King's Centre for Military Health Research (KCMHR, then the Gulf War Illnesses Research Unit)[114]. A further two studies explored mortality and cancer rates[115]. A final study explored reproductive health outcomes[116]. These studies give us insight into both the potential unique health outcomes of women who were deployed as part of the Gulf War, and gender differences in Gulf War veterans. Details on these studies and their methodologies can be found in Appendix 3.

Results from these studies are split into the differences in physical health outcomes for 1) ex-servicewomen vs ex-servicemen deployed to the Gulf War, and 2) ex-servicewomen deployed to the Gulf War vs ex-servicewomen not deployed to the Gulf War.

2.2.1 Differences in health outcomes between ex-servicewomen and ex-servicemen deployed to the 1991 Gulf War

Eighteen out of the 50 health-related symptoms had significant gender difference. Ex-servicewomen were significantly more likely to report experiencing headaches, fatigue, constipation, stomach cramps, frequent urination and nausea than ex-servicemen[117]. They were less likely to report joint stiffness, itchy or painful eyes, wheezing, being unable to breathe deeply enough, night sweats, chest pains, increased sensitivity to light, ringing in the ears, persistent cough, loss or decrease in appetite and shaking. Furthermore, among the 39 medical disorders, the authors confirmed expected gender differences between ex-servicemen and women when examining yeast infection/candidiasis, hair loss and hearing loss. Additionally, three further gender differences are noted, with women more likely to report reduced fertility and fibrositis/fibromyalgia and men more likely to report sexual problems.

114 Reid, S., Hotopf, M., Hull, L., Ismail, K., Unwin, C., & Wessely, S. 2001. Multiple chemical sensitivity and chronic fatigue syndrome in British Gulf War veterans. American journal of epidemiology, 153(6), 604–609.

Unwin, C., Hotopf, M., Hull, L., Ismail, K., David, A., & Wessely, S. 2002. Women in the Persian Gulf: lack of gender differences in long-term health effects of service in United Kingdom Armed Forces in the 1991 Persian Gulf War. Military medicine, 167(5), 406–413.

115 Macfarlane, G. J., Thomas, E., & Cherry, N. 2000. Mortality among UK Gulf War veterans. Lancet (London, England), 356(9223), 17–21.

Macfarlane, G. J., Biggs, A. M., Maconochie, N., Hotopf, M., Doyle, P., & Lunt, M. 2003. Incidence of cancer among UK Gulf War veterans: cohort study. BMJ (Clinical research ed.), 327(7428), 1373.

116 Doyle, P., Maconochie, N., Davies, G., Maconochie, I., Pelerin, M., Prior, S., & Lewis, S. 2004. Miscarriage, stillbirth and congenital malformation in the offspring of UK veterans of the first Gulf War. International journal of epidemiology, 33(1), 74–86.

117 Unwin, C., Hotopf, M., Hull, L., Ismail, K., David, A., & Wessely, S. 2002. Women in the Persian Gulf: lack of gender differences in long-term health effects of service in United Kingdom Armed Forces in the 1991 Persian Gulf War. Military medicine, 167(5), 406–413.

Reid et al (2001)[118] found no significant gender differences when examining the prevalence of multiple chemical sensitivities and chronic fatigue syndrome amongst Gulf War veterans. This differs from gender differences seen within civilian cohorts, where chronic fatigue syndrome is typically more common for women. They caution, however, that this may be due to the small number of women in the sample.

Macfarlane et al (2003) found that there was no significant difference in cancer rates between women and men who had been deployed in the Gulf War.

2.2.2 Differences in health outcomes in ex-servicewomen deployed to the 1991 Gulf War and ex-servicewomen not deployed to the 1991 Gulf War

Macfarlane et al (2000; 2003) found that there was no significant difference in cancer or mortality rates between ex-servicewomen who had been deployed in the 1991 Gulf War, and ex-servicewomen who had not been deployed in the 1991 Gulf War.

Doyle et al (2004) found no significant difference in miscarriage between ex-servicewomen who had been deployed in the 1991 Gulf War, and ex-servicewomen who had not been deployed in the 1991 Gulf War. Analysis of infant malformation prevalence was limited and analysis of stillbirth prevalence not possible due to small numbers of women reporting these outcomes.

2.2.3 Key findings

- Gender differences were highlighted across various symptoms and health conditions in ex-service personnel who served in the Gulf War, the majority of which reflect gender differences in the general population. A notable exception was chronic fatigue syndrome, for which no gender difference was identified in ex-service personnel, contrary to an increased risk in women in the general population.
- No significant differences in cancer rates, mortality rates or reproductive health were identified between ex-servicewomen deployed to the 1991 Gulf War and ex-servicewomen not deployed to the 1991 Gulf War.

2.3 The Women's Royal Army Corps study

The following findings are based on data collected via a cross-sectional survey of 750 UK ex-Army servicewomen, recruited from the Women's Royal Army Corps (WRAC) Association membership [119]. Details on this study and its methodology can be found in Appendix 3.

118 Reid, S., Hotopf, M., Hull, L., Ismail, K., Unwin, C., & Wessely, S. 2001. Multiple chemical sensitivity and chronic fatigue syndrome in British Gulf War veterans. American journal of epidemiology, 153(6), 604–609.

119 Baumann, J., Williamson, C. and Murphy, D., 2022. Exploring the impact of gender-specific challenges during and after military service on female UK Veterans. Journal of Military, Veteran and Family Health, 8(2), pp.72-81.

Williamson, C., Baumann, J. and Murphy, D., 2022. Adverse childhood experiences, military adversities, and adult health outcomes among female Veterans in the UK. Journal of Military, Veteran and Family Health, 8(2), pp.62-71.

Williamson, C., Baumann, J. and Murphy, D., 2023. Military families: the impacts of having a first child during service on military mothers. BMJ Mil Health, 169(5), pp.403-407.

This study gives us insight into women's broad physical health needs and how these relate to their military service and other life events. Ex-servicewomen in this sample with high scores (i.e. top tertile) of a measure of Adverse Childhood Experiences (ACEs)[120] were more likely to experience physical health conditions/disorders than those with low (bottom tertile) scores[121]. Those who reported physical health conditions/disorders were more likely to report military challenges and adversities (including emotional bullying, physical assault, sexual harassment or sexual assault in-service)[122]. No significant association was found between physical health challenges and ex-servicewomen's experience of differing post-service conditions/disorders compared to male peers (such as 'Felt that transition to civilian life was harder' or 'Found it harder to access NHS/charities for physical health needs' as compared to ex-servicemen)[123]. Finally, one paper focused specifically on the impact of having a first child during military service[124]. Whilst initial analysis showed an association between some health and well-being outcomes and having a first child in service, this association was not significant after adjusting for age, early service leaver status and reason for leaving the military.

2.3.1 Key findings

- Ex-servicewomen who served in the WRAC were more likely to report physical health conditions/disorders if they reported adverse childhood experiences and adversity during military service (i.e. bullying, physical assault, sexual harassment or sexual assault).
- No association was found between having a first child during military service and self-reported health conditions/disorders.

2.4 SUSTAIN study health outcomes

The SUSTAIN study, conducted by KCMHR[125], explored the following datasets regarding ex-servicewomen's physical health outcomes (amongst other variables), comparing them with ex-servicemen and civilian women:

a) The KCMHR Health and Wellbeing Cohort study (2022-2023) of individuals who served in the Iraq and Afghanistan era of conflict. Analysis included those who had been discharged from serving in the Regular Armed Forces.

b) UK Biobank, a large-scale biomedical database containing anonymised lifestyle and health data from 500,000 UK participants aged 40–69, recruited between 2006 and 2010.

120 Defined as highly stressful events or situations that occur during childhood and adolescence.

121 Williamson, C., Baumann, J. and Murphy, D., 2022. Adverse childhood experiences, military adversities, and adult health outcomes among female Veterans in the UK. Journal of Military, Veteran and Family Health, 8(2), pp.62-71.

122 Baumann, J., Williamson, C. and Murphy, D., 2022. Exploring the impact of gender-specific challenges during and after military service on female UK Veterans. Journal of Military, Veteran and Family Health, 8(2), pp.72-81.

123 Baumann, J., Williamson, C. and Murphy, D., 2022. Exploring the impact of gender-specific challenges during and after military service on female UK Veterans. Journal of Military, Veteran and Family Health, 8(2), pp.72-81.

124 Williamson, C., Baumann, J. and Murphy, D., 2023. Military families: the impacts of having a first child during service on military mothers. BMJ Mil Health, 169(5), pp.403-407.

125 Sharp, M-L., Croak, B., Khan, R., Smith, A., Langston, V., Rafferty, L., Greenberg, N., Fear, N. & Stevelink, S. (2025). SUSTAIN: Identifying and examining the barriers and facilitators to ex-servicewomen making a successful and sustainable transition to civilian life in the UK. https://kcmhr.org/pdf/Sustain_ExServiceWomen_Transition_Report.pdf.

2.4.1 Differences in health outcomes between ex-servicewomen and ex-servicemen

The KCMHR Health and Wellbeing Cohort findings indicated that ex-servicewomen were more likely than ex-servicemen to cite health problems and pregnancy as reasons for leaving military service. However, the only difference in physical health outcomes identified was a lower likelihood of diabetes and high blood pressure in ex-servicewomen compared to ex-servicemen. Analysis of somatic symptoms suggested that the physical presentation of psychological distress was more common in ex-servicewomen than ex-servicemen.

The UK Biobank findings indicated no differences in musculoskeletal conditions or back problems between ex-servicewomen and ex-servicemen. However, osteoarthritis was found to be more common in ex-servicewomen than ex-servicemen. Additionally, whilst self-reported health was found to be lower in ex-servicewomen compared to men, this was accounted for when controlling for smoking and obesity.

2.4.2 Differences in health outcomes between ex-servicewomen and civilian women

The UK Biobank data findings indicated that ex-servicewomen had poorer self-reported general health and were more likely to report osteoarthritis compared to civilian women. No differences were identified in musculoskeletal conditions or back problems between ex-servicewomen and civilian women.

2.4.3 Key findings

- Ex-servicewomen were more likely to report osteoarthritis, and less likely to have diabetes and high blood pressure, than ex-servicemen.
- Ex-servicewomen were more likely to report poorer general health and osteoarthritis than civilian women.

2.5 Qualitative findings

Three qualitative studies of UK ex-servicewomen's lived experience of support provision examined, amongst other things, their physical health needs and experiences of accessing care. One study was conducted by the Centre for Military Women's Research (CMWR)[126], and the other two by the King's Centre for Military Health Research (KCMHR)[127], Two of the samples were relatively large in qualitative terms, comprising 85 and 31 tri-service ex-servicewomen respectively, from across the devolved nations of the UK and with a wide range of lengths of service and eras of service.

126 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. 2023. 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

127 Sharp, M-L., Croak, B., Khan, R., Smith, A., Langston, V., Rafferty, L., Greenberg, N., Fear, N. & Stevelink, S. (2025). SUSTAIN: Identifying and examining the barriers and facilitators to ex-servicewomen making a successful and sustainable transition to civilian life in the UK. https://kcmhr.org/pdf/Sustain_ExServiceWomen_Transition_Report.pdf

The third was a sample of eight ex-servicewomen with visual impairment[128].

The CMWR qualitative sample of 85 ex-servicewomen[129] reported physical health issues that they associated with 'wear and tear' from physical activity during military service. This 'wear and tear' was related to unsuitable equipment designed for male bodies, training perceived to be aligned to men's physical abilities, and specific injuries acquired during service (e.g. back injuries associated with heavy lifting, or hearing loss associated with loud environments). Some participants were medically discharged for reasons related to their physical health. However, other ex-servicewomen shared how their physical health needs were simply age-related, rather than related to military service. Women in the sample described how their physical health needs impacted their ability to engage in work and leisure activities, including exercise, with some experiencing subsequent mental health challenges related to medical trauma or physical limitations.

The KCMHR SUSTAIN report[130] highlights how ex-servicewomen's physical health needs became apparent later in civilian life, with some reporting that they continued to work whilst injured during military service. Ex-servicewomen reported minimising their physical health needs during service, leading to long-term health difficulties in their civilian life.

Visually impaired ex-servicewomen in Stevelink and Fear's[131] study reported that loss of vision led participants to question how they would manage their lives going forwards, with visual impairment negatively impacting their mental health, identity, and ability to maintain employment for some. The study emphasises the importance of social support and developing coping strategies to enable the women to rebuild their lives, including relearning day-to-day skills and using low vision aids to support them to become independent again.

2.5.1 Key findings

- Ex-servicewomen reported physical health conditions related to both specific injuries obtained in service and more gradual 'wear and tear' related to training and equipment not designed for women's bodies.
- Ex-servicewomen reported minimising their physical health problems during service, leading to longer-term health problems once they had left service.
- Physical health issues impacted some women's day-to-day lives, and for some this led to mental health challenges.
- Social support and coping strategies were important in maintaining or regaining independence.

128 Stevelink, S. & Fear, N. (2016). Psychosocial impact of visual impairment and coping strategies in female ex-Service personnel. BMJ Military Health,162:129-133. https://militaryhealth.bmj.com/content/jramc/162/2/129.full.pdf?casa_token=yZIs8Wp9ZYMAAAAA:8W6pmuixUWN2koDTYe5IWdE5tmR2E8JKH8p859setkzBKXSYAQw-UtCVjzwWDFpnu2UaduZTagE

129 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. 2023. 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

130 Sharp, M-L., Croak, B., Khan, R., Smith, A., Langston, V., Rafferty, L., Greenberg, N., Fear, N. & Stevelink, S. (2025). SUSTAIN: Identifying and examining the barriers and facilitators to ex-servicewomen making a successful and sustainable transition to civilian life in the UK. https://kcmhr.org/pdf/Sustain_ExServiceWomen_Transition_Report.pdf

131 Stevelink, S. & Fear, N. (2016). Psychosocial impact of visual impairment and coping strategies in female ex-Service personnel. BMJ Military Health,162:129-133. https://militaryhealth.bmj.com/content/jramc/162/2/129.full.pdf?casa_token=yZIs8Wp9ZYMAAAAA:8W6pmuixUWN2koDTYe5IWdE5tmR2E8JKH8p859setkzBKXSYAQw-UtCVjzwWDFpnu2UaduZTagE

2.6 Limitations of the evidence base

The current UK evidence base has several limitations. Much of the published literature focuses on specific cohorts of UK ex-servicewomen (i.e. Scottish ex-servicewomen, women who served in the 1991 Gulf War, women who served in the WRAC). This makes generalisation to the broader UK ex-servicewomen population difficult.

Additionally, several of the studies that utilise large quantitative datasets reported challenges related to the small numbers of cases of certain conditions in women within their samples, noting that this might compromise the ability to detect gender differences, and warning against overinterpretation of results.

Only three studies employed a qualitative methodology[132]. As such, it would be useful for future research to employ qualitative methods to explore how ex-servicewomen's lives are impacted by their health needs, and their experiences of accessing or receiving healthcare.

There remain gaps in our understanding of ex-servicewomen's physical health and how this may differ from their ex-servicemen and civilian women counterparts. The reviewed studies focused on a broad array of different health conditions and symptoms, with little consistency in findings across studies. One notable gap is reproductive or female-specific health, and how or if this may differ from that of civilian women. Whilst this was the focus of one study conducted over 20 years ago, that study focused on a 1991 Gulf War veteran cohort and on differences within subgroups of this cohort[133].

The current evidence base does not provide insight into differences in ex-servicewomen's long-term health outcome by service branch or occupational role. This is an avenue for future research, as evidence suggests that training and equipment designed for male bodies may negatively impact ex-servicewomen's health, and training and use of equipment are likely to vary by role. Finally, ethnicity and sexuality are salient factors to understanding a population's health, so future research could usefully explore the intersections between military service, gender, ethnicity and sexuality in relation to ex-servicewomen's health outcomes.

132 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. 2023. 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Sharp, M-L., Croak, B., Khan, R., Smith, A., Langston, V., Rafferty, L., Greenberg, N., Fear, N. & Stevelink, S. (2025). SUSTAIN: Identifying and examining the barriers and facilitators to ex-servicewomen making a successful and sustainable transition to civilian life in the UK. https://kcmhr.org/pdf/Sustain_ExServiceWomen_Transition_Report.pdf

Stevelink, S. & Fear, N. (2016). Psychosocial impact of visual impairment and coping strategies in female ex-Service personnel. BMJ Military Health,162:129-133. https://militaryhealth.bmj.com/content/jramc/162/2/129.full.pdf?casa_token=yZIs8Wp9ZYMAAAAA:8W6pmuixUWN2koDTYe5IWdE5tmR2E8JKH8p859setkzBKXSYAQw-UtCVjzwWDFpnu2UaduZTagE

133 Doyle, P., Maconochie, N., Davies, G., Maconochie, I., Pelerin, M., Prior, S., & Lewis, S. 2004. Miscarriage, stillbirth and congenital malformation in the offspring of UK veterans of the first Gulf War. International journal of epidemiology, 33(1), 74–86.

Chapter 3:

Analysis of existing datasets

3.1 Overview

The following sections outline analyses of existing UK datasets aimed at identifying the physical health needs reported by ex-servicewomen, compared to ex-servicemen and civilian women (where possible).

The datasets analysed are as follows:

1. The UK Biobank
2. Defence Medical Welfare Service beneficiary database
3. Op RESTORE beneficiary database

Each section provides background to the dataset, the methods used to analyse the data and the key findings.

3.2 The UK Biobank

3.2.1 Background

The UK Biobank is a large-scale prospective cohort study of approximately 500,000 individuals aged 40-69 years residing in England, Scotland and Wales. Recruitment took place between 2006 and 2010, with extensive baseline data collected on sociodemographic, health, lifestyle and environmental factors. The study is enhanced through linkage to external data sources, such as National Health Service records and national registries. Of the 120,271 participants who provided occupational history, 3,268 were identified as veterans (2,722 males and 546 females)[134].

134 Identification of veteran status in the UK Biobank sample is outlined in Appendix 3.

3.2.2 Study sample and population

The UK Biobank is a large-scale prospective cohort study of 500,000 NHS-registered individuals from England, Scotland and Wales[135] [136]. Individuals aged 40–69 years were enrolled between 2006 and 2010 from 23 assessment centres. At baseline, participants completed touchscreen questionnaires and computer-assisted interviews and provided physical measurements and biological samples, which were linked to inpatient hospital records and mortality registries. Following baseline, participants could take part in follow-up modules. For our analysis, we used baseline data, occupational history and inpatient records to examine physical health conditions. Ethical approval for using UK Biobank was provided by the Northwest Multi-centre Research Ethics Committee (MREC) as a Research Tissue Bank (RTB).

Because veteran status was derived from occupational history, we restricted our sample to individuals who completed the occupational module of the UK Biobank, administered in 2015 (n = 120,271). Historical and current occupations were coded using the 2010 Standard Occupational Classification (SOC) codes[137]. Ex-service personnel were identified using SOC codes for Non-Commissioned Officers and Other Ranks (3311) and Officers (1171), indicating those who had served in the UK Armed Forces and had since left. We excluded current service members (n=67) based on SOC codes and service end dates. The final sample included 3,268 ex-service personnel (n=2,722 males and n=546 females). Among female civilians who responded to the occupational module, the sample size was n=66,305.

Measures

We examined physical health comorbidities identified from the literature and clinical expertise as potentially affecting male and female ex-service personnel differently. We examined the following eight categories and corresponding chronic conditions:

1. Neurological: migraine, fibromyalgia
2. Digestive: irritable bowel syndrome, inflammatory bowel disease
3. Respiratory: asthma, chronic obstructive pulmonary disease (COPD)
4. Endocrine: diabetes, thyroid disorders
5. Cardiovascular: coronary artery disease, hypertension
6. Musculoskeletal: rheumatoid arthritis, back problems, osteoarthritis
7. Liver: cirrhosis
8. Hearing-related: tinnitus, hearing aid use, self-reported hearing difficulties

Physical health conditions were identified using baseline data obtained through self-report

135 Sudlow C, Gallacher J, Allen N, et al. UK Biobank: an open access resource for identifying the causes of a wide range of complex diseases of middle and old age. PLoS Med. 2015;12(3):e1001779

136 UK Biobank. UK Biobank: protocol for a large-scale prospective epidemiological resource (Protocol No. UKBB-PROT-09-06, Main Phase). Published 2007. https://www.ukbiobank.ac.uk/wp-content/uploads/2025/01/Main-study-protocol.pdf

137 Office for National Statistics. SOC2010 volume 1: structure and descriptions of unit groups. Published 2010. Accessed [September 2024]. https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc

questionnaires and nurse-led interviews, as well as hospital inpatient records coded using the International Classification of Diseases, 10th Revision (ICD-10)[138].

We also adjusted for Body Mass Index (BMI) and smoking status, given their established associations with the development and progression of chronic conditions. BMI was calculated from height and weight measurements collected at baseline and categorised as underweight (<18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²) or obese (≥30 kg/m²). Smoking status was self-reported and classified as never, former or current smoker.

Demographic variables included age at baseline, sex, ethnicity (grouped as White/White British vs Other), and highest educational attainment (degree, A-levels, O-levels/GCSEs or other). Area-level deprivation was assessed using the 2010 English Indices of Deprivation, a composite metric incorporating income, employment, health, education and environmental factors.

Among ex-service personnel, length of military service was determined based on start and end dates from Armed Forces SOC codes. Time since leaving service was calculated as the time between their final military role and the baseline assessment date.

Analysis

We examined ex-servicewomen's health in relation to both their ex-servicemen and female civilian counterparts. We conducted two parallel analyses using multivariable logistic regression to examine whether ex-servicewomen had higher odds of reporting physical health conditions of interest compared to (1) ex-servicemen and (2) female civilians. We controlled for age, sex, race (White vs Other), educational status (degree, A-levels vs Other), and deprivation index. For the veteran-only sample, we also included time in service. We further adjusted for BMI and smoking status, to account for their specific contribution to any observed health differences.

3.2.3 Key findings

Group characteristics (ex-servicewomen vs ex-servicemen, and ex-servicewomen vs civilian women) and the prevalence of physical health conditions are outlined in Table A.3 in Appendix 4. Unadjusted, partially-adjusted (adjusted for age, race (White vs Other), education (degree, A-levels vs Other), deprivation index and time in service) and fully-adjusted (further adjusted for BMI and smoking status) odds ratios for each physical health condition are provided in Tables A.4 and A.5 in Appendix 4. The odds ratios and confidence intervals for each comparison are provided in Figures 1 and 2 below.

In comparison to ex-servicemen, ex-servicewomen show:

- Higher levels of migraine (6.8% vs 2.4%), irritable bowel syndrome (3.1% vs 1.5%), thyroid disorders (8.8% vs 2.5%) and osteoarthritis (21.1% vs 17.5%).
- Lower levels of diabetes (3.5% vs 8.3%), cardiovascular conditions (hypertension: 19.8% vs 34.3%; coronary artery disease: 5.1% vs 15.1%) and hearing difficulties.

