Occupational Medicine
doi:10.1093/occmed/kqy160

Loneliness and social isolation of military veterans: systematic narrative review

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Background	Loneliness and social isolation are being increasingly recognized as influencing both physical and mental health. There is limited research carried out with military veterans and, to date, there is no review of existing evidence.
Aims	To synthesize and examine the evidence exploring aspects of social isolation and loneliness of military veterans, using a systematic narrative review strategy.
Methods	A database search was carried out utilizing relevant search criterion. Seven databases were searched for publications with no date restrictions. Articles were included if they involved veterans and either social isolation or loneliness. The initial search returned 484 papers, after exclusions, removal of duplications, and a reference/citation search, 17 papers remained and were included in this review.
Results	The retrieved papers examined four areas of loneliness and social isolation: prevalence of loneliness in the veteran population, experiences related to military service as impacting loneliness or social isolation, the relationship between mental health and loneliness or social isolation, and interventions to combat loneliness and social isolation. Differences between the experiences of younger and older veterans were also highlighted.
Conclusions	It is evident that military veterans present unique experiences of loneliness and social isolation, especially older veterans. This requires specific attention outside of campaigns targeted at the non-military population.

Key words Loneliness; military; psychosocial; social isolation; systematic narrative review; veteran.

Introduction

Loneliness and social isolation are two different concepts, but are often blurred in their definition and measurement. Loneliness is a subjective social and emotional experience which is often characterized as the discrepancy between the social relationships we have and the social relationships we wish to have [1]. Social isolation is an objective state which considers the integration of the individual in the social environment, such as the frequency of social relations and social networks [2]. Despite being separate concepts, individuals can experience loneliness and social isolation together. Loneliness and social isolation are linked to poor physical health and well-being, such as an increased risk of high blood pressure [3], cognitive decline [4], depression [5] and mortality [6,7].

In recent years, loneliness and social isolation have received increased public attention globally, including the 'Connect2affect' programme in the USA [8] and the Campaign to End Loneliness [9] in the UK. However, the majority of evidence examining the concepts of loneliness and social isolation are focussed on the general older population. Despite the high prevalence of loneliness and social isolation in the older population, meta-analytic data indicate greater risk of mortality for younger individuals in similar circumstances [10].

Evidence from UK military charities suggests that loneliness and social isolation are prevalent issues for veterans of all ages [11,12]. Furthermore, military-specific organizations in multiple countries have begun to recognize, and aim to tackle, veterans' loneliness and social isolation. However, there is currently a lack of reviewed evidence synthesizing peer-reviewed research of veterans' loneliness and social isolation. Typically, there is great variation in each veteran's experience of service in terms of length of time served and operational

deployment, etc., and thus it is difficult to make generalizations across the whole veteran population. However, there are several possible service-related reasons as to why social isolation and loneliness may be salient features of UK veterans' lives. As Walker [13] identified, almost all ex-service personnel experience some degree of difficulty or 'friction' in making the transition back into civilian life following military service. This transition can pose a threat to identity, and require a certain degree of effort in order to establish a post-service identity. Furthermore, military service, by its nature requires geographical mobility, and frequent redeployments may mitigate against being able to 'put down roots' in any place. Whilst frequent geographical mobility and transition from service life will not increase vulnerability for all individuals, it can impact on both loneliness and social isolation for some [14] as these processes inevitably entail a disruption of close friendships formed during service. Woodward and Jenkings [15] highlighted the intensity of friendship bonds formed during service as providing one of the cornerstones of military identity; the authors coined the term 'fictive kinship' in order to describe the practice of considering the military as 'family', superiors (especially senior Non-Commissioned Officers) as 'father figures' and fellow service personnel as 'brothers'/'sisters'.

Leaving the service means that these bonds often become broken or are difficult to sustain in the post-service context. Our own geographical analysis suggests that many servicemen and women, upon leaving the military, choose to settle in the vicinity of the military facility at which they served. Whilst this may be one means in which to sustain friendships formed during service, it may also mean that maintaining wider family relationships (at a distance) becomes more difficult. For some veterans, there may be very little incentive to return 'home' following service. Barrett [16] identified that a significant minority of veterans receiving psychological support had suffered trauma in early life, and cited reasons for joining the military as a means of escape from abusive family relationships. Finally, there are those whose reasons for enlisting include limited economic opportunities in their geographical place of origin. In such circumstances, return to the place where childhood friendships were forged, and where the majority of one's extended family reside, may become practically difficult.