138 World Health Organization. International classification of diseases, 10th revision (ICD-10). 2019 edition. Accessed September 2024. https://icd.who.int/browse10/2019/en

- A lower prevalence of ex-servicewomen were overweight (BMI 25.0–29.9) compared to ex-servicemen (34.1% vs. 51.5%), while the prevalence of obesity (BMI ≥30) was similar between the two groups (29.7% vs. 31.1%).
- A lower prevalence of current (8.4% vs. 10.6%) and former smoking (37.2% vs 52.1%).

When adjusting for demographics, BMI and smoking status, ex-servicewomen had:

- Significantly higher odds of migraine (aOR 2.63, 95% CI: 1.66-4.19), thyroid disorders (aOR 4.42, 95% CI: 2.83-6.89) and osteoarthritis (aOR 1.61, 95% CI: 1.25-2.08) compared to ex-servicemen.
- Significantly lower odds of diabetes (aOR 0.46, 95% CI: 0.28-0.78), cardiovascular conditions (hypertension: aOR 0.53, 95% CI: 0.41-0.68; coronary artery disease: aOR 0.39, 95% CI: 0.26-0.59) and all hearing-related difficulties compared to ex-servicemen.

There were no significant differences between ex-servicewomen and men relating to their self-reported general health, digestive disorders, respiratory conditions or cirrhosis.

In comparison to civilian women, ex-servicewomen show:

- Higher levels of COPD (2.6% vs 1.2%), any musculoskeletal conditions (48.5% vs 43.4%) and osteoarthritis (21.1% vs. 17.4%).

When adjusting for demographics, BMI and smoking status, ex-servicewomen compared to civilian women had:

- Higher odds of COPD (aOR 1.79, 95% CI: 1.04-3.08), but lower odds of hypertension (aOR 0.74, 95% CI: 0.59-0.93).

There were no significant differences between ex-servicewomen and civilian women related to their odds of digestive disorders, endocrine disorders, cardiovascular diseases, cirrhosis or hearing-related conditions.

3.2.4 Key conclusions

Patterns of physical health conditions among ex-servicewomen and men (aged 40-69 years) were generally consistent with known sex-based differences found in the general population[139] [140]. To isolate the effect of military service, we examined health outcomes among women by veteran status. Ex-servicewomen had significantly higher odds of COPD when compared to civilian women, even after accounting for smoking status and BMI. Hypertension risk was lower among ex-servicewomen, with no significant differences in digestive, endocrine, cardiovascular, cirrhosis or musculoskeletal disorders.

Both ex-servicewomen and men had higher prevalence rates of obesity and current or former smoking status compared to civilian women. Our findings suggest that sex-based, military-specific, and post-service environmental and behavioural factors influence long-term physical health.

139 Bergman BP, Macdonald EB, Mackay DF, Pell JP. Healthy workers or less healthy leavers? Mortality in military veterans. Occup Med (Lond). 2019;69(8-9):570-576.

140 Hall AL, Sweet J, Tweel M, MacLean MB. Comparing negative health indicators in male and female veterans with the Canadian general population. BMJ Mil Health. 2022;168(1):82-87.

Figure 1. Physical health conditions of ex-servicewomen compared to civilian women

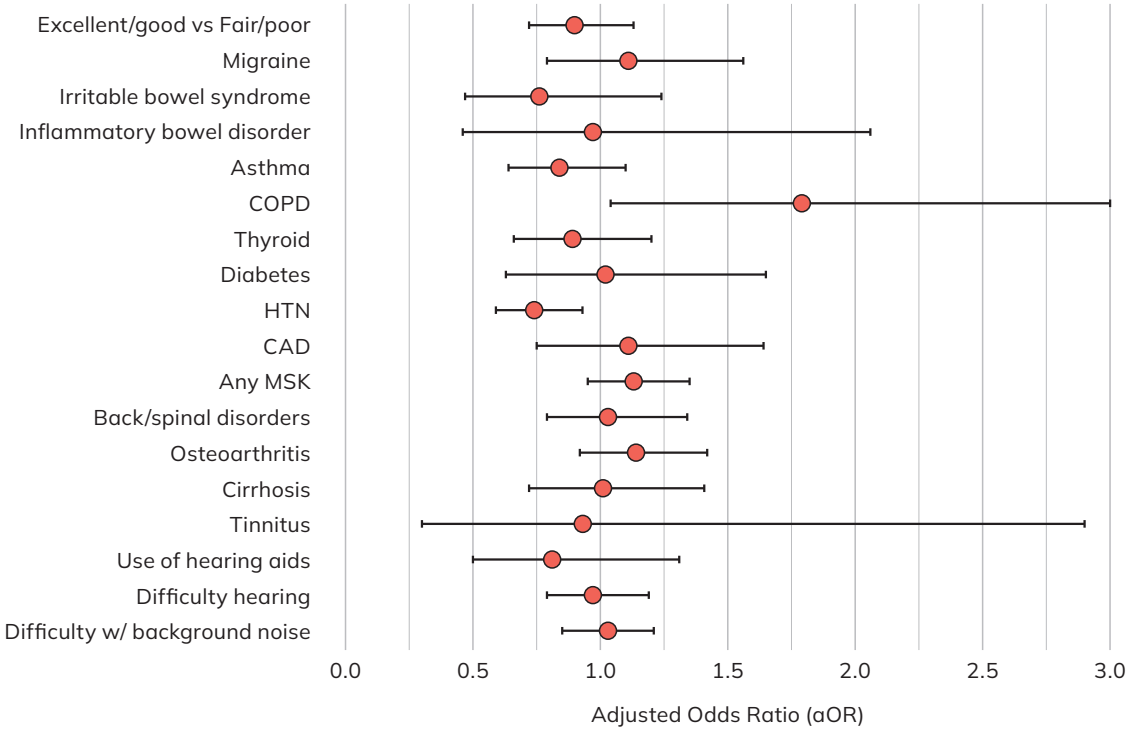
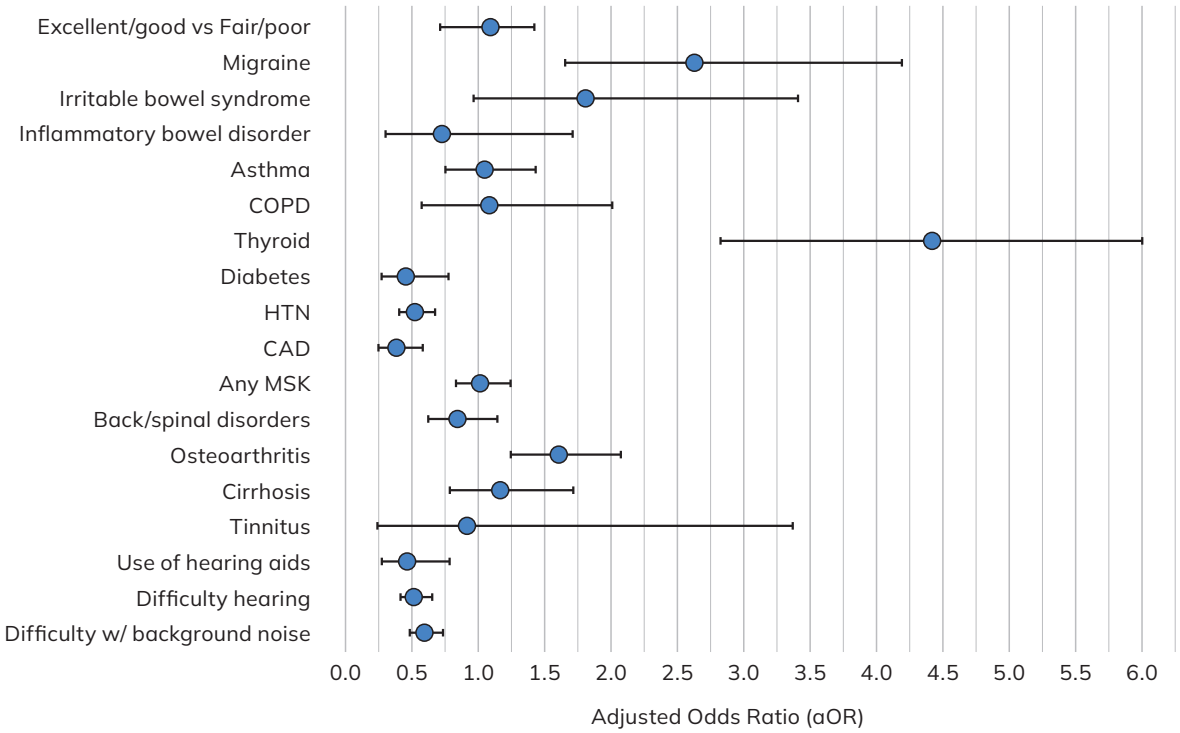


Figure 2. Physical health conditions of ex-servicewomen compared to ex-servicemen



Fully adjusted: continuous age, ethnicity, education, indices of multiple deprivation, BMI, smoking status.
COPD = Chronic Obstructive Pulmonary Disease
HTN = Hypertension
CAD = Coronary Artery Disease
MSK = Musculoskeletal

3.3 Defence Medical Welfare Service beneficiary dataset

3.3.1 Background

Defence Medical Welfare Service (DMWS) is an independent charity delivering professional, confidential and individualised physical, mental health and wellbeing support to the Armed Forces community (AFC) and frontline services, including police and NHS staff. Services are provided throughout medical treatment at the hospital bedside, within the home, and in the community.

From 1 January 2020 to 31 December 2023, DMWS supported 6,621 ex-service personnel. 6,116 were men and 505 (8.24%) were women.

3.3.2 Methods

DMWS collects data about its beneficiaries via a bespoke database, with data collected by welfare officers. Data was extracted from this database (to include all 505 ex-servicewomen supported by DMWS between 1 January 2020 and 31 December 2023) into an Excel spreadsheet, including information on self-reported health conditions, military service and a complexity score[141]. Further details on the assessment, recording, and types of complexities can be found in Appendix 5.

Self-reported health conditions are a listed field on the DMWS database; however, this data is collected via a free text box and is not mandatory. Some of the health conditions were not recorded initially, but were extracted as part of this research exercise and obtained by analysing the welfare officer's free text notes for a primary health condition self-reported by ex-servicewomen. Health conditions were categorised to align with the categories used by the UK Biobank.

For ex-servicewomen, there were 262 records that included a health condition. A comparison group of 2341 ex-servicemen beneficiaries was identified, representing those for whom a health condition was listed. Of these, 178 did not fit into one of the specified categories and are not considered in the health condition comparison, resulting in a sample of 2164. Data is presented using numbers and proportions to compare health conditions by gender, age and background military characteristics. Note that due to limitations of the DMWS database, the analyses focus on gender differences in the beneficiary profile for DMWS, rather than providing an age-matched comparative analysis.

3.3.3 Key findings

Characteristics of DMWS beneficiaries are shown in Table 1 below, including age, service branch and health conditions reported. Note that due to variation in completed fields in the database, the number of ex-service personnel reporting age, service branch and health conditions differs in the table.

Ex-servicewomen accessing support via DMWS were most likely to be in the 40-59 age bracket, compared to the 80-99 age bracket for ex-servicemen. Both ex-servicewomen and men were most likely to have served in the Army (46.4% and 60.9% respectively).

141 DMWS have six complexity categories: routine, low, moderate, high, severe, extreme. They are allocated on a points system based on the issue and the impact (between 1-6) and are used by welfare officers to determine the level and type of care required.

Both ex-servicewomen and men were most likely to have musculoskeletal/trauma-related health conditions recorded. However, the prevalence is higher in women (women: 48.9% vs men: 35.4%). This is notable considering the younger age of the women in the sample.

For both genders, neurology/eye/psychiatry-related health conditions were the second most reported health condition, with a slightly higher prevalence in ex-servicemen (women: 21.8% vs. men: 29%).

Table 1: Age, service branch and primary health conditions, stratified by gender

	Ex-servicewomen	Ex-servicemen
Age	**(n=244)**	**(n=2133)**
Under 20	0 (0%)	<5 (<1%)
20-39	29 (11.9%)	161 (7.5%)
40-59	81 (33.2%)	456 (21.4%)
60-79	74 (30.3%)	623 (29.2%)
80-99	57 (23.4%)	830 (38.9%)
100+	<5 (1.2%)	65 (3.0%)
Service branch	**(n=487)**	**(n=2299)**
Royal Navy	113 (23.2%)	319 (13.9%)
Royal Marines	0 (0%)	114 (5.0%)
Army	226 (46.4%)	1401 (60.9%)
Royal Air Force	139 (28.5%)	419 (18.2%)
Merchant Navy	7 (1.4%)	40 (1.7%)
Non-UK Forces	<5 (<1.0%)	8 (0.3%)
Service branch	**(n=487)**	**(n=2299)**
Cancer	19 (7.3%)	129 (6.0%)
Capacity	<5 (<1.0%)	0
Cardiovascular	13 (5.0%)	172 (7.9%)
Dementia	7 (2.7%)	0
End of life care	6 (2.3%)	0
Endocrine/Diabetes	<5 (<1.0%)	35 (1.6%)
Gastrointestinal/Abdominal	16 (6.1%)	98 (4.5%)
Gynaecology/Breast	<5 (<1.0%)	0
Haematology/Dermatology	<5 (<2.0%)	39 (1.8%)
Immunological/Systematic Disorders	8 (3.1%)	19 (0.9%)
Musculoskeletal/Trauma	128 (48.9%)	767 (35.4%)
Infections	<5 (<1.0%)	55 (2.5%)
Neurology/Eye/Psychiatry	57 (21.8%)	628 (29.0%)
Renal/Urology	0	64 (3.0%)
Respiratory/ENT	0	161 (7.4%)

Table 2: Complexity categories recorded for female and male veteran beneficiaries of DMWS

Complexity category	Ex-servicewomen (n=467)	Ex-servicemen (n=2332)
Routine	147 (31.5%)	474 (20.3%)
Low	109 (23.3%)	267 (11.4%)
Moderate	99 (21.2%)	537 (23.0%)
High or above	127 (27.2%)	1054 (45.2%)

Note: Sample size is based on those who had a complexity score recorded.

3.4 Op RESTORE dataset

3.4.1 Background

Military veterans have complex physical and mental health needs. Op RESTORE is the first specific provision in England for ex-service personnel with physical health needs. It integrates physical and mental health expertise to deliver holistic care to ex-service personnel. Founded in 2016, Op RESTORE, The Veterans Physical Health and Wellbeing Service has cared for more than 1,000 patients. The Op RESTORE database is prospectively maintained and includes information on patient demographics, military service, and use of NHS pathways and non-NHS provisions.

3.4.2 Methods

Demographics and physical health needs of ex-service personnel recorded within the Op RESTORE database as beneficiaries of their service are presented using percentages in tables and figures below. A subgroup analysis was performed by gender, comparing various physical health conditions.

3.4.3 Key findings

The demographic of the Op RESTORE data is shown in Table 3, with the military service and age distribution in Figures 3 and 4. Figures 5a and 5b show the physical health needs of the ex-servicemen and women, with musculoskeletal conditions the most prevalent physical health need for both. No significant difference was identified in the physical health needs of ex-servicemen and women.

Table 3: Op RESTORE beneficiary demographics

Gender	Count	Percentage
Male	763	91.2%
Female	65	7.8%
No info	9	1.1%
Total	837	

Figure 3. Service branch

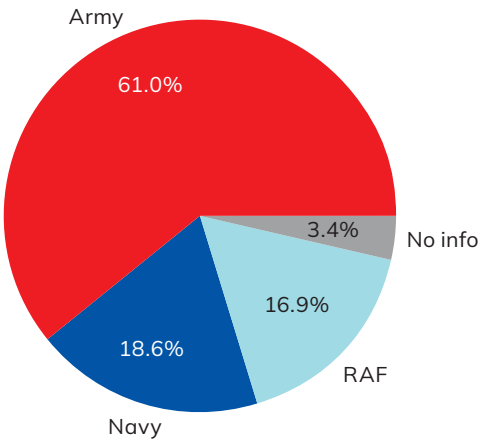


Figure 4. Age distribution

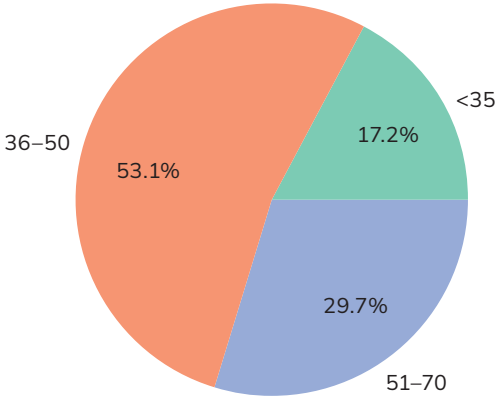


Figure 5a. Physical health needs of ex-servicewomen

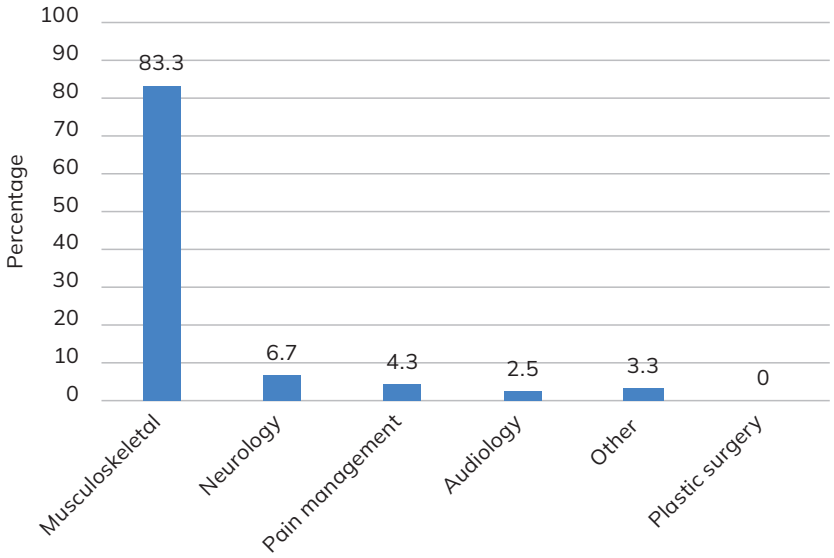
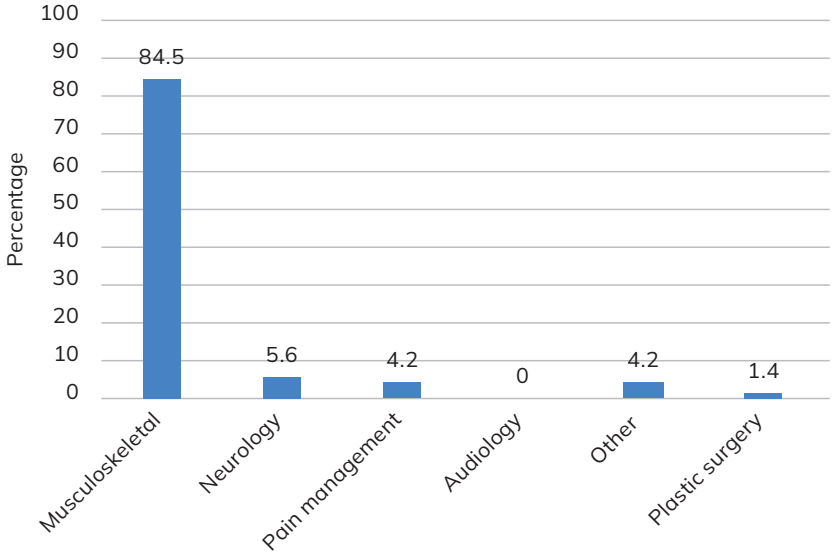
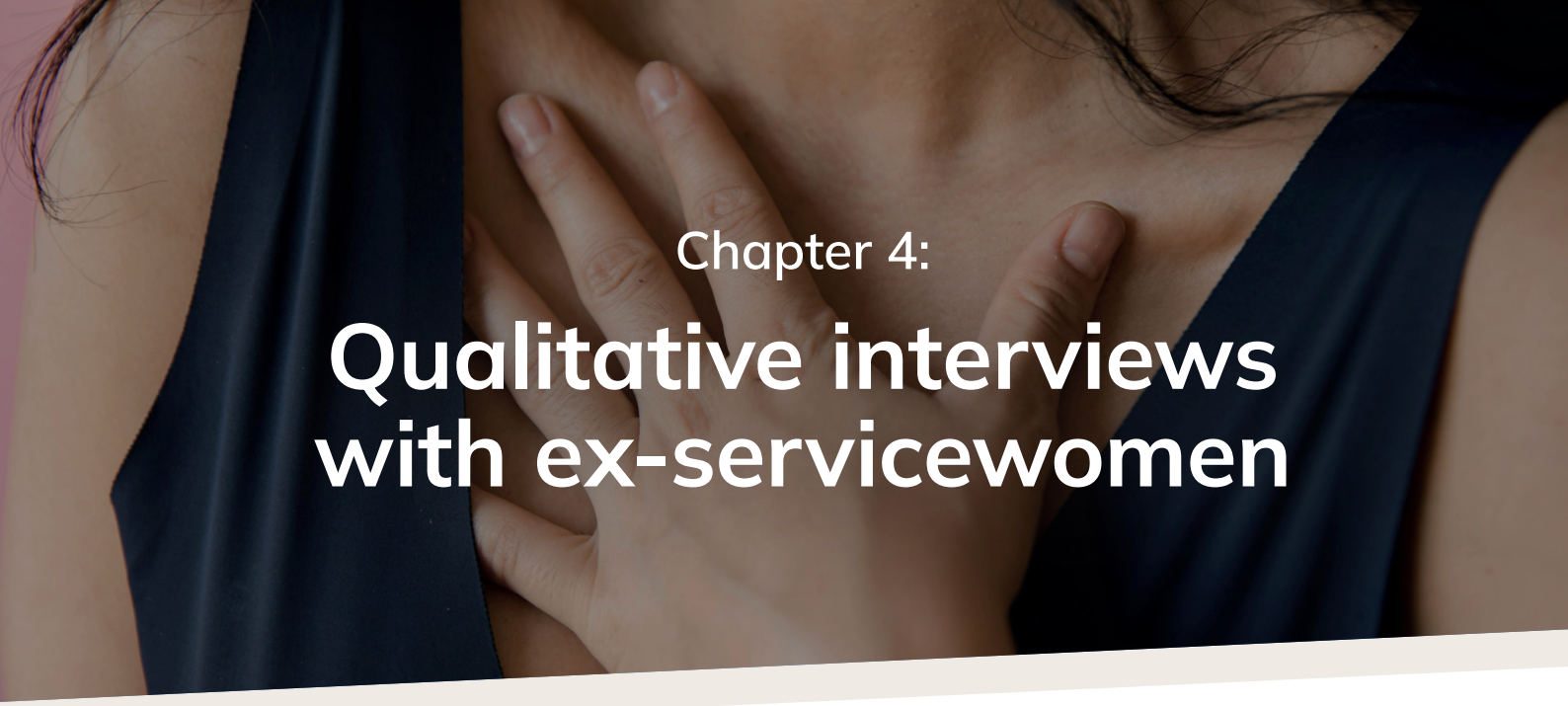


Figure 5b. Physical health needs of ex-servicemen





Chapter 4:

Qualitative interviews with ex-servicewomen

4.1 Background and approach

Services and support for UK ex-service personnel are underutilised by women, and little research or understanding exists about UK ex-servicewomen's physical healthcare needs and support preferences. To fill this knowledge gap, this part of the project involved taking an Exploratory Descriptive Qualitative (EDQ)[142] approach, undertaking 40 semi-structured interviews with ex-servicewomen across the UK to explore their experiences of living with physical health conditions, the support they received and their healthcare needs.

4.1.1 Aims

To understand the impact of physical health conditions reported by ex-servicewomen and to explore their experiences of physical healthcare support, barriers to care and service delivery preferences.

4.1.2 Sample

40 UK ex-servicewomen who self-identified as having a current physical health condition, illness or injury self-selected into the study. Exclusion criteria were those who served as part-time reservists, men, those under the age of 18 and those who did not have any current physical health condition, injury or illness.

We utilised a purposive sampling strategy to ensure representation from varied socio-demographic and military backgrounds and experiences of support (i.e. NHS, non-NHS, no support accessed) in line with the EDQ approach.

142 Hunter, D., McCallum, J. and Howes, D. (2019) Defining Exploratory-Descriptive Qualitative (EDQ) research and considering its application to healthcare. Journal of Nursing and Health Care, 4(1). Defining Exploratory-Descriptive Qualitative (EDQ) research and considering its application to healthcare. | Hunter | GSTF Journal of Nursing and Health Care (JNHC)

Godier-McBard, L., Gillin, N., & Fossey, M. (2021). We Also Served: The health and well-being of female veterans in the UK. https://www.centreformilitarywomensresearch.com/wp-content/uploads/2022/11/WeAlsoServed_Electronic.pdf

4.1.3 Recruitment

Ex-servicewomen were recruited via networks of veterans/veteran organisations, social media, women accessing Op RESTORE, the Battle Back programme and Defence Medical Welfare Service. This was complemented by snowball sampling through ex-servicewomen's personal networks. The research flyer created utilised various terms to describe ex-servicewomen including 'women from across the UK, who have previously served in the UK Armed Forces', ex-servicewomen and women veterans. The flyer explained that their current physical health condition, illness or injury did not need to be military or service-related, attributable or acquired. The research team also distributed the recruitment flyer via community groups which were underrepresented in the sample.

4.1.4 Methods

Ethical approval for qualitative interviews was obtained from Anglia Ruskin University Faculty Research Ethics panel (ETH2223-3565).

Semi-structured interviews (via Microsoft Teams) were used to provide flexibility and a broad coverage of topics. Interviews lasted around one hour, and were audio-recorded. The semi-structured interview approach meant that broad areas for discussion were identified at the outset to support the study aims, but with open-ended questions that allowed for new ideas to be discussed as a result of the participants' responses. See Appendix 6 for the interview topic guide and details on how this was developed.

Participants completed a brief socio-demographic survey to capture characteristics including: age, nationality, current country of residence, ethnicity, sexual orientation, information about their mental health in the last five years, whether they identified as disabled and if this was formally recognised, information about their military service, and if their gender identity was the same as that assigned at birth (See Table 4). The survey captured an overview of participants' self-reported current physical health conditions, which was further explored within the interviews. Information was also collected on current and previous female-specific health conditions such as such as infertility, reproductive health, sexual health, pregnancy, pregnancy loss, miscarriage, baby loss, gynaecological health conditions, gynaecological cancers, breast cancer and menopause.

4.1.5 Analysis

Interviews were transcribed verbatim (by a professional transcription service) and analysed by the research team using reflexive thematic analysis[143], including rounds of both inductive and deductive open coding in NVivo 14. The research team worked collaboratively, meeting regularly to discuss and refine the coding until they were satisfied that meaningful themes had been developed. Thematic analysis is recommended for EDQ studies to identify key issues and the 'core of the experience'. Analysis focused on exploring ex-servicewomen's experiences of physical ill health, barriers to care and service delivery preferences.

143 Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health, 11(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

4.2 Our sample and their health conditions

4.2.1 Sample characteristics

The sample for the qualitative interviews was 40 UK ex-servicewomen who self-selected to take part in the study between February and June 2024, and identified as having a current physical health condition. Table 4 shows participant characteristics.

Table 4: Sample self-reported demographics, mental health and disability

Age (in years)	
30-40	6
41-50	9
51-60	16
61-70	5
71-80	2
Not given	2
Length of service	
1-5 years	7
6-10 years	14
11-15 years	6
16-20 years	5
21-25 years	6
26-30 years	2
Period of service: 1962-2024 (reported year of exit)	
1962-1970	1
1971-1980	1
1981-1990	6
1991-2000	8
2001-2010	9
2011-2020	6
2021-2024	9

Country of residence at time of study	
England	32
Scotland	4
Wales	3
Northern Ireland	1
Sexuality	
Asexual	1
Bisexual	1
Gay/Lesbian	3
Heterosexual	32
Prefer not to say	2
Other	1
Ethnicity	
White: British	38
Black/Black British: African	1
Mixed: White and Asian	1
Service branch	
Royal Navy	7
Army	22
Royal Air Force	11
Royal Marines	0
Rank upon discharge	
Other	30
Officer	8
Not given	2
Experienced a mental health challenge in the last five years	
Yes	27
No	11
Prefer not to say	2

Participants who considered themselves disabled	
Yes (total)	23
Yes – I self-identify as disabled	8
Yes – I am registered deaf or blind, I qualify for a blue badge, or I receive disability welfare benefits (such as PIP, ESA, disability-related elements of UC)	15
No	15
Prefer not to say	2

4.2.2 Physical health conditions experienced by our sample

Self-reported physical health conditions were categorised according to the primary body system where the documented medical consensus suggests they originate, e.g. as immunological conditions. We recognise, however, that while necessary for analysis, this approach may not fully capture the complex nature of these conditions. Within Table 5, conditions are ordered according to prevalence in the sample.

Table 5: Physical health conditions at the time of interview

Body system	Number affected (of 40)	Types of condition
Musculoskeletal	29	Osteoarthritis ++ (knee, hand, hip); spinal (prolapsed disc, sciatica, pain); ankle ligament damage; shoulder injuries
Gynaecological/Women's Health (EVER)	28	Menopause; perimenopause; uterine/ovarian/cervical cancer; dysmenorrhea; infertility; endometriosis; recurrent miscarriage; polycystic ovaries; uterine fibroids; menorrhagia; breast cancer
Gastrointestinal	12	Irritable bowel syndrome; hernia; faecal incontinence; reflux; gallstones; diverticulitis; Crohn's disease; Ileostomy; chronic constipation
Immunological	11	Rheumatoid arthritis; chronic fatigue; Ehlers-Danlos Syndrome; alopecia; secondary Raynaud's; ankylosing spondylitis
Cardiovascular	9	Hypertension; cardiovascular disease; bradycardia; orthostatic intolerance; aneurysm; primary Raynaud's syndrome
Respiratory	9	Shortness of breath (caused by physical trauma or heart condition); asthma; lung cancer; sleep apnoea; chronic cough
Haematology	6	Anaemia (iron deficiency and pernicious)
Neurological	6	Migraines; trauma/Injury; MS; muscle weakness

Body system	Number affected (of 40)	Types of condition
Vision	6	Poor vision; dry eye; damage
Dermatological	5	Psoriasis; skin cancer; eczema; hydrenitis suppurativa
Renal or Urology	5	Urinary incontinence (includes pelvic floor damage, MS-associated)
Endocrine	4	Diabetes; fatty liver
Ear nose and throat	3	Hearing loss; broken nose complications; recurrent sinus infections
Other	2	Chronic pain

4.2.3 Sample overview

Of our sample, 60% (n=24) left service after 2001, with 23% (n=9) leaving after 2021, demonstrating the relative contemporary nature of our findings in relation to the impacts of service.

In line with the findings reported in Chapter 3, musculoskeletal conditions were the most prevalent, affecting 29 out of 40 participants (72.5%), suggesting a potential impact on mobility and quality of life for many participants.

It is important to note that many participants reported multiple concurrent conditions (gynaecological conditions not included due to the potential for being historic), and these represented 70% (n=28) of the sample). The high prevalence of concurrent conditions among our participants highlights the need for comprehensive healthcare strategies and support that address the diverse needs of individuals experiencing complex health issues.

While the pre-interview survey primarily focused on current health conditions, it is important to note that in relation to women's health, current and historical conditions were captured. 34 participants (85% of the sample) reported a variety of women's health conditions (detailed briefly within but explored further in a separate paper).

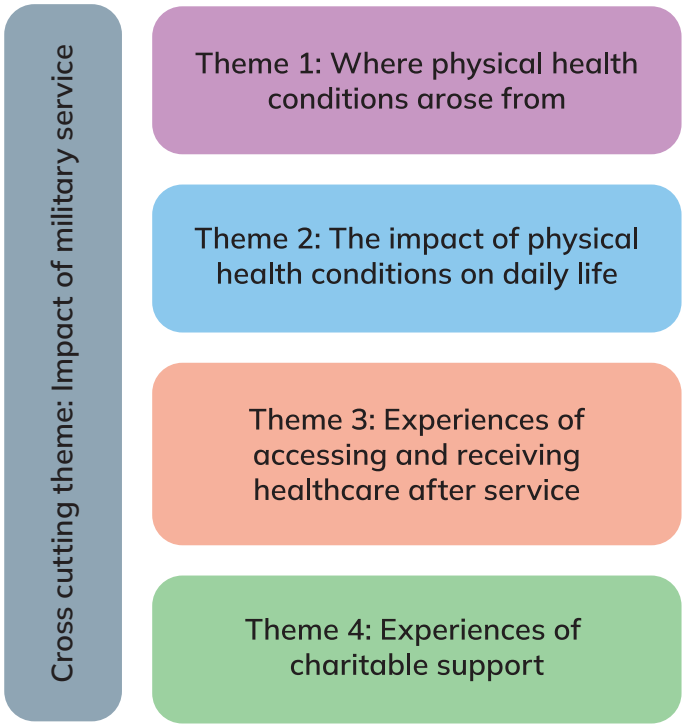
To support a degree of contextualisation of quotes provided in sections 4.4–4.8, Appendix 7 outlines anonymised details of the participants. Some information is omitted, such as country of residence, to reduce the risk of identification.

4.3 Themes overview

Following thematic analysis of all transcripts, the following four main themes and one cross-cutting theme were derived to represent participants' experience of living with physical health conditions (see Figure 6). These related to: 1) Origins of physical health conditions (section 4.4); 2) The impact of having a physical health condition on participants' daily lives (section 4.5); 3) Experiences of accessing and receiving healthcare (from the NHS and/or private services) (section 4.6); 4) Experiences of charitable support (section 4.7). Although the four main themes touch briefly on participants' military service in some way, the impact of their service and its effect on their

approach to/management of their health conditions cuts across the themes and so is presented at the end of this section as a cross-cutting theme (section 4.8).

Figure 6. Qualitative data themes



4.4 Theme 1: Origins of physical health conditions

Theme summary:

The conditions reported by ex-servicewomen in our sample varied regarding their origins. For some, the perception was that health conditions had arisen during military service and so might be considered 'attributable' to service. This included injuries caused by accidents or sustained during training, deployment or other military occupational activities, which were directly recognised by the military (i.e. through military compensation/pensions).

For some, there had been difficulties in getting formal recognition that their health condition was attributable to service. In some cases, this was because they themselves were uncertain whether their condition had been caused or worsened by service. As examples, participants noted the general wear and tear of physical activity during service, or equipment/uniform not suited to female bodies, but none of the participants had had this formally recognised as an occupational injury.

Others described health conditions that they perceived to have arisen outside of military service, including lifelong chronic and genetic conditions, accidents or injuries sustained in civilian life, and conditions related to ageing.

4.4.1 Health conditions perceived as attributable[144] to service

Some ex-servicewomen believed accidents during military service, training and deployment were clearly linked to their ongoing health conditions post-service. This included being involved in vehicle accidents, sporting accidents and accidents on duty.

> *"Well what happened was when I was in [...], on the way back from [...] We hit black ice and it [minibus] crashed, and my injury was (umm) trauma in both my knees [...] And it wasn't until about six/seven years later that it started manifesting in my knees with sore knees and that. And it wasn't until I'd seen a specialist in [...] who says to me have you ever been in a car accident? [...] and then I just remembered actually I was in the Army. And that's what they put it down to, that trauma in both my knees in that accident had brought early onset severe osteoarthritis."* ***Participant 18***

Many described general 'wear and tear' associated with the physical demands of military service. This included regularly lifting and carrying heavy equipment, moving long distances on challenging terrain, involvement in intensive military sporting activity, and the long-term impact of uniform and equipment that was poorly suited or not designed for female bodies. Some participants also reported non-freezing cold injuries (i.e. which can include symptoms such as numbness, pain and swelling, that continue after re-warming) due to prolonged exposure to cold and wet conditions, as well as health issues related to exposure to diseases, toxic materials and biological agents.

> *"And I was also a [range officer] as well... I got my back (umm) I get back pain as well. I think that was from all sorts of tabbing all around the country with telegraph poles and webbing that didn't fit correctly because it was male webbing and... and boots as well. Boots that (umm) weren't made for... for women because they were really quite wide boots."* ***Participant 105***

Whilst some of these health issues could not be clearly linked to a specific accident or incident during military service, some participants felt their physical conditions had been caused by service and that they would not have experienced them otherwise. Others had not always made this connection or were unsure, but had considered this possibility more recently.

> *"And my friend was like yeah, but that's because we've all got non-freezing cold injuries [LAUGH] from our service! And I'm like... yeah, you're probably right! So I think I probably... because I joined at sixteen, it's really hard sometimes to tell you know what... what is a... you know a cause of the... of your service or like would I have just developed that normally? I... I don't know, but I suspect not because obviously we spent a lot of time in very cold conditions with very wet feet and you know parade squares and various other stuff. So I suspect... yes, I suspect that probably is as a result of my service."* ***Participant 33***

For women who believed their health conditions were service-attributable but the link was less obvious, obtaining formal acknowledgment and compensation was often challenging, with long delays and multiple rejections of claims, which had an impact on them financially (see also section 4.5.4).

144 The term used to describe where an injury or illness was caused or significantly aggravated by service in the Armed Forces.

"It took twenty years from my first application. I think it was 1997 I made my first application, and I didn't receive that until I had retired from [civilian role], so that would have been about 2015/2016. It took a long time. A long time. [...] And they never backdated it." ***Participant 3***

4.4.2 Health conditions not perceived as attributable to service

Many ex-servicewomen discussed health conditions that they did not attribute to their service. As with the civilian population, the origins of these conditions were varied and included genetic/hereditary diseases, chronic illness (i.e. MS, chronic fatigue, auto-immune disorders), accidents and injuries sustained either after service or whilst off duty (i.e. skiing, car accidents), and illness associated with ageing (i.e. heart and blood pressure issues, hearing and sight issues).

However, some felt that military service had exacerbated their chronic health conditions. For some, these had started in childhood or adolescence, and for others they perceived these had been triggered by the physical demands of military service or a particular injury sustained during service.

"Literally they reckon it [fibromyalgia] was caused by the trauma of my injury." ***Participant 95***

4.5 Theme 2: The impact of physical health conditions on daily life

Theme summary:

As with their civilian counterparts, ex-servicewomen detailed numerous ways in which they felt their physical health conditions affected their daily lives. They described how their physical health impacted their ability to manage their personal care, routine household tasks and employment.

Participants also highlighted impacts on finances and the adaptions and support mechanisms they had used to help manage their health, some of which were covered by military and ex-military support.

Furthermore, women shared the impact of their physical health conditions and needs on their mental health, engagement in hobbies, social lives, and intimate and familial relationships. While some aspects were similar, there were also distinct differences to civilian women.

4.5.1 Impact on daily activities

Ex-servicewomen in our sample reported numerous ways that their physical health impacted their daily lives. Many associated their difficulties in managing day-to-day with pain levels, fatigue and limited mobility caused by their physical health conditions. For some, the impact of their physical health needs pervaded their daily life, whereas others described how the impact was variable.

"Fucking hell, absolutely. Every aspect… aspect of my life. Sleeping, sitting, standing, shopping… housework… relaxing… gardening… painting, anything. Yeah, it just… it yeah… it… you know your shoulders are here, and also they carry a lot of weight unfortunately from this." ***Participant 11***

For some participants, medication (i.e. pain relief) was the only way they could manage. Many discussed the difficult side effects of taking medication and the impact on their lives.

"I've got co-codamol, but I don't really like taking it because I've got work to do… because it spaces me out so I tend (umm) you know when I'm working I tend… Like ibuprofen, I just do boxes of the stuff at the moment." ***Participant 12***

"I've been on medication (umm) and… it's quite difficult being on medication when you… this… especially when it's… makes you drowsy and sleepy and energy… energy down and you can't drive a vehicle when… like your day-to-day…" ***Participant 9***

Most of our sample were working-aged women (78% were under the age of 60). However, many were unable to work full-time or at all due to their physical health needs, making them dependent on welfare benefits and on others for financial support. Some were able to remain in work due to their employers facilitating reasonable adjustments such as home working, adaptations to the office environment and rest breaks.

"I choose to work, I mean my doctor keeps saying… but I'm lucky I work in a school, I have a room I could sit down all the time. … I could sit down in the playground, I've got a little bench. So it's not affected… well it has affected me work-wise in that I had to have the… the school's got a lift for me. So I could have a lift for access (umm) and I've got seats anywhere I want, I can have a seat. I'm really lucky my job allows me, and my boss allows me to do that." ***Participant 18***

4.5.2 Management of personal care and mobility

Like their civilian counterparts, participants described the impact of their physical health on their ability to manage their personal care independently. They spoke of requiring support with getting out of bed, dressing, washing, managing toileting, managing incontinence, getting around the house independently, cleaning, laundry, cooking and shopping.

The impact of physical health on mobility was also mentioned by many, with women describing how reduced mobility impacted their ability to complete day-to-day tasks and presented difficulties in getting around both inside and outside the home. Many described receiving support from partners, family and friends. Comparatively few described formalised care arrangements with either family or external carers.

"My husband has been my main carer for a long time, so he does everything domestically around the house, the washing, the drying. My kids are very… old enough to get themselves up and dressed and sorted nowadays. I have a cleaner… I can't clean the house, so I have a cleaner who does that." ***Participant 1***

Furthermore, some participants shared that their physical health meant they were unable to drive. Both this and other mobility difficulties impacted some women's ability to travel, affecting both essential daily tasks and their ability to socialise freely.

> *"When you've been used to... I don't know perhaps living on camp, living in the mess, living in the barrack blocks. And then all of a sudden you're living alone. I would imagine it could... could be quite frightening. Certainly... and you know living quite a solitary life especially if you have a debilitating illness, such as I had. You know I... I couldn't drive myself around initially. (umm) I couldn't take myself shopping, that's for sure."* ***Participant 88***

4.5.3 Adaptations and support mechanisms

Much like their civilian counterparts (male and female), some women were better able to manage their own daily activities due to significant adaptions to their homes or daily routines. These physical adaptions included (amongst others) grab rails, downstairs bathrooms, accessible kitchens, and adaptions to the garden or driveway. Some participants chose to live in bungalows to better accommodate their limited mobility, whilst others used assistive technology to support their mobility, including wheelchairs and physical aids. Some used technology such as robotic hoovers, online shopping and meal delivery kits (where ingredients are delivered in portions to prepare set meals). For some their military pension had supported this.

> *"When we brought this house two years, I used my big lump sum to have enough adaptations done that the house was liveable."* ***Participant 1***

4.5.4 Financial impact

As noted, some women shared how they had used lump sum payments from military pensions, money from the Armed Forces Compensation Scheme or military charitable support to cover the cost of adaptations and support. In addition to this, others described allocating money received via war pensions, general military pensions, government welfare payments including personal independence payments, or adult social care funding allowances towards costs to support their physical health and daily lives.

Commonly mentioned additional costs due to physical health conditions included alternative therapies (such as physiotherapy and massage), personal assistants and support with cleaning, laundry or gardening. Ex-servicewomen's use of alternative therapies is further discussed in section 4.6 below.

> *"I get my war pension and my RAF pension, and I always say my RAF pension pays for a massage a month, and my what's it war pension is paying for everything else!"* ***Participant 95***

For some women, however, being able to afford support or pay for adaptations was a significant challenge, because while they had distinct physical health needs, they were either not receiving any payments to support these, there had been an increase in the cost of services, or payments they had previously received had ceased due to funding changes. Others had faced significant

challenges (as noted earlier in section 4.4) in getting their health condition recognised as being attributable to service, and so consequently struggled accessing financial support for their physical health needs.

4.5.5 Social and familial impacts

Participants shared numerous ways in which they felt their relationships were affected by their physical health, which mirrors the experiences of civilian women (and men). Some shared how their chronic pain led to irritability and withdrawal, impacting relationships with friends and family. Some women reported difficulties with socialising due to not being able to travel or drive, managing fatigue or the need to consider other physical health issues (e.g. incontinence).

> *"My friends might think I'm (umm) available to do things with them, you know and... for example like if... if I go on holiday for a week then I probably would build in another four weeks after that to have... not be going away and not be doing anything really... And so when they're looking at their diary, they'll go oh yes I'm... I'm free on Sunday because I did something on Saturday, but that's fine. Whereas I couldn't actually then book something in for the Sunday, I'd have to like give myself a bit of a wide margin."* ***Participant 2***

Women further described the impact on their intimate partner and family relationships. Some shared feeling guilty about being unable to meet their perception of what a good parent should be, and the emotional impact of not being able to do what they would like to with their child(ren) due to their physical health.

> *"I started getting like (umm) guilt... guilt tripping myself because I felt if I'm on this medication I'm totally out of it, I'm not being a good mum."* ***Participant 9***

When discussing intimate partner relationships, some women spoke about challenges related to not being able to have the sex life they wanted.