Despite the attention around loneliness and social isolation in the military population, there is currently no comprehensive overview of the current evidence base. Therefore, this systematic narrative review aims to synthesize and examine the current evidence base relating to experiences of social isolation and loneliness of military veterans.

Methods

A systematic narrative literature review was conducted, as opposed to a traditional systematic review, in order to ensure all evidence was synthesized, including both quantitative and qualitative research [17,18]. Ethical approval was not required as it was a review only. The concept of social relationships is broad, encompassing aspects of comradeship, social networks and social support. This review was specifically interested in the lack of subjective and objective social connectedness, and therefore directly considered loneliness and social isolation, rather than other aspects of social connectedness, such as social networks or social participation. Therefore, a systematic search was carried out to gather all published, peer-reviewed evidence related to the social isolation and loneliness of military veterans as shown in Table 1.

Databases suitable to the research aim were identified and relevant search terms were used. Publication date was not used an exclusion criteria; however, literature review papers and papers not written in the English language were excluded. A truncation strategy was used to maximize the retrieval of relevant articles. A total of 484 articles were identified from the title and abstract search (Figure 1).

Of the 484 retrieved papers, 438 were removed as they were deemed irrelevant after reading the title and abstract. Twenty-one papers were then removed as duplicates. After carrying out a full-text search, 10 further papers were excluded as loneliness or social isolation was not considered (n = 5), the papers discussed social connectedness as opposed to loneliness or social isolation (n = 3), loneliness was measured whilst participants were in active duty (n = 1), or the paper was not peer-reviewed (n = 1). A reference and citation search was carried out on all relevant papers, and this resulted in two

Table 1. Systematic search strategy

Source	ASSIA Cochrane library ETHOS PsycARTICLES Science Direct Freedom Collection Scopus Web of Science
Search field	Title and abstract
Exclusion	Non-English language Literature reviews
Year of publication	All years
Search terms	(Veteran OE ex-servic* OR ex-forc* OR ex-militar*) AND (social isolation OR lonel*)

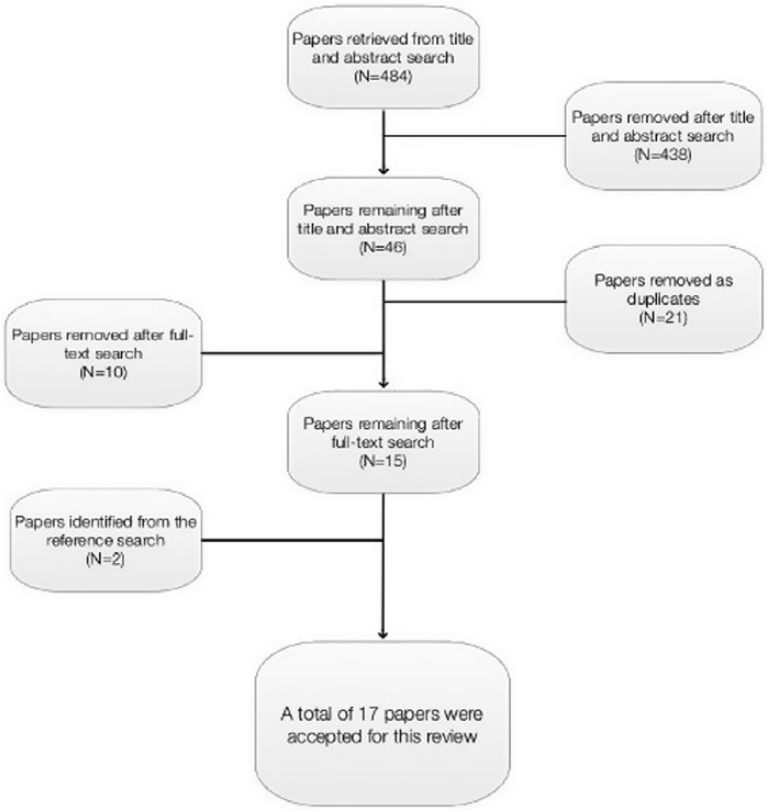

Figure 1. Search strategy used within the systematic search.

further papers being included. A total of 17 papers were included in this review (Table 2).