> *"But like having a romantic relationship with someone was... like (umm) with my injuries is... is really limiting, it's... (umm) because when you meet someone and you start a relationship, you kind of just want to be as free and as active as you... as you'd like to be."* ***Participant 33***

4.5.6 Sporting activities/hobbies

Much discussion was focused on physical activities such as sports and dancing, in which participants were unable to engage at the same level as before due to their physical health needs. Women shared the impact of this, both on their social lives and in some cases their positive self-image. Several women's accounts highlighted their desire to continue to push themselves to achieve physical tasks as they had done when serving, for example walking or running long distances. As well as describing frustration when unable to meet their own expectations, women's discussion of their relationship to physical activities suggested that the highly active lifestyle cultivated in service continued to influence their preferred form of socialising and shape their expectations of physical activity post-service. Thus, the impact of their physical health needs on their ability to engage in

sports and exercise appeared more difficult to adjust to than some other areas. This is further discussed in section 4.8.

> *"Suddenly I'm not working anymore, I'm this person that can't cope and my body is wrecked, I can't... because normally I run and... you know keep very fit. I've put on lots of weight, (umm) and I didn't recognise the person that I was."* ***Participant 99***

> *"But unfortunately I... I can't with my foot because I tried it last weekend and perhaps it was too much to do six and a half miles! You know the first go! But that's who I am, you know and I... I just can't go... I'm not a half pint person! You know I just want to go for a full pint, so yeah."* ***Participant 12***

4.5.7 Mental health implications

Many women discussed experiencing concurrent mental health challenges (e.g. anxiety, depression, PTSD, suicidal ideation, stress), exacerbated by service for some, and emphasised the relationship between their physical and mental health. Some shared that this relationship 'works both ways', with their physical health impacting their mental health and vice versa. As with civilians, several women described how the negative impact of their physical health on their energy or sleep levels subsequently impacted their mental health. Women commonly shared frustration at the limitations they experienced due to their physical health.

> *"I guess it might be... well it is bound to be relevant in the fact that I have made more than one attempt on my own life. ... you know I think the reality is... when something happens so traumatic [injury in service] in... in a person's life, (umm) at such a young age. [...] And that moment changed everything. And changed everything forever. [...] I have a visual impairment and I haven't been able to drive since that day. So... you know the impact of... I think probably the impact of... surviving was the problem. And I know that sounds funny to say, but I probably was experiencing grief."* ***Participant 64***

4.6 Theme 3: Experiences of accessing and receiving healthcare after service

Theme summary:

Ex-servicewomen detailed their experiences of healthcare for their physical health needs after service, reflecting on their experiences of NHS GP care, NHS hospital care, NHS dentistry, alternative therapies (such as NHS and private physiotherapy, acupuncture, aromatherapy, Pilates and yoga, and alternative medicines).

There were many commonalities with the experiences of their civilian counterparts, such as barriers to access (including difficulty getting appointments and regional variations in NHS services), and challenges with female-specific health needs (such as difficulty getting a

diagnosis/treatment access and limited understanding of conditions among professionals).

Considering how ex-service and civilian experiences may differ, ex-servicewomen described obstacles related to the transition from the military healthcare system to the civilian NHS in terms of access, practitioner understanding and awareness of military-specific needs, and the comparative service provision. They also reported delays or failure in diagnosis and treatment for female-specific health conditions during service, which created additional challenges in civilian life (this is further explored in section 4.8).

4.6.1 Transfer of care after service

Participants discussed the transfer of their healthcare from the military to civilian healthcare system on discharge. Many women found the NHS system disappointing or difficult in comparison to the relative efficiency of accessing healthcare during service. They discussed the speed at which they would be seen by military healthcare professionals, and having better access to a range of specialists in-service (except for female-specific conditions), in order to ensure they were 'ready and able' for work again as soon as possible.

> *"I would say that the actual service that we get from the doctors in comparison to what we used to get in the military, well it doesn't compare. Because (umm) in the military you would go to the sick bay in the morning, if that's what was happening and you felt poorly, and you would be seen. You would be seen because they want to get you back working as soon as possible."* ***Participant 81***

For some, the transfer of their medical records was a challenge. Some described the transfer of medical records in paper form, due to military and NHS systems not being compatible for electronic transfer. Others discussed their medical records not being transferred at all, important documents/ letters being lost or there being delays in handover. This resulted in significant gaps in civilian healthcare professionals' knowledge of their physical health needs.

> *"... by that time, my military records had... certain stuff there is, but all the hospitals, that all seems to have disappeared somewhere [...] Trying to find out information, it is all... you just have to kind of keep going through and explaining it all again [...] And unfortunately my records from the hospital [military], all the medication I was given whilst I was injured, they all seem to have disappeared."* ***Participant 70***

> *"I don't even think my medical records from the MOD have got there yet to be honest."* ***Participant 92***

For a couple of participants there was a sense of feeling abandoned by wider support systems, including the military, where their physical health condition resulted from their service but the healthcare system in the civilian sphere was not equipped to provide the level of care they needed.

> *"... I sort of feel like... I get that it's my choice of career. But I... I kind of... now when I need blood pressure drugs, steroid injections... (umm) you know continual drugs which I'm going to have to*

pay for which is fine because I know our NHS can't support on you know...! But I kind of think... I've done my service and it's because of my service that I need this health support, yet right at the time I could do with it being a service that's helping me, they... were abandoning me. That's a bit of an emotional word, but I... I kind of feel that resentment that... they... you know I never foresaw that I wouldn't be able to play football with my son or... you know I never foresaw that. I was the most healthy, most active... and now..." ***Participant 96***

4.6.2 Experiences with NHS General Practitioners

Many participants reported positive experiences with accessing healthcare via an NHS GP. They described being able to access appointments, prescriptions and treatment quickly, and of empathetic and helpful healthcare professionals. However, others mentioned barriers to access, including those experienced by civilians in accessing stretched and underfunded NHS services. Some veteran-specific barriers were raised, such as a lack of understanding of the military experience or veteran-specific care pathways. Furthermore, some ex-servicewomen discussed a lack of understanding of female-specific health conditions that impacted their care.

Practical access barriers

Ex-servicewomen described barriers to accessing GP support in their civilian life, including difficulty getting appointments at a convenient time or at all, a lack of continuity of care, and struggling to find pharmacies that could fill their prescriptions. In addition women described a "postcode lottery", with different regions having varying availability of appointments. These issues created delays in accessing the care and support women needed to manage their physical health conditions. In general, these barriers to access mirror those experienced in the civilian population.

"Well we... you have to ring up at eight o'clock and then they'll be no appointments left or... they'll (umm) or they'll ring you back, and she'll talk to you on the phone and then you don't seem to... get your point across and... so... like I'm having trouble with my wires now where they've... my cardiac... my sternum wires. And I want to talk to her, but... she can't see it if I'm on the phone. So it's just ridiculous." ***Participant 21***

Veteran awareness

Most participants indicated that their GP surgeries were accredited as 'veteran friendly' and that their veteran status had been recorded. However, some felt that this did not impact on their care, and described how this did not 'open any doors' for them or impact on their care pathway at all.

"I think the thing is we are told... that you know these services are out there for veterans and you know all you've got to do is go in and tell your doctor you're a veteran and... and magically you'll... you'll become accepted and... you'll move onto this service and then go onto that service. And it's not, it's not like that." ***Participant 70***

Others felt that understanding of military experiences and veteran-specific service provision was still lacking in these surgeries despite this accreditation. Some participants felt that GPs either did not have enough time to talk about, or just did not understand, how their military service history might have impacted their health, even if they were 'veteran friendly'.

"Do you know what it's like even though (umm) I'm aware that the doctors (umm) I've told them I'm a... a veteran, and I mentioned certain things. And I think there's a total lack of an awareness of how issues that I'm going to speak to the doctor about are related to my time as a veteran." ***Participant 105***

Positive experiences of GP care appeared to be related to a better understanding of military life, GPs with a military background, and those located in areas with a high density of veterans and military personnel.

"My GP practice, it is very good. [...] I live in an area that has the highest level of veterans in the country. So 12.5% of the population here are veterans. So I think that they are very used to looking after veterans. The GPs that I have seen have been very good at ensuring I've been referred to the right place." ***Participant 1***

Understanding of female-specific health issues

Echoing the experiences of their civilian women counterparts, some participants discussed their experiences of accessing GP care for female-specific health issues. Menopause was discussed by several participants, who expressed difficulties in getting a diagnosis or accessing treatment, and in finding a GP who had sufficient understanding of the condition. Some women discussed feeling as though their menopause symptoms were dismissed as psychosomatic. This led to women suffering with symptoms for many years before accessing the right treatment or medication. Conversely, others felt that a menopause label was used to dismiss the possibility that their symptoms might relate to another undiagnosed health condition.

"So everything... go oh it's menopause, it's that age and then... and it's easier then I think for a GP to then put a lid on it and go... now go away, there's nothing we can do." ***Participant 82***

Unique to ex-servicewomen was that several participants who were either in perimenopause or menopausal reported that the psychological impacts of the menopause were exacerbated by their military-related mental health difficulties, including PTSD. They suggested that this made diagnosis and effective treatment more complicated.

"Basically, what she said... was you know (umm) what you're going through like the night sweats and all that sort of stuff could actually be PTSD or it could be the... the menopause. So ..." ***Participant 92***

In support of their health, participants discussed the benefits of having a female GP when discussing female-specific issues. Having a female GP with a military background was seen as particularly beneficial in fostering rapport and understanding.

"My GP is an ex-submariner, ex-military doctor, he was fantastic. And when he brought an ex-female Wren (umm) ex-RN doctor into the practice, he called me in and he... when it comes down to it, female military you're few and far between and I thought you two would get on really well. [...] Somebody described it to me as you felt you... they were in the cocoon with you.

And I was like actually yeah. They get it, they know what you mean and... silly little things." ***Participant 95***

4.6.3 Experience with NHS hospital care

Like their civilian counterparts, many participants discussed positive experiences with NHS secondary care. Where this was the case, participants often highlighted positive experiences with specific specialists or healthcare professionals who gave them continuity of care and regular follow ups, and adopted an individualised approach to supporting their physical health.

However, participants also described negative experiences with their care, including specialists not reading their notes properly or notes getting lost, a lack of understanding of the relevance of their military background, and dismissive attitudes towards their physical health symptoms, leading to delays in appropriate treatment.

"So I moved from [Devon] where I'd had all my breast cancer treatment back to [Hampshire]. In that transition all my medical notes got lost. Which made it really difficult because it took me six months to even get some of my notes back, you know and... how they got lost because they should have been transferred electronically, I don't know." ***Participant 82***

Practical access barriers

Ex-servicewomen described difficulties accessing hospital appointments due to long waiting lists. Some described having to travel significant distances to access specialist hospital care, and the cost associated with this. For some, this was to avoid losing their place on waiting lists after moving to a new location. Participants recognised this was a general problem within the NHS, rather than a veteran-specific issue.

"So I've a... pain management team at [Guy's and St Thomas's] which I've been advised not to move because you... it... the waiting list is so huge to get that moved anywhere [north]. Which took me so long to get there in the first place, I'm terrified to move it. But it's an eight hour round trip for me to go for one appointment." ***Participant 52***

Veteran awareness

Some participants reported never being asked if they had a military background, and a lack of understanding from NHS healthcare professionals of any need to consider this within their care. This was more prevalent in hospital care than in primary care. For those who were asked or reported their veteran status, there were mixed experiences of the benefit of this. Most participants who discussed this reported that it made no difference to their care or was not discussed in relation to their care.

"The outcome of that initially was that because of my age, my hearing was about where it should be for my age. But... I... you know I say I... sort of like argued and said well I really cannot hear if I'm in a room with people and it's... I can't... I cannot hear what is being said. And they

said oh well it's just... and they basically just said oh it's just... just your age. And I go no I'm getting tinnitus, I'm getting it quite bad now, and those sort of things. But there was no... there was no understanding of why I might be getting that." ***Participant 105***

A small number of participants felt that veteran awareness helped healthcare professionals to understand the underlying causes of their physical condition.

"Yeah. ... I thought after the operation settled down, my ankle would improve, I've lost some weight and it's not. And he goes ah actually you were in the Army weren't you? And then he's like maybe it's... because of all the stuff we do in the Army, it's contributed to your ankle and it's flared up." ***Participant 108***

A lack of recognition of women's roles in the military or potential exposure to combat situations was also discussed.

"Because they ask the questions now, so why do you think (umm) you've got this? What... what's brought this on? And so you're going through the whole of your stuff again. Whereas if it just came up on screen, veteran (umm) you know combat service even, something like that would probably (umm) be helpful. Because they also don't think that women served in combat zones." ***Participant 105***

Veteran-specific care

Several participants discussed veteran-specific care and care pathways within NHS secondary care, for example Op RESTORE. Participants felt there was a lack of awareness of this service, and the eligibility for referral from both healthcare professionals and ex-service personnel themselves.

"So I... asked my doctor to refer me, and again the GP [said] Op RESTORE what's that? So I was going to get an appointment a month later when we would discuss the [LAUGH] so my sister got hold of the form, filled it in, the doctor signed it off [LAUGH] and they sent it off. So that's down to [LAUGH]." ***Participant 17***

"I don't think I have. In fact I've just... I've never... I've heard of like Op COURAGE and Op various things, but I've not heard of Op RESTORE. And... having been medically discharged, I'm quite surprised that I've not heard of it!" ***Participant 30***

For the few participants who had experience of this service, they highlighted how they experienced similar delays in accessing treatment via this route as they had done within standard NHS treatment pathways.

"We started this programme... this route (umm) in October and we're now in February ... but it's a very slow process. The.... MDT [multi-disciplinary team] sat just before Christmas. So it... yeah, we're now getting towards the end of February and I'm not quite sure what's going on if that... I'm trusting, I'm trusting [Doctor] and he has told me he's contacted the guy in [London], but still waiting." ***Participant 17***

Some participants however discussed the benefits of accessing Op RESTORE and other veteran-specific care, including accessing specialists who had specific clinics for veterans, and Veterans First Point within NHS Scotland. They felt these services were particularly effective in providing support to veterans navigating NHS services.

> *"Well the [service], the [service] workers are really... a first point of call because all they're there for is to help veterans deal with NHS situations. And to me, I wouldn't have gone through it if it was for the... [service]. And like that you could go up just for a cup of coffee, do you know what I mean, you don't have to just go up and have something like wrong to... you could go up and speak to them about your condition. I mean as I say now, I still keep in touch with them now and again... if I just go for a chat or something like that."* ***Participant 18***

4.6.4 Experience of accessing NHS dentist care

Participants highlighted the difficulties in accessing NHS dental care, including long waiting lists and difficulty accessing dental specialists as a necessary part of their hospital care. This reflects similar difficulties experienced by civilians in accessing NHS dentists. However, for veterans the disparity with dental access during their time in service was marked and therefore this felt heightened for them.

> *"Well the... the dental side is... is a different story, it has been very challenging to get an NHS dentist. And... because there's other things that we... we've never paid for it, we've never paid for it, we've never had issues in getting seen or... or getting treatment [in the military], and then we find ourselves with no dentist and not able to enrol in a dentist, and it took us about (umm) four years to get a dentist."* ***Participant 81***

4.6.5 Alternative therapies

Many ex-servicewomen reported accessing alternative therapies for their physical health concerns. This included acupuncture, massage, reflexology, reiki, aromatherapy, osteopathy, chiropractic, wellness clinics, alternative medicines, Pilates and yoga, and mindfulness. Physiotherapy was the most discussed alternative treatment type.

Participants often discussed accessing these services to manage chronic pain, as an alternative to prescription medication or because traditional medicine had not provided them with the results they desired. Others had received good access to specialist alternative therapy during military service with very positive results, and therefore actively sought (and paid for) this post-service.

> *"The best thing that ever worked was as I said... this ear acupuncture I had in... in... when I was in [overseas] which was just the most amazing pain relief! I was literally kind of flown into work from... from having got up in the morning to not being able to... losing my... catching my breath, my pain was so bad just walking in... to then being... I felt like I could like fly. It was amazing."* ***Participant 33***

Some participants discussed accessing alternative therapies via the NHS, in particular physiotherapy. However, this was often associated with long wait times and difficulties in accessing specialist care for their specific physical health needs, short appointment times and a very hands-off approach. As a result, many sought these services privately, sometimes in addition to NHS services.

> *"So I know when I've been referred to a physio by the NHS, then... the baseline for successful physio treatment is that you can walk. So it's very basic level, whereas actually you know what you get privately is more hands-on treatment and more to the level that you require, not just the basic so that you can get out of the door."* ***Participant 30***

The private nature of most of these services created cost barriers to participants in accessing the care they needed.

> *"I don't have the money to go and see somebody. I... I enquired about (umm) a physio appointment the other day and they wanted £75."* ***Participant 5***

Participants described mixed results from accessing alternative therapies, with some reporting good results and others experiencing no benefit. Where there was benefit in relieving physical symptoms, this was sometimes temporary and required them to access regular treatments.

> *"[Acupuncture] Excellent. It was really good. And I've done my own meditation as well (umm) just to keep me sane and that. ... I pay for that. But all... I think all of these alternative therapies should be included in NHS because they're absolutely brilliant. I think they work."* ***Participant 21***

As with general difficulty in adapting to the NHS offer in comparison to military healthcare, participants reported a similar frustration in finding an equivalent level of skill in support of physical fitness to address physical health difficulties.

> *"But actually in Civvy Street it's been really hard to find a personal trainer that can manage with your injuries as well, so (umm) I don't know... I think you call them (umm) rehab... I don't know. I can't remember what we called them in the... in the [military]. Like a rehab personal trainer, so somebody that's a personal trainer, but then had training in sports massage and kind of injuries and all that kind of stuff. So trying to find somebody in Civvy Street [LAUGH] that can be a personal trainer... around and working with you and your injuries and your rehab has been like really difficult." Participant 30*

4.6.6 Private healthcare

Many who accessed private healthcare did so to access specialist care for their specific physical health condition that was not available on the NHS, in a similar way to civilians.

> *"I used my private cover to see a menopause specialist [...] she prescribed me some HRT [hormone replacement therapy]. (umm) So the... initially the local GP access experience wasn't great because it was very black and white (umm) and no further support."* ***Participant 30***

Participants predominantly reported positive experiences with private healthcare, including being seen quickly, longer and more thorough appointments, and receiving additional care through specialist consultants.

> *"You know my rheumatologist, you know sort of... that you know he spends quite a bit of time with me."* ***Participant 45***

For those who didn't have health insurance, the cost of private healthcare was significant, and sometimes acted as a barrier to accessing or continuing required care.

> *"The lady I spoke to was a... a private menopause specialist, but who dealt in nutrition. So she was a nutritionist. That cost me £400 a month which I couldn't afford for any period of time."* ***Participant 82***

4.6.7 Gender-specific healthcare experience for ex-servicewomen

While many of the experiences related to women's health mirror those of the civilian population, as outlined in 4.2, there were some areas where being military-connected created additional challenges. Specifically, many women reported having female-specific health conditions either not picked up at all during service (due to dismissive attitudes, lack of knowledge or the male focus of some medics), or significant delays in diagnosis and treatment (due to the above, combined with the challenges of joint NHS/Medical Defence Services care). These issues left a legacy and/or greater degree of complexity post-service, both in terms of treatment options and health outcomes. This is further detailed in section 4.8.

> *"I had endometriosis. It was misdiagnosed when I was in the Navy. And by the time they'd diagnosed it, it was too late. (umm) ... by the time I'd got referred to a... gynaecologist here in [Edinburgh] privately... (umm) the (umm) he did a few exploratory things and said (umm) my fallopian tubes were just basically covered in endometriosis, and it was very unlikely that I would ever get pregnant."* ***Participant 87***

Those who were also military spouses reported difficulties in accessing treatment for female-specific health issues due to frequent relocation.

4.7 Theme 4: Experiences of accessing charitable support

Theme summary:

The most common reasons participants accessed services from veteran charities included: access to sports and arts-based programmes and activities; peer support opportunities; support with daily living (e.g. advice and support around navigating needs, pain management and travel support); and financial help (e.g. support for assistive technology, mobility and other aids, adaptions around the home, and support navigating the war pensions, Armed Forces compensation scheme and welfare processes).

In terms of civilian charitable support, participants discussed seeking support that helped them advocate for their care, specialised health condition support, and peer support with those who had the same or similar healthcare needs.

Whilst many shared positive experiences of accessing charitable support, barriers to access and difficult experiences of support were also discussed by some. These included a lack of awareness of what charitable support was available for physical health, practical access issues, challenging initial contact experiences and internal barriers. Many of the internal barriers discussed reflected challenges highlighted in previous research with ex-servicewomen, including a perception that services were not for them and were intended for ex-servicemen with combat-related needs. This is outlined in more depth as a cross-cutting theme in section 4.8, particularly in relation to the internal barriers to asking for help associated with military service.

4.7.1 What did women access charity support for in relation to their physical health?

Civilian charities

Ex-servicewomen shared their experiences of civilian health charities supporting them to advocate for their healthcare needs. This included support with complaints, helping them to better understand their health, and facilitating access to experts in the field who could discuss and provide advice on the best treatment or management options. Additionally, participants described accessing health condition-specific peer support groups, which were beneficial.

> *"[in relation to a civilian cancer support charity] ... so they'd like answer like little questions like that, they've got support groups, they've had professionals come in to do like webinars and talks. And they were really person-centred and they... any... any query it... it was okay to ask them that, what... you know whatever query it was. And they looked up and found... found information for me."* ***Participant 16***

Ex-military organisations/charities

Practical support

While many women had not accessed support for their physical health from veteran charities, those who had described several ways in which they utilised this support. For some, this involved ongoing support with managing their physical health and day-to-day life, including check-ins on their well-being and utilising support aids, for which some charities offered financial help.

> *"The practical help to put some stuff back into my, how to manage my actual real life as opposed to this theoretical new life I was going to have. So that was excellent, and actually it was... it was definitely conversations with [military charity] in that year after that helped me know what I would or wouldn't be entitled to. And I'm pretty confident if I'd have asked her anything she'd have signposted me in the right direction for it."* ***Participant 33***

Others found veteran charities especially helpful with financial advice around budgeting, navigating the benefits system, employment support, military pension and compensation processes, and to help with travel costs related to their physical health needs.

> *"They've helped with food vouchers, they helped with some of my energy bills, they... because they approached the corp that I was with. Yeah, they've just... they've just been you know invaluable really. I... I don't know how else I would have got through it when I wasn't working."* ***Participant 94***

> *"... the [military charity] because I appealed my medical discharge pension, so they provided me with some legal support and help [me] to represent myself. ... I was really grateful for actually [LAUGH] feeling that I had some support. And like again that's probably the first time I felt supported."* ***Participant 33***

Sports and arts-based activities

Sports and arts-based programmes were particularly popular, offering opportunities for socialising, camaraderie and physical activity that improved confidence. Women shared how creative activities, which included painting, lino cutting, sculpture, photography, theatre and comedy, supported their well-being in many ways, giving them an opportunity to express themselves, build confidence and provide time for mindfulness. These were particularly beneficial in supporting individuals to manage the challenges they faced more positively, often with like-minded peers.

> *"I have been to some of their health and well-being activities, so they run craft activities and all sorts of stuff. Which again is a good social conversation with people who understand what living with chronic illness is like because quite a few of them have also got chronic illnesses, but also just having somebody to talk to who understands service life and you know that sort of thing."* ***Participant 1***

> *"I think the first event I did with them was actually a canoeing event and we camped overnight on the... on the river near [location], and it was just really nice to... go out in the sunshine and do something physical that I was able to do with other like-minded individuals, you know."* ***Participant 2***

Underscoring the individuality of need, some women described flourishing in mixed group settings, including where the majority of members were men. Other women shared their preference for women-only opportunities.

> *"Well it's where women can express themselves. Women-related problems... and that sort of... it... it... it... it's just... they're brilliant, they are absolutely brilliant. As far as I'm concerned it's changed my life around, it's... helped me so much."* ***Participant 43***

Chronic pain/rehabilitation programmes

Related to the impact of living with chronic pain outlined in section 4.4, a couple of participants

had accessed intensive rehabilitation programmes and pain management courses through veteran charities and found these particularly helpful for managing their conditions.

> *"... they're informative and they're really helpful. It... I would say they're definitely worth doing. Did you understand about pain and the CMS and they're sympathetic and parasympathetic, and how you can bring your CMS down. So... you can't get rid of the pain, but can bring... if it's a ten, you can bring down by learning different techniques. And I think that's very important."* ***Participant 11***

Those who were able to access rehabilitation centres and programmes rated these as being highly beneficial. However, many also spoke about the closure of a number of these, or the lack of access and the detrimental impact of this.

> *"You know... and I know people are very disappointed like things like the... recovery centres have been passed back to the MOD, and they can't access them anymore. But I think that's sort of... yeah, recovery where you... actually were supported in your recovery would be something we... we lack in this country."* ***Participant 45***

4.7.2 What were the barriers to accessing charity support for physical health?

Internal barriers

While internal barriers related to military service are outlined in more detail in section 4.8, some women described these specifically in relation to why they had not yet accessed charitable or third sector support. Women described internal barriers such as not wanting to ask for help, feeling as though their health was not bad enough or worthy of support, and difficulty engaging with ex-military support due to previous negative military experiences.

> *"It's not open to me because I... you know I... although I'm a veteran, I always think well there's people that have got greater needs than I have. So... not something that I've explored, and I wouldn't... as awful as it sounds, I know [military charity] and things are out there, but I wouldn't know how to start. Because I don't feel that... you know I'm a... a high enough priority case. Does that make sense?"* ***Participant 82***

Some women shared a perception that veteran charities were not for them, and considered that these services were intended for men or those who had physical health needs related to combat.

> *"I'm a woman and... you know I haven't been in a... a war zone, I haven't served in a... you know a military situation where I'm under threat therefore I... I can't access those things because they're not for me!''* ***Participant 82***

Lack of awareness of support available for physical health conditions

Awareness of charitable support varied within the sample. Some were not aware of the support available to them, and some were only aware of the larger veteran charities and organisations.

Some noted how they had become more aware of available support in recent years. Importantly, some ex-servicewomen were not aware of veteran services that were specifically offered to support physical health.

> *"... No, there's... not that I'm aware of. I mean I could tell you that... the thing what we do have access to is you can go to [charity] if you... you know if you need help, if you've got no money, if you've got problems. I don't need that help, you know. You kind of... and then you've got the [charity] and you've got other services. But that's more... not for this, and my problem, my... my physical problems. That's more from a financial point of view."* ***Participant 12***

> *"So I find that chronic fatigue isn't widely understood. And I think that's in terms of being a veteran is not always easy in terms of if you're... you know looking for some kind of support perhaps. You know if I had... you know lost a limb then that's very obvious what the problem is. I think that post-traumatic stress is not well understood, but it's certainly got a higher publicity factor I guess against it."* ***Participant 2***

Practical access barriers

The accessibility of support offered in terms of timing and location presented challenges for some ex-servicewomen. Women described difficulty taking up support offered to them due to work commitments and other responsibilities. Furthermore, women described limited local support and challenges travelling to some locations for one-off activities or courses.

> *"I couldn't... and I tried to catch up on it and it... it doesn't work because you're trying to fit it in... in between jobs and stuff."* ***Participant 11***

Challenging initial contact

A few participants described challenging initial experiences when seeking support from ex-military organisations and charities. These women described difficult and frustrating experiences that could feel at times like a 'fight' for support, which had put them off.

> *"Firstly... the first thing they did was they came and went no. So I went back and I went yes, you are going to do this! [LAUGH] And pushed them, and then welfare then pushed them ... But their first response was always no. Unless you went back and pushed and pushed. And I found that really hard, and that... and that's probably one of the reasons that I won't try and access any of the service charities now is... I know I'd have to get through that gatekeeper of [charity]. And it's... so when you have a condition like ME, and you've got me on a good day today!"* ***Participant 1***

Others shared their experiences of feeling dismissed whilst trying to access support.

> *"... I wasn't veteran enough to get the service sort of thing! [LAUGH]"* ***Participant 45***

4.8 Cross cutting theme: Impact of military service on accessing support

Theme summary:

Although outlined briefly in themes 1-4 as a theme that pervaded all aspects of the women's narratives, military service and culture shaped their attitudes and responses to their physical health conditions and/or help-seeking in many ways.

Impacts of military culture included stigma around sickness and injuries and expectations of high levels of physical fitness. This led ex-servicewomen to push physical boundaries post-service, often to the detriment of recovery. The gendered legacy of the hypermasculine military environment escalated their self-expectations.

Furthermore, for some participants, their experiences of healthcare in-service affected their health conditions post-service, particularly for female-specific conditions. In addition, participants' approach to healthcare post-service, including not feeling able to question healthcare professionals' decisions, and in some cases reluctance to access support, was attributed to negative healthcare experiences during service.

4.8.1 Influence of military culture on asking for help

A commonly discussed area was how military culture continued to influence women's health behaviours post-service. Many women described a culture of stigma around 'going sick' in-service. They recounted how during their military careers there was pressure to push themselves physically and demonstrate resilience by avoiding medical treatment. Some who failed to meet this cultural ideal faced social repercussions including being mocked and given negative labels such as 'sickie', 'sick, lame, and lazy' or 'X', which was disguised as banter.

> *"My time in the [military] it was ... going sick... or... which was similar to going to see a GP, that was... laughable. And it was... discouraged and looked down on and it... and you got a lot of... they call it banter. I hate that word because I think it's... actually covers up an awful lot of sins."* ***Participant 3***

Many women shared how these expectations continued to influence their perceptions of help-seeking post-service, with women describing waiting until they perceived their health need to be serious, preferring to 'just get on with it' for as long as possible, together with a military-cultivated sense of independence.

> *"That is how my attitude developed, and you know was created around just suck it up unless it's... unless like you say your leg is literally hanging off. But that certainly isn't how I feel now! [LAUGH]"* ***Participant 7***

In some cases, aspects of military culture influenced help-seeking behaviours extending beyond medical care to other forms of support, for example from friends or family.

"I don't in a way I don't like bothering people. I... it might be from... from being in the Army I guess as well, like you just... you just get on with it." ***Participant 108***

On a positive note, a few women reflected on how military humour helped them remain positive whilst navigating challenging circumstances related to their physical health.

"One thing I will say that the military has... has given me is... is such a... a wicked sense of humour to... to try and... or to try and look on the bright side of dark moments [...] ... I've got... kind of resilience I suppose (umm) of dealing with things." Participant 19

4.8.2 Pushing bodies to the limits

Military cultural attitudes towards health also influenced ex-servicewomen's attitudes to managing their health conditions. Many women spoke about military culture instilling in them a desire to 'crack on' and keep going, which resulted in many continuing to push to the boundaries of their physical health post-service.

"I think originally it was a case of you... you did just get on it. If you've got a broken leg, you've got another leg! So I... I pushed myself a lot through my training especially because I did the men's training as well and you had to pass the men's training at the same standard. And I remember like strapping ankles up, taking loads of pills, just to get through. Because you didn't want to fail, you didn't want to not go through. ... I've got quite a mind-set for pushing through. But now that my body's older, I'm far more aware that it can't take that anymore, and I do have to listen to it. I might listen to it, but whether I take the advice or not from parts of my body is another issue! But I... I certainly pushed my body to the complete limits when I was in the forces for anything and everything." ***Participant 105***

For many there was a gendered element of service legacy that acted as a barrier to asking for help post-service. Participants described additional pressure to demonstrate strength as women in the Armed Forces, including keeping up with their male colleagues during training, proving themselves in a hypermasculine environment and avoiding being seen as weak.

"I think that's probably the biggest risk is... women leaving thinking that they have to be in that kind of cut-throat environment still... surrounded by blokes and... and that's probably why they're not accessing the healthcare they need. Because they're still in that kind of mentality..." ***Participant 27***

Furthermore, it was clear that the highly active lifestyle that many led in service remained a key aspect of their lives post-service. As reported previously when considering the impact on sports and hobbies (section 4.4), some women continued to want to remain highly active and had high expectations of what they should be able to achieve physically. For some, being unable to meet these expectations was frustrating and had a negative impact on their mental health.

"But I'm like 'no get in the pool... get in the pool'. And you know really when you're like... oh I need to get out of the house, I feel like I have to get out of the house every day doing something. And I don't give myself the proper time to rest that I need to." Participant 92

4.8.3 Not feeling able to question care

Some ex-servicewomen spoke about the hierarchical nature of accessing healthcare in the military, with healthcare providers often of a higher rank, and the impact of this post-service. They viewed civilian healthcare providers as authority figures, with associated feelings of power and control, and shared how this made it difficult for them to question choices or advocate for themselves in decisions around their care, a core principle of the NHS provision and patient charter.

"It... it's almost... even doctors now, I'll go to my doctor and I still see them as an authoritarian figure. And I leave and I think why did I not question that? Because... it's just... and especially when you're not feeling great, the last... you know. It... it's... it's just ingrained in you. Even if you're an [officer] yourself, there's... there's still that... that doctor is... not God, but you... you know what I mean, it's kind of that higher standing." ***Participant 52***

One participant described how she only recently felt able to advocate for her health needs.

"... I would have gone yes, ma'am, you're a nurse, you're in authority, I'll do exactly what you say. And I'm only really catching onto that now that you can say no! [...] and this is the authority thing." ***Participant 39***

However, it is important to note that not all felt this way. One participant, for example, reflected on how her military service equipped her well to advocate for her physical health support needs.

"I'm quite tenacious and... and [LAUGH] once I get my teeth into something and I think this is service-minded. I don't tend to be... brushed off if... you know especially if I know that I'm right. ... and the forces have done that, they do make you... because I joined when I was seventeen and a half, they do give you that sense of independence and that sense of being able to be a little bit more assertive I think." ***Participant 82***

4.8.4 Negative and gendered experiences of healthcare in service

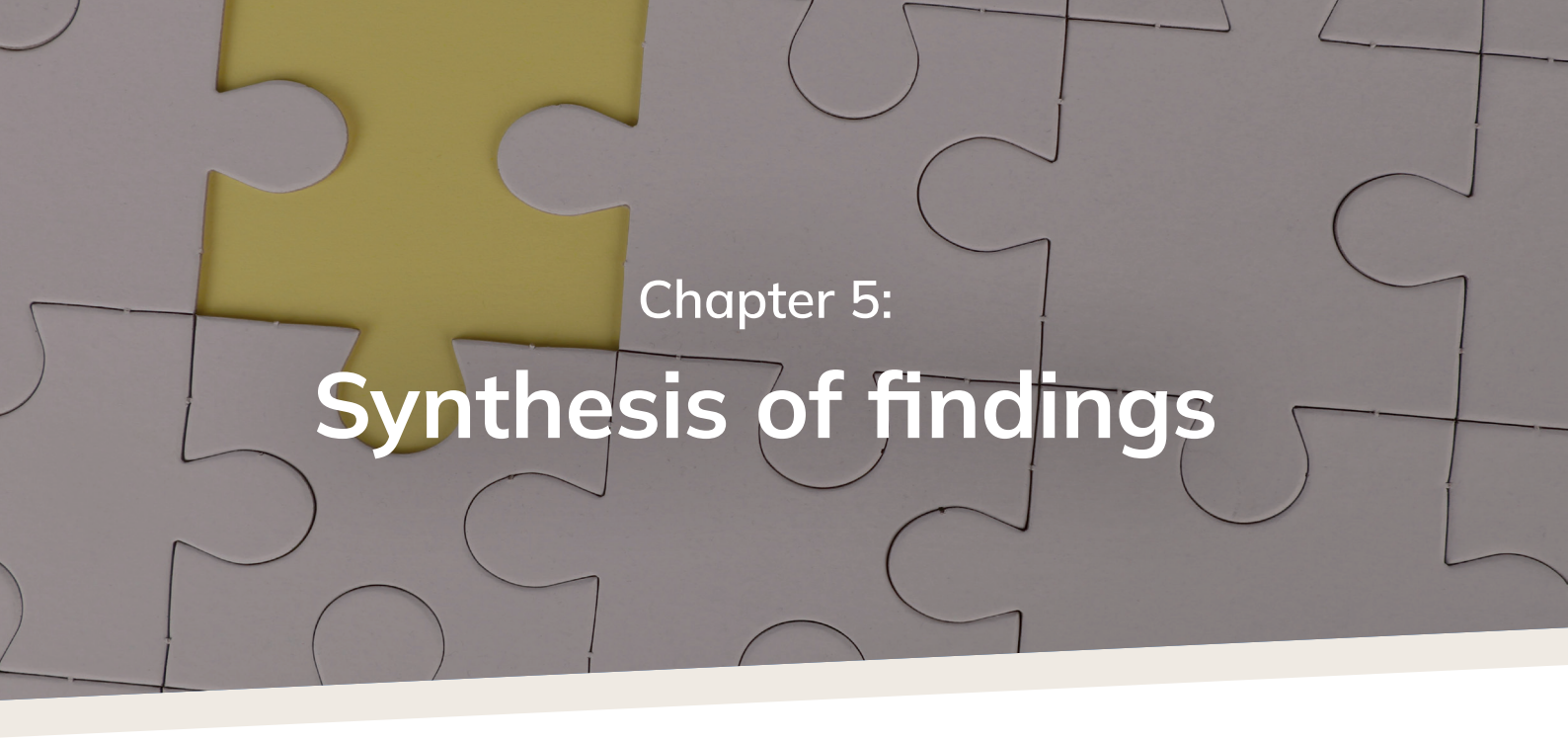
Negative in-service experiences of accessing support for physical health, including female-specific health issues, subsequently lessened some participants' willingness to access support post-service due to concerns that these experiences would be repeated. Additionally, some ex-servicewomen talked about the impact of difficult medical discharge experiences, and unprofessional and dismissive behaviour while serving.

"Talking to friends that were military [medically] discharged as well, there is that fear that I went to the doctors, I went to get help, I lost my career. So you're even more unlikely to go really, you're sort of more on edge about... no, I don't want to go to the doctors because doctors let me down before. [...] They didn't help me, they ruined my life!" ***Participant 95***

"... because of the way... the medical staff, some of them were (umm) yeah, you're not in a rush to go back sort of thing. I had one doctor at [location] and he was a civilian and I was... I was depressed then. And his response was I don't know what you're trying to pull (umm) but this record will follow you into Civvy Street and you won't get a job sort of thing. (umm) And he wasn't interested and it puts you off going back." ***Participant 15***

In relation to female-specific health conditions, as noted in section 4.6, participants had experienced misdiagnosis and delays in treatment for female-related health conditions in service due to a lack of understanding of women's health, the dismissive attitudes of some defence medics, and difficulties related to disjointed Defence Medical Service and NHS care. This meant for some their health had been adversely impacted, physically or psychologically, for example in relation to infertility or pregnancy loss. This lack of understanding and sensitivity had had a lasting impact on their sense of trust and willingness to seek help post-service.

"The pregnancy thing (umm) and being sent away, yeah it was very much a... a... a decision that I chose because I knew what the pathway was for me in the military. It was either... then I turn to my boss and say oh by the way, can't go (umm) or I... I go [...] But the sad thing after that is (umm) I... I... I've just not been able to conceive. (umm) I had a terrible abortion (umm) and... yeah." ***Participant 19***



Chapter 5: Synthesis of findings

This research begins to address the significant gap in understanding the physical health needs and healthcare experiences of UK ex-servicewomen, a population historically underrepresented in both national and international veteran studies. Drawing on a comprehensive mixed-methods approach, the study triangulates findings from a scoping literature review, analyses of existing quantitative datasets (UK Biobank, Op RESTORE, Defence Medical Welfare Service) and in-depth qualitative interviews with 40 UK ex-servicewomen. The research explores the prevalence and types of physical health conditions affecting ex-servicewomen, the impact of military service and gendered occupational exposures, and the barriers and facilitators to accessing appropriate healthcare support after service. By integrating these multiple sources, the study provides new insights into the specific challenges faced by ex-servicewomen, highlights persistent gaps in service provision and research, and offers evidence-based recommendations for improving care pathways, practitioner awareness and policy for this underserved group.

5.1 Physical health needs of UK ex-servicewomen

5.1.1 Prevalence of musculoskeletal conditions and injuries

Multiple data sources identify musculoskeletal issues such as osteoarthritis, back pain and joint injuries as prevalent among ex-servicewomen. The UK Biobank data analysed in this study shows that ex-servicewomen have higher odds of osteoarthritis compared to ex-servicemen, but no difference was found with civilian women. Ex-servicewomen in the DMWS dataset were also more likely to report musculoskeletal conditions compared to ex-servicemen. These findings should be interpreted with caution as they represent those seeking support from DMWS, rather than an age-matched sample. However, the younger age of ex-servicewomen compared to the men in the DMWS sample is notable, considering the prevalence of musculoskeletal issues generally increases with age[145].

145 World Health Organization. (2022). Musculoskeletal health. https://www.who.int/news-room/fact-sheets/detail/musculoskeletal-conditions

Military service has been associated with increased risk of musculoskeletal injuries for both men and women internationally[146] [147]. However, previous research in the UK has identified a higher rate of musculoskeletal conditions in female trainees compared to males during initial training[148]. For example, female Army recruits are found to be 10 times more likely (and RAF recruits 48 times more likely) to sustain a hip or pelvis stress fracture than their male counterparts. Cited contributing factors have included ill-fitting body armour and uniforms, and the smaller stature, lower muscle mass and higher fat/mass ratio of women as exacerbating injury risk during load-bearing tasks. Whilst trainees represent a younger sample than those explored in the datasets in this study, the longer-term impact of musculoskeletal injuries during military service has not been thoroughly explored in UK ex-servicewomen.

Qualitative interviews in this study further underscore this, with most women reporting musculoskeletal issues (29/40). Whilst for some women these issues may have developed post-discharge, women described injuries related to the long-term impact of heavy lifting, prolonged physical activity and poorly fitting equipment designed for male bodies. Many participants associated their ongoing pain and mobility issues with service-related wear and tear, often citing specific injuries such as knee trauma from vehicle accidents or back injuries from carrying heavy loads.

However, musculoskeletal issues were not found to be higher in ex-servicewomen when compared to men seeking support from Op RESTORE. Further, in contrast to previous international research [149], the UK Biobank data analysis did not identify a difference between ex-servicewomen and civilian women in osteoarthritis, when accounting for obesity and smoking. Possible explanations include the shorter average service duration among ex-servicewomen in this sample (six years), which may limit exposure to service-related risks, and the higher rates of obesity and smoking among ex-servicewomen. Overall, these findings highlight the complex interplay between military service, lifestyle factors and musculoskeletal health in ex-servicewomen.

5.1.2 Gender-specific and reproductive health conditions

Previous research indicates that UK servicewomen may be at increased risk of reproductive health issues, including infertility[150], in comparison to civilian women. Women may face additional barriers to accessing reproductive healthcare during military service that may impact their long-term reproductive health, including transience, access to women's health specialists during service and access to appropriate care on deployment[151]. UK ex-servicewomen appear to be more at risk of

146 Hinojosa R, Hinojosa MS (2016) Activity-Limiting Musculoskeletal Conditions in US Veterans Compared to Non-Veterans: Results from the 2013 National Health Interview Survey. PLOS ONE 11(12): e0167143. https://doi.org/10.1371/journal.pone.0167143

147 Thompson JM, Van Til L, Poirier A, Sweet J, McKinnon K, Sudom K, Dursun S, Pedlar D. Health and Well-Being of Canadian Armed Forces Veterans: Findings from the 2013 Life After Service Survey. https://www.veterans.gc.ca/en/about-vac/research/info-briefs/veteran-physical-mental-health

148 Ministry of Defence. (2016). Interim report on the health risks to women in Ground Close Combat Roles. https://assets.publishing.service.gov.uk/media/5a80af3aed915d74e33fbd2a/20160706_ADR006101_Report_Women_in_Combat_WEB-FINAL.PDF

149 Fallon EA, Boring MA, Foster AL, Stowe EW, Lites TD, Allen KD. Arthritis Prevalence Among veterans - United States, 2017-2021. MMWR Morb Mortal Wkly Rep. 2023;72(45):1209-1216.

150 Thiel, M. (2024) Prevalence of female infertility in the UK Armed Forces (PhD Thesis). Prevalence of female infertility in the UK Armed Forces

151 Kinkaid VE, Guest R, Willman A, et al (2025). Experiences of abortion in the UK Armed Forces: a cross-sectional survey. BMJ Military Health. https://srh.bmj.com/content/early/2025/01/31/bmjsrh-2024-202513

ovarian and breast cancers, with the Scottish Veterans Health Study reporting higher prevalence compared to civilian women born after 1960[152]. The UK Biobank dataset includes gynecological conditions, but the small number of ex-servicewomen with these conditions in this sample meant it was not possible to conduct a comparative analysis with civilian women.

Participants in qualitative interviews reported ongoing challenges with menopause, gynecological health and fertility, often experiencing delays in diagnosis and treatment. Whilst these access barriers are also reported in civilian women, the impact of service on women's reproductive health more broadly has not yet been thoroughly investigated. Women in the qualitative interviews reported a perception that delays or failure to diagnose reproductive health conditions associated with increased risks of infertility (such as endometriosis/polycystic ovaries) during their service had left a lasting legacy post-service.