Results

The age of veterans differed between the studies. Eleven studies included veterans of all ages [19–29], two of which were specifically aimed at understanding age-related differences between veterans in the sample [21,23]. Five studies specifically focused on older veterans with age-related inclusive criteria ranging from 51+ years to 65+ years [30–34] and one study did not report details of age [35].

Three studies focused only on male veterans [21,25,31], one study looked only at sexual minority veterans [23] and one study considered only veterans with HIV/AIDS [25]. Twelve studies were carried out in the USA [19,21–25,29,31–35], one study was carried out in the UK [30] and four studies were carried out in Israel [20,26–28].

Two studies used a mixed-methods approach [25,32], three utilized a qualitative approach [28–30] and 12 used a quantitative approach [19–24,26,27,31,33–35]. Within each broad methodological approach, various specific methods were employed: one study undertook a scoping review and focus group method [30], two studies analysed call logs and call assessment checklists [21,24], four studies used semi-structured interviews [25,28,29,32] and 12 studies utilized questionnaires [19,20,22,23,25–27,31–35]. Of the studies using questionnaires, nine studies specifically measured loneliness or social isolation, using a version of the UCLA loneliness scale self-report scale [20,22,26,27,33,35], the leave behind questionnaire [31], the loneliness scale [19] and the Lubben social network scale [34].

Definitions of loneliness and social isolation are problematic, and empirical evidence often fails to define loneliness or social isolation, using the terms interchangeably as one concept. Only Stein and Tuval-Mashiach [28] provided a conceptual overview of loneliness, and outlined the problems arising with its definition. Loneliness is described across the studies as: 'perceived social isolation' [28,33,36], a 'discrepancy between a person's desired and actual social relationships' [27,33,37], a 'debilitating condition characterized by feelings of isolation, emptiness, worthlessness, lack of control and vigilance for personal threat in one's environment' [35,38], 'an unpleasant and distressing emption that is evoked when one's special relationships are extremely deficient' [26,28,39] and 'an affective and cognitive reaction to a threat to social bonds' [26,40]. Furthermore, the Weiss [41] model is referenced distinctly separating loneliness and social isolation by defining social isolation as 'the absence of an engaging social network' or 'emotional-isolation' which stems from lack of close attachment [26–28]. Ten studies considered loneliness only [19–22,24,26,27,31,33,35]; two studies considered

Table 2. Paper characteristics

Author	Aim	Sample	Method	Location	Findings related to loneliness/ social isolation
Burnell *et al.* [30]	To explore the suitability and acceptability of peer-support services to enhance the well-being of older veterans	*n* = 10 veterans Mean age 66	Scoping review and consultation focus groups	UK	Peer support was a suitable method of addressing social isolation and loneliness. There is considerable variation in current peer-support provision in the UK
Carr *et al.* [31]	To explore if military experiences relate to better adjustment to widowhood, that is reduction of loneliness associated with widowhood for men	*n* = 2148 participants Mean age 69	Longitudinally collected survey data from older Americans, including the Veterans Mail survey	USA	There is a significantly lower level of loneliness among veterans with exposure to death relative to civilians who become widowed; however, veterans without exposure to death remain similar to civilian widowers
Gould *et al.* [32]	To describe the development of a telephone-based programme (RESOLV) aiming to connect veterans with one another by telephone and reduce loneliness	*n* = 18 veterans Mean age 83	Semi-structured interviews; demographic questionnaire	USA	The programme is freely available to all older veterans with a telephone line. The programme allows veterans to connect to age-matched contemporaries, or connect with intergenerational veterans. The programme was feasible and suitable for rural and non-rural veterans
Greenleaf and Roessger [19]	To identify how 'care farming' impacts the perceive loneliness, life satisfaction and optimism of veterans	*n* = 5 veterans Age range 21–60	Questionnaires completed using smartphone push-notification service, (Beck Depression Inventory, post-traumatic stress disorder checklist-5, Cantril self-anchoring striving scale, the loneliness scale)	USA	Some participants demonstrated decreased, or decreasing, levels of loneliness after beginning the care farming programme
Itzhaky *et al.* [20]	To examine the extent to which veterans' post-traumatic stress symptoms affect their marital adjustment, and whether this is mediated by the veterans' sense of loneliness, and to explore the role of attachment in this.	*n* = 504 veterans Mean age 47.16	Dyadic adjustment scale, post-traumatic stress disorder inventory-I, UCLA loneliness scale, experiences in close relationships scale	Israel	Loneliness plays a mediating role in post-traumatic stress symptoms and marital adjustment
King *et al.* [21]	To examine characteristics of male veteran callers to a suicide crisis line, and to examine age-related differences	*n* = 412 veterans Mean age 49	Mixed methods examination of call logs	USA	Loneliness was a relatively uncommon presenting complaint over the sample; however, it was significantly associated with middle/older age
Kuwert *et al.* [33]	To examine the prevalence and correlates of loneliness in a large, contemporary, nationally representative sample of veterans	*n* = 2025 veterans Mean age 71	Questionnaire adapted from the UCLA loneliness scale	USA	Loneliness is prevalent and associated with several health and psychosocial variables among older veterans