5.1.3 Neurological conditions

The Scottish Veterans Health Study identified higher rates of multiple sclerosis (MS) among ex-servicewomen compared to men, consistent with civilian gender patterns. UK Biobank data indicates that ex-servicewomen are almost three times as likely to experience migraine compared to men. Gulf War veteran studies also report women experiencing more fatigue and headaches than men. Qualitative data in this study revealed women experiencing neurological symptoms such as fatigue, headaches and nerve pain, which they often linked to service exposures or injuries. This is broadly reflective of gender patterns in the general population[153]. Indeed, no differences were identified in neurological conditions between ex-servicewomen and civilians in the UK Biobank data.

5.1.4 Chronic conditions and comorbidity

Chronic conditions were frequently reported across the datasets and interviews analysed for this study. DMWS data indicates increased rates of autoimmune disorders in ex-servicewomen compared to men presenting to the service (3.1% vs 0.9%), and the UK Biobank data identified an increased risk of thyroid disorders in ex-servicewomen compared to men, after controlling for demographics, smoking and obesity. Both findings reflect gender differences in the general population[154] [155]. However, ex-servicewomen were found to be at increased risk of COPD compared to civilian women in the UK Biobank data, after controlling for demographics, obesity and smoking. This suggests that occupational exposure or military lifestyle factors may be increasing the risk of COPD for ex-servicewomen.

Women in the qualitative sample described how chronic and complex health conditions impacted daily function, mental health and social participation. The intersection of physical and mental

152 Bergman, B.P., 2015. The Scottish veterans health study: a retrospective cohort study of 57,000 military veterans and 173,000 matched non-veterans (Doctoral dissertation, University of Glasgow).

153 Global, regional, and national burden of migraine and tension-type headache, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet Neurol. 2018;17(11):954-976.

154 McGrogan, A., Seaman, H.E., Wright, J.W. and De Vries, C.S. (2008), The incidence of autoimmune thyroid disease: a systematic review of the literature. Clinical Endocrinology, 69: 687-696. https://doi.org/10.1111/j.1365-2265.2008.03338.x

155 Conrad N, Misra S, Verbakel JY, Verbeke G, Molenberghs G, Taylor PN, Mason J, Sattar N, McMurray JJV, McInnes IB, Khunti K, Cambridge G. Incidence, prevalence, and co-occurrence of autoimmune disorders over time and by age, sex, and socioeconomic status: a population-based cohort study of 22 million individuals in the UK. Lancet. 2023 Jun 3;401(10391):1878-1890. doi: 10.1016/S0140-6736(23)00457-9.

health was evident, with many women reporting that their physical ailments exacerbated mental health challenges like depression and anxiety. In particular, some ex-servicewomen described how the legacy of their highly active lives in-service continued to influence their expectations for their physical health and their desire to be involved in sports and other physical activities, which made it difficult for some ex-servicewomen to adjust if unable to engage in these activities.

5.1.5 Health behaviours

UK Biobank data suggests that UK ex-servicewomen have a higher prevalence of smoking and obesity than civilian women. Previous research in the UK concurs with these findings, reporting that ex-servicewomen are significantly more likely to report having ever smoked than civilian women (51% of working age and 57% of retirement age ex-servicewomen smoked, compared to 39% and 41% of civilian women, respectively) [156]. Military service as a risk factor for smoking initiation has been highlighted in UK and international research and linked to the historical embedding of smoking as a cultural norm in military life, as a form of stress relief during training and deployment, and to psychological distress and mental health symptoms in service personnel[157] [158] [159].

Previous research focused on obesity in UK ex-service personnel is limited. Studies have focused on ex-service personnel seeking support for mental health issues and suggest a higher rate of obesity in this population compared to that seen in the general population[160] [161]. However, the number of women in these samples was either too small to enable meaningful analysis, or data was not disaggregated by gender. Obesity in ex-service personnel may be related to lower levels of physical activity, health problems and lifestyle changes following discharge from the military.

Importantly, analysis of the UK Biobank data found that differences in general health and the prevalence of osteoarthritis in ex-servicewomen compared to civilian women were no longer significant following adjustment for smoking and BMI. This suggests that the higher prevalence of smoking and obesity may contribute to long-term physical health conditions in ex-servicewomen compared to civilian women.

5.2 Care experiences and systemic barriers

5.2.1 Transition from military to civilian healthcare

Interview participants consistently reported difficulties transferring medical records, with many experiencing delays and loss of records. When service personnel leave the military, they receive

156 Ministry of Defence. (2019). Annual Population Survey: UK Armed Forces Veterans residing in Great Britain, 2017. https://assets.publishing.service.gov.uk/media/5c51b63440f0b625504f45a1/20190128_-_APS_2017_Statistical_Bulletin_-_OS.pdf

157 Ministry of Defence. (2019). Annual Population Survey: UK Armed Forces Veterans residing in Great Britain, 2017. https://assets.publishing.service.gov.uk/media/5c51b63440f0b625504f45a1/20190128_-_APS_2017_Statistical_Bulletin_-_OS.pdf

158 Williams JF, Fuller M, Smith MB. (2020). Smoking habits of UK military personnel on deployment: Exercise SAIF SAREEA 3. BMJ Mil Health, 166(6):396-400. doi: 10.1136/bmjmilitary-2019-001364.

159 Thandi G, Fear NT. (2017). Factors associated with smoking behaviour change in UK military personnel. Occup Med (Lond), 30;67(9):712-714. doi: 10.1093/occmed/kqx149.

160 Williamson V, Rossetto A, Murphy D. (2020). Relationship between obesity and health problems in help-seeking military veterans. BMJ Mil Health;166(4):227-231. doi: 10.1136/jramc-2019-001155.

161 Sharp, M-L., Busuttil, W., & Murphy, D. (2019). Examining physical health conditions and associations of pain, obesity, and function of UK Veterans diagnosed with PTSD and other mental health conditions. Journal for Military, Veteran and Family Health, 5(2). https://combatstress.org.uk/file/7669/download?token=qe4-MPb1

a FMed133A form, a summary of their medical history intended for civilian GPs. However, this document contains limited information, omitting details such as treatment history and medication records, and full records must be requested by the GP. Previous research in the UK suggests significant challenges in transferring medical records following discharge, with one study reporting that 20% of medically discharged personnel experienced delays of six months or more[162]. Furthermore, ex-servicewomen reported difficulties navigating complex NHS pathways post-discharge, something that has previously been reported in research with UK ex-servicewomen[163].

5.2.2 Access to veteran-specific services

While some women reported positive experiences with veteran-specific services such as Op RESTORE or Veterans First Point, many faced barriers including lack of awareness, limited availability and long waiting times. Additionally, whilst some ex-servicewomen found reporting their veteran status was beneficial to their care, others felt that their veteran status was not sufficiently recognised or acted upon in civilian healthcare settings. The NHS's veteran-friendly accreditation was perceived as symbolic rather than impactful for some. Women also reported feeling that healthcare professionals in veteran services lacked understanding of their unique needs as women with a military background. These barriers to accessing specialist and veteran services have previously been reported in UK ex-servicewomen[164]. Furthermore, they felt that veteran services did not have sufficient expertise in female-specific health issues like menopause or gynaecological health. However, it is recognised that these barriers to women-specific healthcare are also reported in UK civilian women[165].

5.2.3 Barriers to primary and secondary care

Common barriers reported in accessing NHS care reflected those seen in the UK general population, including long waiting times, lack of awareness of services, difficulty obtaining timely appointments and geographic disparities[166]. Ex-servicewomen also reported challenges in accessing NHS dental care and physiotherapy, often resorting to private providers due to long NHS waiting lists. Dissatisfaction with NHS services was exacerbated by the disparity perceived between secondary care provided during and after military service, with military healthcare services considered to be superior. Qualitative data highlighted that ex-servicewomen's perceptions of healthcare professionals' understanding of military and gender-specific health needs also influenced their willingness to seek care.

162 Help for Heroes. (2019). Improving the medical discharge process. https://www.helpforheroes.org.uk/media/filer_public/2e/c6/2ec631bc-5430-4aa3-819f-f468be517423/2019_0053-medical-discharge-policy-paper-aw.pdf

163 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

164 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

165 House of Commons Women and Equalities Committee. (2024). Women's reproductive health conditions. https://committees.parliament.uk/publications/45909/documents/228040/default/

166 Aston University. (2023). Barriers encountered to access NHS services. https://www.aston.ac.uk/sites/default/files/2023-10/Infographic%202%20-%20Barriers%20encountered%20to%20access%20NHS%20services%2010.07.23.pdf

5.2.4 Experiences with alternative and private healthcare

Many ex-servicewomen reported accessing private physiotherapy, acupuncture and other therapies to manage physical issues, particularly chronic pain, citing better quality of care and shorter waiting times. However, costs posed significant barriers, especially for those without private insurance. Some participants expressed frustration that such therapies were not routinely available through the NHS, despite their perceived benefits. There is a lack of research in the UK looking at the use and impact of alternative therapies to manage physical health in ex-service personnel.

5.2.5 Charity and community support

Ex-servicewomen frequently accessed charities for practical support, advocacy and social engagement. Support ranged from assistance with navigating benefits and compensation claims to participation in sport and art programmes. While many found these services beneficial, others encountered internal barriers such as lack of awareness, perceived stigma or feelings that services were not tailored for women. These barriers to accessing charitable support have previously been reported in research with UK ex-servicewomen[167].

5.2.6 Impact of military culture on help-seeking

A cross-cutting theme, impacting ex-servicewomen's experience of accessing care and managing their health, related to the emphasis of resilience and self-reliance during military service. This cultural attitude persisted post-service and discouraged women from seeking help. Many described perceived stigma around 'going sick' and a tendency to push through pain, which delayed help-seeking and sometimes worsened health outcomes. This was compounded for women by the need to prove their worth as a result of their gender. Ex-servicewomen who experienced dismissive or unprofessional treatment during service reported greater reluctance to access healthcare post-discharge. Negative experiences such as unhelpful discharge processes or dismissive attitudes towards women's health concerns created distrust and internalised barriers to seeking support later in life. These findings are repeated across the existing UK literature on barriers to care for ex-servicewomen[168]. Furthermore, the hierarchical nature of healthcare during service (i.e. receiving care from those of higher ranks) also contributed to difficulties in questioning or advocating for their needs, with some women feeling disempowered within civilian healthcare settings.

167 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

168 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Wood, D., Fossey, M., Price, P., Powell, D., Chalkley, H., Davidson, M., & Godier-McBard, L. (2023). I don't feel like that's for me: Overcoming barriers to mental healthcare for women veterans. https://www.centreformilitarywomensresearch.com/wp-content/uploads/2023/11/ARU_CMWR_VisualSummary.pdf

Godier-McBard, L., Gillin, N., & Fossey, M. (2021). We Also Served: The health and well-being of UK female veterans. https://www.centreformilitarywomensresearch.com/projects/we-also-served-the-health-and-well-being-of-female-veterans-in-the-uk/

5.3 Conclusions

Evidence from our qualitative and quantitative studies demonstrates that UK ex-servicewomen have distinct physical health needs, including increased prevalence of musculoskeletal conditions compared to ex-servicemen, and increased prevalence of COPD, smoking and obesity in comparison to civilian women. In-service experiences and occupational risks that disproportionately affect women include ill-fitting equipment and delayed or minimal treatment for gynaecological conditions. Following transition from the Armed Forces, their use of healthcare for physical conditions is broadly similar to that of the general population; however, a residual military culture, emphasising toughness, self-reliance, and reluctance to report symptoms, continues to influence help-seeking behaviours, creating additional barriers to care. These barriers are further compounded by limited practitioner awareness of women's service histories and the specific health implications of their military roles.

Since the work was undertaken for this project, the Office for Veterans' Affairs has announced VALOUR, which aims to 'foster the enterprising spirit of veteran charities, better connect local and national services and ensure veterans' support is truly data driven'[169]. VALOUR will work to develop a single UK-wide picture of support on offer, reduce duplication, diminish postcode lotteries, and create VALOUR support centres that will provide localised support such as 'advice on how to book GP appointments, access welfare or support with housing issues'[170]. It is hoped that this may address some of the known challenges around awareness and access to physical health support for ex-servicewomen.

Despite emerging evidence, significant gaps remain in understanding and addressing ex-servicewomen's physical healthcare needs. In the next section, we outline key recommendations for addressing these gaps.

169 OVA. 2025. 'Thousands of veterans to benefit from new UK-wide support network' Available at: https://www.gov.uk/government/news/thousands-of-veterans-to-benefit-from-new-uk-wide-support-network

170 COBSEO. 2025. Decoding VALOUR: A new chapter in Veteran support – thoughts from X-Forces. Available at: https://www.cobseo.org.uk/decoding-op-valour-a-new-chapter-in-veteran-support/

Chapter 6: Recommendations

Our recommendations have been developed in consultation with our Experts by Experience group and key stakeholders, including representatives from the Office for Veterans' Affairs, NHS, Ministry of Defence and the military charitable sector. These recommendations draw from the integrated findings of our research, including participants' suggestions for change during qualitative interviews, as well as our best understanding of current practice, and ongoing and developing efforts to address known challenges. The recommendations that follow are presented by theme in no particular order.

Where possible, recommendations should be considered in light of how they can complement or support the new VALOUR programme[171]. Furthermore, as healthcare is devolved and varies by country and local areas therein, care must be taken to ensure recommendations are adapted to and implemented across every country of the UK where possible, to ensure that all veterans benefit from the proposed changes.

171 https://www.gov.uk/government/news/thousands-of-veterans-to-benefit-from-new-uk-wide-support-network

6.1 Recommendations for service delivery, policy, education and practice

6.1.1 Improving awareness

Evidence context:
Ex-servicewomen in our qualitative interviews reported that healthcare professionals were inconsistent in asking them if they had served in the Armed Forces. Additionally, some ex-servicewomen reported a lack of understanding and/or consideration of how their military background may have impacted their health. This is echoed in previous UK research with ex-servicewomen[172]. With this in mind, this recommendation focuses on raising awareness of women's military service and the needs of ex-servicewomen.

Recommendation 1:
Develop communication and awareness campaigns that encourage recognition of women's contribution to the Armed Forces, and the experiences and needs of ex-servicewomen. This should be undertaken within the broader remit of raising general veteran awareness amongst the public, ensuring that women are represented appropriately in a range of roles, and that it is clear that all military roles are now open to women. We also recommend more targeted communications directed towards healthcare professionals within NHS and third sector services that provide health-based treatment, interventions and support to veterans.

Who is this recommendation for?
OVA, NHS, third sector organisations

Evidence context:
Ex-servicewomen in our qualitative interviews highlighted a lack of awareness of veteran-specific NHS and third sector healthcare and support for physical health, and uncertainty of the eligibility criteria for accessing services. This supports similar findings in previous UK research[173]. Other ex-servicewomen reported feeling as though disclosure of their veteran status did not have an impact on the care they received. On this basis, we make the following recommendations, which encourage efforts to raise awareness amongst ex-servicewomen of the veteran-specific support available to them and the benefits of accessing veteran-specific support, a recommendation which would benefit all ex-service personnel.

172 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Wood, D., Fossey, M., Price, P., Powell, D., Chalkley, H., Davidson, M., & Godier-McBard, L. (2023). I don't feel like that's for me: Overcoming barriers to mental healthcare for women veterans. https://www.centreformilitarywomensresearch.com/wp-content/uploads/2023/11/ARU_CMWR_VisualSummary.pdf

173 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Sharp, M-L., Croak, B., Khan, R., Smith, A., Langston, V., Rafferty, L., Greenberg, N., Fear, N. & Stevelink, S. (2025). SUSTAIN:

Recommendation 2:
Develop healthcare-focused awareness campaigns aimed at supporting ex-service personnel to understand what statutory healthcare support is available to them. Language choices should be carefully considered in order to reach those who may not identify with the term 'veteran', making use of alternative terms such as ex-service or ex-military as appropriate. This should include:

- Myth busting on the definition of a 'veteran' in the UK.
- Information on what veteran-specific statutory health support is available and who is eligible.
- Explaining the remit of the Armed Forces Covenant and its relevance to veteran healthcare. This should include the potential benefits of disclosing veteran status to healthcare professionals, as well as managing expectations around 'priority care'.

Who is this recommendation for?
OVA, NHS

Recommendation 3:
Review all charitable and third sector websites to ensure that information about support and programmes offered specifically for physical health is accessible and clear to those seeking support. This should include clear details on the eligibility for these physical health programmes, and whether gender-specific or tailored support is offered.

Who is this recommendation for?
Charitable and third sector

Recommendation 4:
Raise awareness of physical health-specific charitable support and programmes. This could include via social media, during military service and transition support, at veteran events and targeted advertising, including specific consideration of how to reach ex-servicewomen.

Who is this recommendation for?
Charitable and third sector, NHS, OVA, MOD

Recommendation 5:
Information around support available for physical health should be signposted, when appropriate, to ex-service personnel accessing support for other needs (e.g. housing, mental health, financial) in recognition of the interconnectedness of these challenges.

Who is this recommendation for?
Charitable and third sector

Identifying and examining the barriers and facilitators to ex-servicewomen making a successful and sustainable transition to civilian life in the UK. https://kcmhr.org/pdf/Sustain_ExServiceWomen_Transition_Report.pdf

Evidence context:
A repeated suggestion from ex-servicewomen in qualitative interviews was the need for a central directory of support services for ex-service personnel with physical health needs. Furthermore, feedback from our Experts by Experience group highlighted some limitations of the current 'Support for Veterans and Families' gov.uk page. Ex-servicewomen in our qualitative sample reported a lack of awareness of the support available to veterans amongst NHS healthcare professionals. Acknowledging current efforts to provide a central directory of support by the Office for Veterans' Affairs, this recommendation focuses on adapting and evaluating this existing government-led directory.

Recommendation 6:
Ensure the 'Support for Veterans and Families' gov.uk page meets the needs of ex-servicewomen, and health and third sector support professionals supporting all veterans. This should include:

- An evaluation of the role and function of the page in providing an appropriate, welcoming, user-friendly and informative resource for veteran service users. This should involve consultation with ex-servicewomen.
- Evaluate whether the gov.uk page is appropriate to the needs of healthcare professionals (awareness of signposting options, and referrals pathways) in relation to both content and format.
- Consider utilising a filterable interactive map format to display available charitable and statutory support by location.
- Within the organisation directory, ensure that it is clear what support is available in relation to physical health from each organisation, including eligibility for accessing this support (i.e. does support require that health conditions are 'service attributable', and if so, an explanation of what constitutes 'service attributable').
- Ensuring that the current list of organisations providing support for ex-servicewomen is up-to-date and accurate. This should include reviewing the current list of support organisations to ensure that those that provide services specific to or tailored for ex-servicewomen are indexed correctly.

Who is this recommendation for?
OVA

6.1.2 Education for healthcare professionals

Evidence context:
Quantitative analysis of UK Biobank data demonstrates differences in the physical health outcomes of ex-servicewomen compared to ex-servicemen and their civilian women counterparts. Our qualitative findings highlight how women's military service impacts their experience of accessing support for their physical health needs, including attitudes towards managing their health, help-seeking behaviours post-service, and the influence of in-service gender dynamics. Additionally, they felt healthcare professionals had a poor understanding of the health needs of the military and veteran community. This recommendation seeks to ensure that current training and initiatives can best equip healthcare professionals to support ex-servicewomen's physical health needs.

Recommendation 7:
Review current training and initiatives aimed at improving awareness of the experiences and needs of ex-servicewomen amongst all healthcare professionals, such as NHS eLearning and the Combat Stress Enhance+ training, to ensure they provide enough information on physical health needs. Training should be periodically reviewed to ensure it is up-to-date given that research focused on ex-servicewomen's healthcare needs is a rapidly evolving area. Training should include evidence-based content on:

- The impact of military service on the physical health outcomes and healthcare needs of ex-servicewomen.
- Combating stereotypes of who constitutes a veteran, and encouraging healthcare professionals to ask women if they have served in the Armed Forces.
- The impact of military service on how women understand and manage their physical health, their help-seeking attitudes, and their expectations of their health and healthcare.
- How to refer patients to veteran-specific statutory pathways (such as Op RESTORE), and how to identify and refer to available third sector and charitable services, including raising awareness of the 'Support for Veterans and Families' gov.uk website.
- Practical ways that all of the above can inform care provision, and the benefit of this to patients with a military background.

Who is this recommendation for?
NHS, charitable and third sector

Recommendation 8:
Training for NHS healthcare professionals related to the health needs of ex-service personnel, including consideration of the needs of ex-servicewomen, should be mandated in regions that experience a high volume of patients with a military connection.

Who is this recommendation for?
NHS

6.1.3 Supporting health during transition

Evidence context:
Within our qualitative findings, ex-servicewomen reported difficulties in transferring their medical records from military to civilian healthcare systems following discharge, including delays and loss of records. This has been reported in other recent research focused on both ex-servicewomen and men[174].

Recommendation 9:
Ensure the transition support provided by the Defence Transition Service (DTS) supports ex-servicewomen to understand how to manage their future physical health needs, including:

- Providing resources focused on how to maintain fitness and physical health post-service.
- Fostering accurate expectations of civilian statutory healthcare services, including physiotherapy and dentistry, by discussing differences between the types of care offered in-service and in civilian life. This should emphasise the self-guided nature of NHS healthcare, and discuss where the aims and approaches of healthcare provided by the NHS may differ from the approaches taken by Defence healthcare.
- Information on how service leavers' perception of their veteran identity can vary from the formal definition, and the impact this might have on their accessing of support. This should include discussion of the reasons why some ex-servicewomen do not have a sense of connection or have a delayed sense of connection with their veteran status.
- Information on the benefits of early engagement with civilian healthcare services when health needs arise.
- Information about charitable and third sector veteran services that support physical health or provide physical activities for those with chronic health conditions. This could include opportunities for relevant charitable and third sector services to engage with service leavers to raise awareness of the range of support offered and relevant eligibility criteria.
- In regard to all of the above, ensure that this information is accessible and clear at the point of need, which may arise at any stage of the life course following discharge from military service.

Who is this recommendation for?
MOD

Evidence context:
Within our qualitative sample, some ex-servicewomen recommended the need for more comprehensive health checks during transition, and the importance of ensuring that aspects of women's health needs are considered, such as menopause, gynaecological, reproductive, and sexual health, including sexual trauma.

174 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Recommendation 10:
Ensure exit medicals provide a health MOT, if a recent (~6 months) one has not been undertaken, including appropriate review of female-specific health needs such as menopause, gynaecological health, reproductive health and sexual health.

Who is this recommendation for?
MOD

Evidence context:
Analysis of UK Biobank data found that ex-servicewomen experienced higher prevalence of osteoarthritis than civilian women. Although the current analysis did not assess pain severity or functional status directly, prior evidence suggests that ex-servicewomen may experience greater pain and reduced mobility compared to women with no history of military service[175].

Recommendation 11:
Support osteoarthritis management and mitigation by:

- Developing and implementing osteoarthritis management protocols specifically tailored to the needs of ex-servicewomen:
  - Collaborating with NHS and military healthcare partners to create clinical guidance on the evaluation and treatment of osteoarthritis in ex-servicewomen. Guidance should address the higher prevalence of osteoarthritis in this group and the potential for increased pain and functional limitations.
  - Including updated, evidence-based information in clinical materials regarding osteoarthritis pathology, prognosis and best practices for management, addressing common misconceptions among healthcare providers.
  - Disseminating the guidance through NHS veteran-friendly GP accreditation schemes to ensure wide access and implementation.
- Introducing routine screening for early signs of osteoarthritis among servicewomen prior to military discharge, enabling earlier intervention.
- Establish integrated data systems between the MOD and NHS to track osteoarthritis and its progression from military service through post-service life. This would enable analysis of occupational roles and exposures during service in relation to later osteoarthritis diagnosis.

Who is this recommendation for?
MOD, OVA, NHS

175 Schoenfeld AJ, Cirillo MN, Gong J, Bryan MR, Banaag A, Weissman JS, Koehlmoos TP. Development of Chronic Pain Conditions Among Women in the Military Health System. JAMA Netw Open. 2024 Jul 1;7(7):e2420393. doi: 10.1001/jamanetworkopen.2024.20393.

Evidence context:
Smoking remains prevalent in the UK Armed Forces[176]. These elevated rates often persist after service, with ex-servicewomen reporting a higher prevalence of smoking compared to civilian women. Military service may act as both a risk factor for smoking initiation and a barrier to cessation, contributing to long-term health burdens including cancer, chronic disease, musculoskeletal conditions and respiratory conditions including chronic obstructive pulmonary disease (COPD)[177] . The MOD has begun to address this through a five-year contract with the NCSCT Community Interest Company to support training, policy development and research on smoking cessation[178].

Recommendation 12:
Address elevated smoking rates during service by:

- Conducting a comprehensive analysis of smoking patterns across branches, ranks, roles and gender to identify key drivers of initiation and persistence. Use this evidence to tailor prevention and cessation strategies.
- Developing and implementing gender-informed cessation programmes, including behavioural interventions and medication-assisted therapies, responsive to the military context.
- Establishing routine surveillance and evaluation mechanisms to monitor uptake and effectiveness, ensuring programmes are adapted based on gender-specific outcomes.
- Examining the prevalence of vaping and other forms of smokeless tobacco as potential substitutes for smoking, and ensure that prevention and cessation programmes address all forms of nicotine use.

Who is this recommendation for?
MOD, NHS smoking cessation services

Recommendation 13:
Support smoking cessation after transition to civilian life by:

- Incorporating smoking cessation counselling within discharge medicals.
- Establishing referral pathways to NHS smoking cessation services prior to discharge.
- Ensuring post-discharge cessation programmes are integrated for common co-occurring conditions such as chronic pain and mental health disorders.
- Tracking smoking initiation and cessation rates during and post-service.

Who is this recommendation for?
MOD, OVA, NHS smoking cessation services, veterans health research organisations

176 https://assets.publishing.service.gov.uk/media/5eecc00586650c2d25d92871/Information_regarding_how_many_of_those_in_the_Armed_Forces_smoke___2020_05127.pdf
177 Institute of Medicine (US) Committee on Smoking Cessation in Military and Veteran Populations; Bondurant S, Wedge R, editors. Combating Tobacco Use in Military and Veteran Populations. Washington (DC): National Academies Press (US); 2009. 2, SCOPE OF THE PROBLEM. https://www.ncbi.nlm.nih.gov/books/NBK215338/?utm_source=chatgpt.com
178 https://ukdefencejournal.org.uk/mod-awards-324k-stop-smoking-contract/

Evidence context:
UK ex-servicewomen reported a significantly higher prevalence of obesity (29.7%) compared to female civilians (19.3%) in the UK Biobank data. While rising obesity rates reflect broader societal trends, military service and the transition to civilian life are likely to amplify risk. Contributing factors include the loss of structured physical activity, service-related injuries, mental health conditions and lifestyle changes post-discharge.

Recommendation 14:
Support obesity reduction by:

- Strengthening MOD-led initiatives to promote healthy weight maintenance, physical activity and nutritional education during service.
- Ensuring data linkage between MOD and NHS records, enabling effective monitoring and evaluation of ex-service personnel-targeted weight management programmes.
- Embedding prevention strategies during transition to civilian life:
  - Developing tailored transition programmes that support continued physical activity and health promotion post-service (see Recommendation 9).
  - Providing targeted education on adapting nutrition and exercise routines for civilian environments.
  - Expanding access to physical activity opportunities that accommodate service-related limitations, such as mobility impairments and chronic pain.
- Evaluating and monitoring of risk factors and interventions:
  - Investigate military-specific contributors to obesity, including post-service reductions in physical activity, injury history, psychological stress and other lifestyle changes. Examine whether these risk factors differ by gender.
  - Assess the costs and benefits of expanding access to medication-assisted obesity treatments for ex-service personnel. Consider secondary benefits, including reduced risk for endocrine conditions, cardiovascular disease, and musculoskeletal disorders and consider if there are sex related differences in outcomes.

Who is this recommendation for?
MOD, NHS weight management services, veteran support organisations

6.1.4 Evaluation of processes and services

Evidence context:
Within our qualitative sample, ex-servicewomen reported variable experiences with veteran-accredited healthcare services or veteran-specific healthcare pathways. This has previously been reported in studies focused on statutory and third sector veteran support[179].

179 Hooks, C., Morgan, L., Fossey, M., Buxton, E., & Godier-McBard, L. (2023). 'Where are all the women?' Recognition and representation – UK female veterans' experiences of support in civilian life. https://www.centreformilitarywomensresearch.com/projects/female-veterans-experience-of-government-and-charities/

Wood, D., Fossey, M., Price, P., Powell, D., Chalkley, H., Davidson, M., & Godier-McBard, L. (2023). I don't feel like that's for me: Overcoming barriers to mental healthcare for women veterans.

Recommendation 15:
Independent in-depth evaluation of current veteran-focused initiatives across primary and secondary NHS care (such as Veteran-friendly GPs, Veteran Aware Hospitals, Armed Forces Advocates and Armed Forces Champions) is recommended to establish the benefits for veterans navigating these pathways. This evaluation should employ an intersectional lens to ensure that the potential unique needs of different subgroups of ex-service personnel, including women, people identifying as LGBTQ+ and communities of colour, are being met by these initiatives.

Who is this recommendation for?
NHS

Evidence context:
Ex-servicewomen in our qualitative interviews reported inconsistent identification, consideration and transfer of their status as a veteran across primary and secondary care. This led to a lack of both continuity of care and consideration of their military background for some ex-servicewomen.

Recommendation 16:
Review and evaluate the protocols for checking and recording veteran status across primary and secondary care to identify best practice in the identification of ex-servicewomen on a consistent basis, and explore the feasibility of veteran status being transferred between settings.

Who is this recommendation for?
NHS

Evidence context:
Analysis of UK Biobank data demonstrated that ex-servicewomen experienced higher rates of osteoarthritis than civilian women. Physiotherapy was commonly accessed by women in our qualitative sample, with some sharing challenges associated with access or quality of provision. Furthermore, some participants described differences between NHS and military approaches to physiotherapy and difficulties adapting to civilian provision.

Recommendation 17:
Evaluation of the physiotherapy and physical therapy needs of ex-service personnel compared to civilian civilian counterparts should be undertaken to examine differences between these groups, and whether the physiotherapy needs of ex-service personnel are met by NHS services. This should include gender-specific analyses and consider relevant female-health conditions, such as pelvic floor health.

Who is this recommendation for?
NHS

Evidence context:
Within our qualitative sample, art and sport-based programmes were particularly popular, and many ex-servicewomen describe the positive impact of these programmes on their well-being. Additionally, ex-servicewomen described how physical activity was an important part of their service and post-service lives, and discussed the difficulties in maintaining this activity as a result of their physical health needs.

Recommendation 18:
Evaluate current art and sport-based support programmes for ex-service personnel to measure the impact on the health and well-being outcomes, including engagement of ex-servicewomen and whether these programmes meet their needs. We are aware that some evaluations of art and sport-based programmes for veterans are already underway. Future evaluations should look at current and previous evaluations of art and sport-based programming for veterans to benefit from good practice and lessons learned.

Furthermore, organisations delivering art-based programmes may wish to use the Creative Health Quality Framework[180] within their evaluation design. Developed by the Culture, Health and Wellbeing Alliance, the framework has the aim of 'articulating what good looks like across the creative, cultural and health sectors' in order to support reflection, development and improvement. Likewise, organisations delivering sport-based programmes may wish to utilise the Benefits of Outdoor Sports for Society Project (BOSS) toolkit. The BOSS project[181] was a Europe-wide study designed to develop a mechanism for organisations to assess and evidence the social value of their outdoor sports programmes. It is interesting to note that the BOSS project included input from UK veteran organisations that offer sport-based programmes.

Who is this recommendation for?
Charitable and third sector

Evidence context:
The Female Veteran Transformation Programme[182] is a UK-wide programme that aims to transform service provision for ex-servicewomen through the development of an online toolkit for service providers across the commercial, statutory and charitable sectors. This programme amalgamated the findings of previous research and undertook extensive consultation with ex-servicewomen and stakeholders.

180 https://www.culturehealthandwellbeing.org.uk/sites/default/files/Creative%20Health%20Quality%20Framework.pdf
181 https://www.europarc.org/wp-content/uploads/2021/04/BOSS-WP4-Report.pdf
182 https://www.fvtp.org.uk/

Recommendation 19:
We are aware that the Female Veteran Transformation Programme will provide a dedicated 'tier 2' sub-section of their toolkit focused on mental health and physical health, including self-assessment checklists. To this end, we recommend an evaluation of how the toolkit overall, and these sub-sections specifically, impact healthcare professionals who support ex-servicewomen.

Who is this recommendation for?
Charitable and third sector, academic researchers

Evidence context:
Ex-servicewomen in our qualitative sample reported challenges in accessing compensation for physical health conditions after service, related to the need to prove these were service-attributable. Furthermore, our findings suggest differing health outcomes for ex-servicewomen compared to men, and differing experiences and demands during service (i.e. ill-fitting uniform and equipment).

Recommendation 20:
We recommend that Quinquennial Reviews of the Armed Forces Compensation Scheme explicitly consider the unique health experiences and impacts women experience during and after service and the differing effects the demands of service can have on women's bodies, to ensure that women have equitable access to compensation.

Who is this recommendation for?
MOD

6.1.5 Research recommendations

Evidence context:
The below research recommendations have been developed based on current gaps in knowledge around the physical health outcomes and needs of ex-servicewomen, identified via the scoping review and this project's findings.

Recommendation 21:
To evidence the impact of contemporary policy changes both in-service (e.g. training adaptation, new medical or other support offers) and post-service (e.g. education interventions, support offers). Longitudinal cohort research is needed, beginning in-service and continuing post-service, to be replenished regularly. This would allow for insight into the impact of change on long-term health and well-being outcomes, and consideration of differing outcomes by gender and other recorded characteristics that may require targeted interventions. To examine outcomes by differing intersections, it will be crucial that the cohort includes sufficient representation of women and other demographic groups within the sample.

Recommendation 22:

Assess the feasibility of combining current or past cohort studies in order to have sufficient numbers to explore ex-servicewomen's outcomes and experiences, where it is possible to align measures.

Recommendation 23:

The following specific evidence gaps are suggested as priorities for future research:

- Exploration of the health and well-being outcomes and lived experience of ex-servicewomen with comorbid mental and physical health needs.
- Mixed-method exploration of ex-servicewomen's experience of seeking and obtaining compensation for military-related physical health needs, and if this influences what healthcare support is utilised, including access to physiotherapy and complementary therapists, and healthcare experiences.
- In-depth comparative exploration of ex-service and civilian women's lived experience of sports and recreation in their daily lives and the role this has in their well-being and health outcomes. This should include the role of sport and art-based programmes offered by the charitable and third sector.
- In-depth mixed method comparison of the daily management of long-term physical health conditions in women veterans, male veterans and civilian women. This should compare the use and acceptance of formal and informal care arrangements.
- In-depth exploration of the impact of women's military service on their reproductive health and birth outcomes. This could include, but should not be limited to, the impact of: serving in austere environments, adverse military experiences such as bullying, intimate partner violence and abuse, military sexual trauma, military or transition-related mental ill health, and musculoskeletal conditions related to military service.
- In-depth qualitative exploration of how transition provision meets the needs of ex-servicewomen who transition during pregnancy or maternity leave, including healthcare needs.
- Examining the relationship between military occupational exposures, smoking behaviour and long-term physical health, including respiratory illnesses such as COPD, and mental health outcomes among ex-servicewomen.
- Examination of how physical health problems affect family life. This may be particularly relevant for ex-servicewomen, who are more likely than ex-servicemen to be in dual-serving households or to be single parents.

Appendix 1: Stakeholder involvement

An Experts by Experience group was formed as part of this project, comprising 10 ex-servicewomen, with representation across all three services and of varied ranks. Women served across differing eras, with members of the group having left service in the 1980s, 1990s, 2000s, 2010s and 2020s; their length of service ranged from 3 to 28 years.

The EBE group met twice. In the first meeting they were involved in the development of the interview questions, providing feedback on any areas they felt might not have been covered and on the phrasing of the questions. At the second meeting, the group was briefed on preliminary findings from each work package and invited to ask questions of the data and to share their thoughts and interpretations of the findings. As an example, this helped us to contextualise and make sense of the data around the receipt of war pensions and the process of this. At this meeting, the research team presented some recommendations suggested by interviewees and developed these further using the EBE group members' own thoughts on potential solutions and action or research required.

A Project Advisory Board was also formed, comprising key representatives from relevant government departments (i.e. the Ministry of Defence and Office for Veterans' Affairs) and support services (i.e. the NHS and third sector). The Board met three times during the project to advise the research team on key issues and decisions, provide oversight and governance, and monitor key project risks.

A stakeholder workshop with representation from our collaborative partners, the MOD, NHS, charities and external academics was conducted at the end of the project. Findings were presented to support the development of recommendations.

Appendix 2: Scoping review methodology

This updated review provides a supplement to the scoping review undertaken in 'We Also Served'[92], to provide a synthesis of current evidence related to the physical health of ex-servicewomen.

The following section includes relevant physical health papers identified in 'We Also Served'. You can read in detail how this search was undertaken here, alongside the results of a follow-up search, which employed the Joanna Briggs Institute (JBI) framework scoping review methodology [93]. The JBI framework was chosen for its systematic approach to identifying, analysing and summarising a broad range of research evidence.

The follow-up search had a narrowed focus compared to the previous search undertaken in 'We Also Served', posing the question 'What do we know about the physical health needs of ex-servicewomen?'. Search terms were developed to harmonise with the initial search, whilst focusing more specifically on physical health needs and conditions.

Table A.1. Search terms used in scoping review

Women	women OR woman OR female OR sex OR gender
AND	
Ex-service	Veteran* OR ex-service OR ex-forces OR ex-military OR ex-soldier* OR 'ex-Air Force' OR 'ex-Army' OR 'ex-Navy' OR 'ex-RAF'
AND	
Health	Health OR illness OR injury OR Injuries OR cardiovascular OR respiratory OR gastrointestinal OR abdominal OR renal OR urolog* OR endocrine OR diabetes OR neurolog* OR musculoskeletal OR MSK OR haematol* OR dermatol* OR gynae* OR reproduct* OR sex* OR immun* OR infect* OR breast OR cancer OR infertil* OR pregnancy OR miscarriage OR 'baby-loss' OR hearing OR vision OR sensory OR ABI OR TBI

The search terms and key terms were customised as needed to meet the requirements of each database, which included PubMed, Web of Science and Scopus. Limiters were employed to restrict the search to articles published from 2020 onwards (date of the previous search) and key terms found in titles, abstracts and keywords. The following inclusion and exclusion criteria were used to select articles that focused on the physical health needs of ex-servicewomen (see Table A.1).

92 Godier-McBard, L., Gillin, N., & Fossey, M. (2021). We Also Served: The health and well-being of UK female veterans. https://www.centreformilitarywomensresearch.com/projects/we-also-served-the-health-and-well-being-of-female-veterans-in-the-uk/

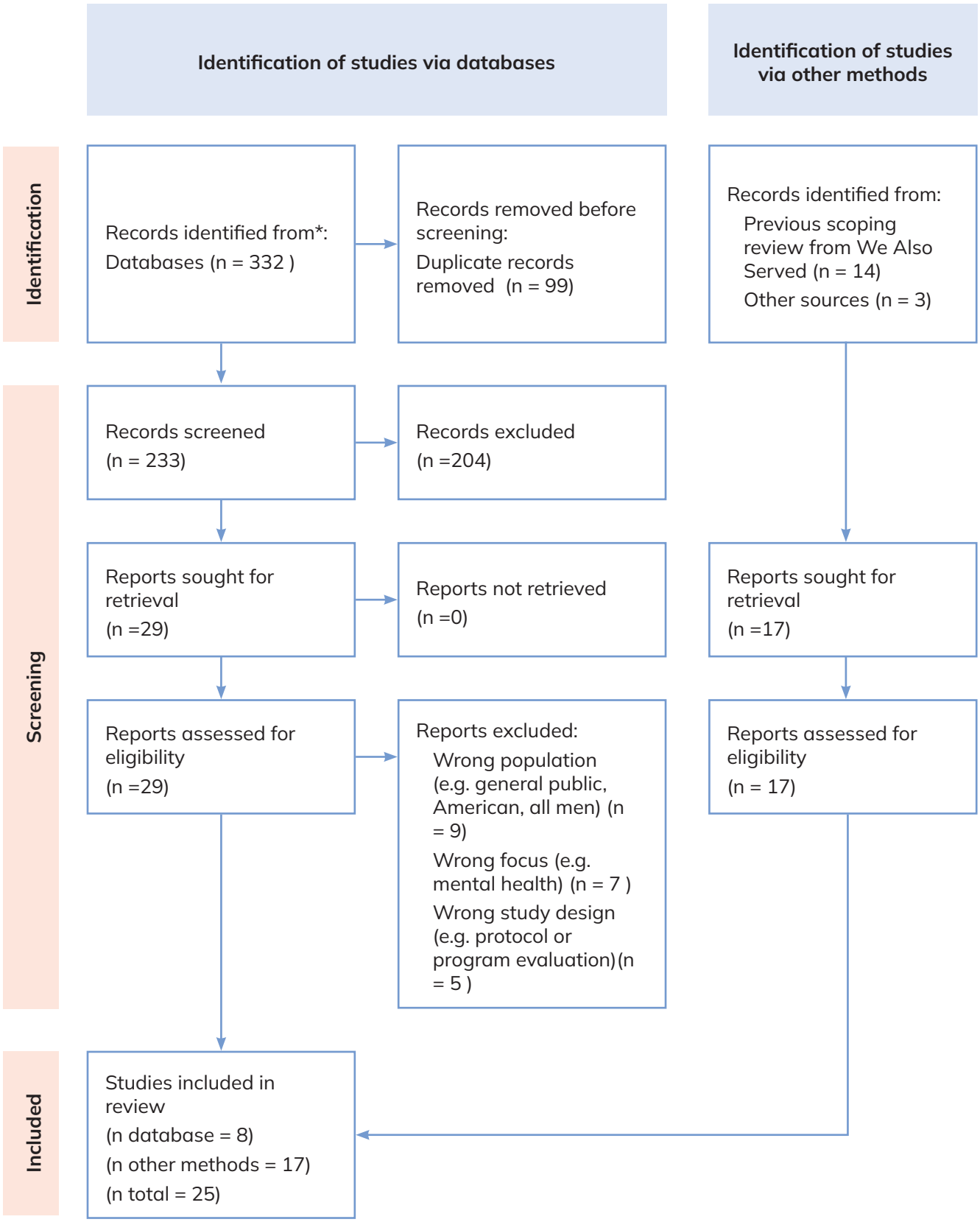
93 Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil, H. Scoping Reviews (2020). Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z, editors. JBI Manual for Evidence Synthesis. JBI; 2024. Available from: https://synthesismanual.jbi.global.

Table A.2. Inclusion and exclusion criteria for identified papers

	Inclusion	Exclusion
Population:	Studies focusing on ex-servicewomen, including women only samples and sex/gender comparative studies where applicable.	Studies focusing on the physical health needs of a non-gender/sex disaggregated sample of veterans. Studies focusing exclusively on the physical health needs of ex-servicemen.
Concept:	Physical health needs, conditions or outcomes.	Mental health or other non-physical health needs, or other topics.
Context:	United Kingdom	Any other country.
Types of evidence sources:	All types of peer-reviewed articles including qualitative, quantitative, and mixed-method studies.	Studies not in English. Literature review articles were not included, instead references were searched.

25 papers were identified following removal of duplicates and the application of inclusion/exclusion criteria (see Prisma Flow Diagram). Data from the 25 included articles were charted to allow for synthesis. A comparative analysis was undertaken, with the results presented overleaf.

PRISMA 2020 flow diagram (amended for purpose)



Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

Appendix 3: Scoping review supplement – study methods

1. Scottish Veterans Health Study methods

These cohort studies retrospectively compare the health outcomes of Scottish ex-service personnel to a civilian Scottish comparison group, matched for age, sex and postcode sector of residence.

In both studies, data was obtained via the Scottish National Health Service (NHS) Central Registry database, NHS Prescribing Information system and Scottish Morbidity Record, which allowed for the comparison of various physical health outcomes ascertained by International Classification of Diseases (ICD) and Scottish Morbidity Record (SMR) codes. Both studies accounted for socio-economic status within their analysis, utilising the Scottish Index of Multiple Deprivation (SIMD) based on an individual's postcode, and measured income, employment, health, education, housing, crime and access to services.

The 'Scottish Veterans Health Study' involved 56,205 Scottish ex-servicepersons compared with 172,741 civilian counterparts, between 1981–2012. Within the ex-service sample, there were 50,970 ex-servicemen and 5,235 ex-servicewomen.

The 'Trends in Scottish Veterans Health' study builds upon the first cohort study, retrospectively comparing the outcomes of 78,385 Scottish ex-service personnel, with 252,637 civilian Scottish residents in a matched comparison group between 1981–2017. Within the ex-service sample, there were 70,581 ex-servicemen, and 7,573 ex-servicewomen.

2. Gulf War cohort study methods

Two KCMHR cohort studies compared the outcomes of a stratified sample of current and former service personnel who had deployed in the Gulf region in 1990–1 (2725), henceforth Gulf War Cohort, with two comparison samples. These were the Era Cohort, sampling current and former service personnel who had not deployed to the Gulf War (2422), and the Bosnia Cohort sampling current and former service personnel who had deployed to Bosnia between 1992–7 (2393). Those who had served in both the Gulf region and Bosnia during the relevant periods were included as part of the Gulf Cohort. Women were deliberately over-sampled and represented 7.6% (208) of the final Gulf War Cohort, 8.7% (209) of the final Bosnia Cohort and 7.3% (177) of the final Era Cohort.

MacFarlane et al (2000; 2003) undertook retrospective cohort studies which compared the outcomes of servicepersons (both current and former) who served in the Gulf region between 1990-1991 (Gulf Cohort), with a stratified comparison group of service personnel (both current and former) who were in service in 1991 but did not serve in the Gulf region (Era Cohort), via the NHS Central register and ONS death drafts/certificates. The sample included 1098 women within the Gulf Cohort and 1079 within the Era Cohort.

Finally, considering reproductive health, one study examined foetal death and abnormality of

those service personnel (former and current) who served in the Gulf region between 1990-1991, and a similar cohort of service personnel (former and current) who were not deployed to the Gulf War (Doyle et al, 2004). The sample included 484 women within the Gulf War sample, and 377 in the non-Gulf War sample. This retrospective cohort study collected data via postal questionnaire on reproductive outcomes, including information on liveborn children (sex, data and place of birth, gestation, birthweight, any congenital defects or serious medical conditions, and where applicable date of death), infertility, miscarriage, stillbirth, ectopic pregnancy, hydatidiform mole, missed abortion, and information around pregnancy terminations.

3. The Women's Royal Army Corps study

Data was collected via a cross-sectional survey of 750 UK ex-Army servicewomen, recruited from the Women's Royal Army Corps (WRAC) Association membership. As such, the study is restricted to women who served in the Army prior to the disbandment of the WRAC.

The survey captured general demographic data (sexuality, relationship status, employment status and number of dependants) and participants' military background (rank and reason for leaving service). Physical health was measured via the 15-item Patient Health Questionnaire (PHQ-15), as well as mental health measures and social support measures: UCLA Three-Item Loneliness Scale (UCLA-3), Oslo Social Support Scale (OSSS-3), Alcohol Use Disorders Identification Test (AUDIT), 12-item General Health Questionnaire (GHQ-12), 20-item PTSD Checklist for DSM-5 (PCL-5) and Dimension of Anger Reactions (DAR-5). Adverse Childhood Experiences were assessed via the Adverse Childhood Experience 10-Item questionnaire (ACEs-10).

Additionally, military adversities and challenges were recorded. Participants were asked if they had been subject to emotional bullying, physical assault, sexual harassment or sexual assault in-service. Participants were also asked to identify if they experienced a range of potential gendered in-service and post-service challenges such as 'Felt had to be better than male colleagues to get the same recognition' or 'Resettlement advice didn't take into account family responsibilities'. For those with children, the timing and impact of participants' military careers were explored: (1) if you have children, did you have them pre-service, during service or post-service, and (2) was your decision to have (or not have) children, and the timing of when to have them, affected by your military career?

Appendix 4: UK Biobank supplement

Identification of veteran status

Veteran status was determined using occupational history data collected in 2015. Participants identified their historical and current occupations using the 2010 Standard Occupational Classification (SOC) codes. Veterans were identified using the SOC codes for non-commissioned officer and other ranks (3311) and Armed Forces officer (1171). Current service members were excluded based on employment dates extending past the baseline assessment date. Of the 120,271 participants who provided occupational history, 3,268 were identified as veterans (2,722 males and 546 females). Total time in service was calculated by summing the calendar years of reported employment in the Armed Forces, accounting for breaks in service. Time since transition was determined as the difference between the baseline assessment date and the last Armed Forces employment exit date.

Table A.3. Sociodemographic and health characteristics of female veterans compared to male veterans and female civilians

	Female Veterans n = 546	Male Veterans n = 2,722	P-value	Female Veterans n= 546	Female Civilians n = 66,305	P-value
Years in service, Mean (SD)	6.0 (5.5)	13.3 (10.4)	<0.001	6.0 (5.5)	***	***
Years since transition, Mean (SD)	30.1 (11.2)	25.8 (12.4)	<0.001	30.1 (11.2)	***	***
Age, Mean (SD)	55.4 (+7.6)	57.3 (+8.3)	<0.001	55.4 (+7.6)	55.5 (+7.6)	0.668
Ethnicity, n (%)						
White/White British	541 (99.5)	2,662 (98.2)	0.037	541 (99.5)	64,560 (97.7)	0.006
Education, n (%)						
University	162 (29.7)	720 (26.6)	<0.001	162 (29.7)	31,580 (47.8)	<0.001
A level	92 (16.9)	390 (14.4)		92 (16.9)	9,741 (14.8)	
O levels/GCSE	178 (32.7)	770 (28.4)		178 (32.7)	14,026 (21.2)	
Other professional training	75 (13.8)	551 (20.3)		75 (13.8)	7,033 (10.7)	
None of the above[a]	38 (7.0)	280 (10.3)		38 (7.0)	3,672 (5.6)	
Deprivation Index, Mean (SD)	15.8 (12.9)	16.3 (13.1)	0.417	15.8 (12.9)	14.4 (11.6)	0.008
Smoking Status, n (%)						
Never Smoked	297 (54.4)	1,012 (37.4)	<0.001	297 (54.4)	41,470 (62.7)	<0.001
Previous Smoker	203 (37.2)	1,410 (52.1)		203 (37.2)	20,994 (31.7)	

	Female Veterans n = 546	Male Veterans n = 2,722	P-value	Female Veterans n= 546	Female Civilians n = 66,305	P-value
Current Smoker	46 (8.4)	287 (10.6)		46 (8.4)	3,704 (5.6)	
Body Mass Index (BMI), n (%)						
Underweight (<=18.4)	<5 (-)[b]	<5 (-)[b]	<0.001	<5 (-)[b]	516 (0.8)	<0.001
Normal 18.5 – 24.9	193 (35.6)	520 (19.4)		193 (35.6)	29,376 (44.9)	
Overweight 25.0 – 29.9	185 (34.1)	1,350 (50.5)		185 (34.1)	22,890 (35.0)	
Obese 30.0 +	161 (29.7)	806 (30.1)		161 (29.7)	12,583 (19.3)	
General Health, n (%)						
Excellent	109 (20.0)	512 (18.8)	0.161	109 (20.0)	15,498 (23.4)	<0.001
Good	326 (59.9)	1.597 (58.8)		326 (59.9)	40,447 (61.1)	
Fair	85 (15.6)	520 (19.1)		85 (15.6)	8,920 (13.5)	
Poor	24 (4.4)	89 (3.3)		24 (4.4)	1,292 (2.0)	
Physical Health Condition, n (%)						
Neurological Condition						
Migraine	37 (6.8)	65 (2.4)	<0.001	37 (6.8)	4,185 (6.3)	0.650
Fibromyalgia	5 (0.9)	< 5 (-)[b]	0.001	5 (0.9)	278 (0.4)	0.075
Digestive Disorders						
Irritable Bowel Syndrome	17 (3.1)	40 (1.5)	0.007	17 (3.1)	2,721 (4.1)	0.240
Inflammatory Bowel Disorder	7 (1.3)	36 (1.3)	0.940	7 (1.3)	856 (1.2)	0.980
Respiratory Conditions						
Asthma	61 (11.2)	254 (9.3)	0.183	61 (11.2)	8,463 (12.8)	0.260
COPD	14 (2.6)	80 (2.9)	0.630	14 (2.6)	764 (1.2)	0.002
Endocrine Disorders						
Thyroid	48 (8.8)	67 (2.5)	<0.001	48 (8.8)	6,128 (9.2)	0.710
Diabetes	19 (3.5)	227 (8.3)	<0.001	19 (3.5)	1,720 (2.6)	0.190
Cardiovascular Diseases						
HTN	108 (19.8)	934 (34.3)	<0.001	108 (19.8)	14,769 (22.3)	0.162
CAD	28 (5.1)	412 (15.1)	<0.001	28 (5.1)	1,766 (4.2)	0.620
Musculoskeletal conditions						
Any musculoskeletal condition	265 (48.5)	1,328 (48.8)	0.914	265 (48.5)	28,766 (43.4)	0.016

	Female Veterans n = 546	Male Veterans n = 2,722	P-value	Female Veterans n= 546	Female Civilians n = 66,305	P-value
Back or spinal disorder	65 (11.9)	405 (14.9)	0.071	65 (11.9)	7,261 (11.0)	0.478
Osteoarthritis	115 (21.1)	477 (17.5)	<0.001	115 (21.1)	11,501 (17.4)	0.023
Liver						
Cirrhosis	38 (7.0)	185 (6.8)	0.890	38 (7.0)	4,739 (7.2)	0.865
Hearing						
Tinnitus	<5 (-) b	24 (0.9)	0.434	<5 (-) b	432 (0.7)	0.796
Hearing aids	18 (3.3)	237 (8.7)	<0.001	18 (3.30)	2,651 (4.0)	0.404
Self-reported hearing loss	135 (24.7)	1,145 (42.1)	<0.001	135 (24.7)	16,708 (25.2)	0.798
Hearing background noise	203 (37.2)	1,408 (51.7)	<0.001	203 (37.2)	24,490 (36.9)	0.908

CAD - Coronary artery disease, COPD - Chronic obstructive pulmonary disease, HTN - Hypertension, MSK - Musculoskeletal disorders

p-value for x^2 tests for binary/categorical variables and independent t-tests for continuous variables

[a] Education qualification not specified by participants; may include other or no qualifications

[b] Suppression of counts less than 5

Table A.4. Unadjusted and adjusted logistic regression models of female veterans compared to male veterans

	Unadjusted OR (95% CI)	Semi-adjusted [a] aOR (95% CI)	Fully adjusted [b] aOR (95% CI)
Excellent/good vs. Fair/ poor	1.15 (0.92 - 1.45)	1.17 (0.92 - 1.50)	1.10 (0.85 - 1.43)
Neurological condition			
Migraine	**2.97 (1.96 – 4.50)**	**2.83 (1.80 - 4.45)**	**2.63 (1.66 - 4.19)**
Fibromyalgia	**8.38 (2.00 - 35.15)**	4.51 (0.94 - 21.61)	4.69 (0.92 - 23.8)
Digestive disorders			
Irritable bowel syndrome	**2.15 (1.21 - 3.83)**	1.72 (0.94 – 3.16)	1.81 (0.97 – 3.41)
Inflammatory bowel disorder	0.97 (0.43 - 2.19)	0.77 (0.33 - 1.79)	0.73 (0.31 - 1.71)
Respiratory conditions			
Asthma	1.22 (0.91 - 1.64)	1.01 (0.74 - 1.38)	1.05 (0.76 - 1.44)
COPD	0.87 (0.49 - 1.55)	0.97 (0.53 - 1.77)	1.09 (0.58 - 2.01)
Endocrine disorders			
Thyroid	**3.82 (2.60 - 5.60)**	**4.48 (2.91 - 6.89)**	**4.42 (2.83 - 6.89)**
Diabetes	**0.40 (0.25 - 0.64)**	**0.45 (0.27 - 0.74)**	**0.46 (0.28 - 0.78)**
Cardiovascular			
HTN	**0.47 (0.37 - 0.59)**	**0.51 (0.41 - 0.65)**	**0.53 (0.41 - 0.68)**

	Unadjusted OR (95% CI)	Semi-adjusted [a] aOR (95% CI)	Fully adjusted [b] aOR (95% CI)
CAD	**0.30 (0.20 - 0.45)**	**0.37 (0.25 - 0.56)**	**0.39 (0.26 - 0.59)**
Musculoskeletal conditions			
Any MSK	0.99 (0.82 - 1.19)	1.01 (0.83 - 1.22)	1.02 (0.84 - 1.25)
Back/Spinal disorders	0.77 (0.58 - 1.02)	0.81 (0.60 - 1.08)	0.85 (0.63 - 1.15)
Osteoarthritis	**1.26 (1.00 - 1.58)**	**1.51 (1.18 - 1.93)**	**1.61 (1.25 - 2.08)**
Liver			
Cirrhosis	1.03 (0.71 - 1.47)	1.12 (0.76 - 1.64)	1.17 (0.79 - 1.72)
Hearing			
Tinnitus	0.62 (0.19 – 2.07)	0.73 (0.21 - 2.58)	0.92 (0.25 - 3.37)
Use of hearing aids	**0.36 (0.22 – 0.58)**	**0.44 (0.26 - 0.75)**	**0.47 (0.28 - 0.79)**
Difficulty hearing	**0.45 (0.37 – 0.56)**	**0.51 (0.41 - 0.63)**	**0.52 (0.42 - 0.66)**
Difficulty w/ background noise	**0.55 (0.46 – 0.67)**	**0.57 (0.47 - 0.7)**	**0.60 (0.49 - 0.74)**

CAD - Coronary artery disease, COPD - Chronic obstructive pulmonary disease, HTN - Hypertension, MSK - Musculoskeletal disorders

Boldface indicates statistical significance (p<0.05)

[a] semi adjusted: continuous age, ethnicity, education, indices of multiple deprivation.

[b] fully adjusted: continuous age, ethnicity, education, indices of multiple deprivation, BMI, smoking.

Table A.5. Unadjusted and adjusted logistic regression models of female veterans compared to female civilians

	Unadjusted OR (95% CI)	Semi-adjusted [a] aOR (95% CI)	Fully adjusted [b] aOR (95% CI)
Excellent/good vs. Fair/ poor	**0.73 (0.59 - 0.90)**	**0.80 (0.64 - 0.99)**	0.90 (0.72 - 1.13)
Neurological condition			
Migraine	1.08 (0.77 - 1.51)	1.10 (0.78 - 1.54)	1.11 (0.79 - 1.56)
Fibromyalgia	2.19 (0.90 - 5.34)	1.62 (0.6 - 4.37)	1.49 (0.55 - 4.02)
Digestive disorders			
Irritable bowel syndrome	0.75 (0.46 - 1.22)	0.76 (0.47 – 1.23)	0.76 (0.47 - 1.24)
Inflammatory bowel disorder	0.99 (0.47 - 2.1)	0.97 (0.46 - 2.05)	0.97 (0.46 - 2.06)
Respiratory conditions			
Asthma	0.86 (0.66 - 1.12)	0.87 (0.66 - 1.16)	0.84 (0.64 - 1.10)
COPD	**2.26 (1.32 - 3.86)**	**2.03 (1.18 - 3.49)**	**1.79 (1.04 - 3.08)**
Endocrine disorders			
Thyroid	0.95 (0.70 - 1.27)	0.93 (0.69 - 1.26)	0.89 (0.66 - 1.20)
Diabetes	1.35 (0.85 - 2.14)	1.25 (0.78 - 2.01)	1.02 (0.63 - 1.65)

	Unadjusted OR (95% CI)	Semi-adjusted [a] aOR (95% CI)	Fully adjusted [b] aOR (95% CI)
Cardiovascular			
HTN	0.86 (0.70 - 1.06)	0.83 (0.67 - 1.04)	**0.74 (0.59 - 0.93)**
CAD	1.24 (0.85 - 1.82)	1.20 (0.81 - 1.77)	1.11 (0.75 - 1.64)
Musculoskeletal conditions			
Any MSK	**1.23 (1.04 - 1.46)**	1.19 (1.00 - 1.42)	1.13 (0.95 - 1.35)
Back/Spinal disorders	1.10 (0.85 - 1.43)	1.07 (0.82 - 1.39)	1.03 (0.79 - 1.34)
Osteoarthritis	**1.27 (1.03 - 1.56)**	**1.25 (1.01 - 1.55)**	1.14 (0.92 - 1.42)
Liver			
Cirrhosis	0.97 (0.70 - 1.35)	1.02 (0.73 - 1.43)	1.01 (0.72 - 1.41)
Hearing			
Tinnitus	0.86 (0.28 – 2.69)	0.89 (0.29 - 2.79)	0.93 (0.30 - 2.90)
Use of hearing aids	0.82 (0.51 – 1.31)	0.81 (0.50 - 1.32)	0.81 (0.50 - 1.31)
Difficulty hearing	0.97 (0.80 – 1.19)	0.98 (0.80 - 1.19)	0.97 (0.79 - 1.19)
Difficulty w/ background noise	1.01 (0.84– 1.20)	1.02 (0.85 - 1.21)	1.02 (0.85 - 1.21)

CAD - Coronary artery disease, COPD - Chronic obstructive pulmonary disease, HTN - Hypertension, MSK - Musculoskeletal disorders

Boldface indicates statistical significance (p<0.05)

[a] semi adjusted: continuous age, ethnicity, education, indices of multiple deprivation.

[b] fully adjusted: continuous age, ethnicity, education, indices of multiple deprivation, BMI, smoking.

Appendix 5: DMWS dataset supplement

DMWS database and data extraction

The data used for this research has been obtained from DMWS welfare officers who attend the bedside of patients when they are in hospital. The welfare officers carry out assessments to deliver holistic support and address a multitude of needs, for example housing, finance, mental health, substance misuse, employment and social isolation.

DMWS have developed a bespoke portal which incorporates a series of tabs with different purposes to record information from the service user. The first tabs are demographics, and the other tabs are based on complexity and outcomes. DMWS record data on all people supported (when consent is obtained).

The portal has two ways to extract data, and both ways provide anonymised data. The first is an inbuilt function where specific reports have been set up and the data is pulled into Excel spreadsheets. The second function is also inbuilt, and the data is downloaded into Power BI. All data extracted for this report is from the first method, directly from the database into an Excel spreadsheet.

Complexity score

When a referral is received, a welfare officer conducts a needs-based through conversations with the veteran. A complexity score is then produced by identifying the issues an individual is facing, alongside the impact it is having on them. The impact will be different for everyone; for example, debt management for one person may be a minor issue, but for another it could be impacting their whole life. In general, the higher the complexity, the more time a case will take to manage. Cases with a complexity score of high and above indicate that the veteran has a multitude of issues that are having a significant impact on them. The complexity scoring is an inbuilt system within the DMWS portal.

The complexity score is produced through conversations and therefore at the discretion of the member of staff completing the assessment. Welfare officers are trained to ensure the complexities are veteran-led and that the veteran specifies the impact the issue is having on them. A list of the types of issues recorded as complexities is provided below.

DMWS have six complexity categories: routine, low, moderate, high, severe, extreme. They are allocated on a points system based on the issue and the impact (between 1-6). A description of the complexity categories is provided in Table A.6 below.

Table A.6. DMWS complexity categories

Complexity category	Description
Routine	Usually, one issue with a small impact - we would expect this to be resolvable with advice or a small amount of input.
Low - moderate	Several issues with a minimal impact, requiring more support, usually cases with several contacts but not long term.
High - extreme	High complex cases where at least several issues are identified which are having a significant impact on the individual. These are longer term cases (at least several weeks), require a large input through onwards referrals or overseeing several organisations that are involved. Extremely complex cases would often be huge, life-changing situations.

Types of complexities

The complexities recorded by DMWS welfare officers include:

Alcohol Misuse
Transport
Mental Health
Bereavement
Carer Role
Childcare
Debt
Disability - Existing
Transition from Military (support)
Drugs/Substance Misuse
End of Life
Family - current health issue impact upon
Family Issues
Finance Management
General Health
General Well-being
Health Impact on Employment
Health Treatment - Current Regime
Health Treatment - Future Long Term
Homelessness
Housing Adaptations
Housing - Inappropriate
Housing - Nursing Home
Housing - Unsafe
Independent Living Barriers
Lack of Support
Life Limiting Diagnosis
Loneliness
Loss of Limb Rehabilitation
Low Self Esteem
Relationship issues (Partner)
Respite Care requirements
Severe Injury Rehabilitation
Sexuality
Skills - for employment
Social Isolation
Sport & Activity Barriers
Transgender
Unemployment
Critical Illness
Dementia/Alzheimer's
Learning Disability

Communication Problems
COVID-19
Suicide/Self Harm
Employment Impact on Well-being
Under Investigation (PoliceSU)
Afghanistan Conflict
Benefits - currently claimed
Benefits - current treatment impact upon
Disability as result of current health issue
Delayed Discharge (HSC reasons)
Frailty
Falls
Ukrainian Crisis 2022
Confusion
Medical Compensation Support
Chronic Pain
Family Relocation
Historical Abuse
Long Term MSK Condition
Domestic Abuse
Neurodiversity
SEND
Child Mental Health
Child Education Pathway
NHS processes Adult
NHS processes Child
NHS Waiting List Adult
NHS Waiting List Child
Gambling
Dental
Maternity
Barriers to Employment
Family Issues - Social Care
Family Issues - Transition

Appendix 6: Interview protocol

The interview topic guide was initially based on the (limited) research literature in the area and the aims of the research project. It was further developed and refined in consultation with our Experts by Experience group (EBE) of ex-servicewomen, and with our Project Advisory Board of academics and representatives from key veteran organisations and government departments. The interview protocol included the following key guiding questions, and further prompts.

Needs

- Please could you tell me about any current physical health needs that significantly impact your life? These could include illnesses, injuries or other medical conditions.
- Have you experienced any current or past female-specific physical health needs, for example relating to infertility, pregnancy, reproductive, sexual or gynaecological health, menopause, miscarriage, pregnancy loss, or baby loss?

Access

- Have you accessed any healthcare in relation to your current physical health needs since leaving the military?
- Can you tell me about your experiences of accessing support services for your current physical health needs since leaving the military?

Improvements

- Are there any ways in which you think that services for female veterans' physical health could be improved? (including government, NHS, private providers or charities)

Appendix 7: Participant, service branch and years of military service

Participant Number	Service Branch	Year joined	Year discharged
1	Royal Navy (RN)	1992	2021
2	Royal Air Force (RAF)	1987	2007
3	Army	1982	1990
5	Army	1999	2022
7	Army	1999	2004
9	Army	2007	2012
11	RAF	1987	2017
12	RAF	1980	1992
15	RAF	1990	1998
16	Army	1991	1998
17	RAF	1999	2017
18	Army	1981	1987
19	RAF	1999	2005
21	Army	1980	1986
23	RAF	1985	2006
24	RAF	1983	1995
26	Army	2005	2024
27	Army	2015	2023
29	Army	1989	2002
30	Army	1997	2004
33	Army	1994	2018
38	Army	1962	1966
39	Army	1988	1995
43	Army	1971	1975
45	RAF	1991	1999
52	RN	2001	2023
64	Army	1992	1999
70	Army	1989	1998
81	RN	1983	2008
82	RN	1983	1989
87	RN	1983	1995
88	RAF	1981	2001
92	RN	2006	2023

Participant Number	Service Branch	Year joined	Year discharged
94	Army	1991	2006
95	RAF	1984	1989
96	RN	1998	2024
99	Army	1990	1995
105	Army	1987	1994
106	Army	2000	2019
108	Army	2001	2013

The Physical Health and Healthcare Experiences of UK Ex-servicewomen

CMWR

The Centre for Military Women's Research (CMWR)