Table 2. Continued

Author	Aim	Sample	Method	Location	Findings related to loneliness/ social isolation
Martin and Hartley [35]	To extend understanding of the relationship between loneliness and depression in veterans	*n* = 67 veterans No age information given	UCLA loneliness scale, perceived stress scale, centre for epidemiologic studies-depression scale	USA	Loneliness was shown to be a predictor of depression, and this relationship was mediated by perceived stress
Matthieu *et al.* [22]	To explore whether volunteering impacts a variety of biopsychosocial outcomes among military veterans returning from Iraq and Afghanistan	*n* = 346 veterans Age range 22–55	Post-deployment health re-assessment: primary care post-traumatic stress disorder screen, patient health questionnaire 2, purpose in life scale, general self-efficacy scale, UCLA loneliness scale, interpersonal support evaluation list	USA	Self-reported social isolation was significantly reduced following programme completion
Mistry *et al.* [34]	To examine the role of social isolation in predicting re-hospitalization in a group of older men enrolled in the UPBEAT programme	*n* = 123 veterans Mean age 70	Mental Health Inventory-38 depression and anxiety subscales, Short Form-36, Lubben Social Network Scale (social connectedness and isolation), cumulative illness rating scale	USA	Those patients who reported being social isolated, or at high or moderate risk of isolation, were four to five times more likely to be re-hospitalized within a year, compared to low isolation risk participants
Monin *et al.* [23]	To identify mental health needs of older and younger sexual minority and heterosexual veterans, and to examine whether sexual minority confers vulnerability or resilience in older adulthood	*n* = 3095 veterans lesbian gay, bisexual mean age 56 Heterosexual mean age 60	Demographic data: patient health questionnaire, post-traumatic stress disorder checklist, medical outcomes study social support survey, trauma history screen	USA	Older lesbian gay, bisexual veterans had the smallest social support networks
Porter *et al.* [24]	To identify the characteristic profile of telephone hotline users among veterans, and their triggering crisis points	*n* = 271 veterans Age range 20–79	A suicide call assessment checklist	USA	Loneliness, alcoholism and unemployment were the most common triggering events for suicide attempts
Signoracci *et al.* [25]	To explore the factors in veterans' lives that may contribute to and/or mitigate suicide risk, and to modify the existing tool to be used by those providing care to this population	*n* = 20 veterans Mean age 54	Demographic questionnaire, semi-structured interview	USA	Social isolation and loneliness emerged as being related to the stigma of HIV/AIDS
Solomon and Dekel [27]	To further understand the relationship between post-traumatic stress disorder and loneliness, as well as its role on marital adjustment	*n* = 225 veterans Mean age 55	Post-traumatic stress disorder inventory, UCLA loneliness scale, Martial adjustment using dyadic adjustment scale	Israel	Loneliness serves as a mediator in the association between post-traumatic stress disorder and marital adjustment for both prisoners of war, and non-prisoners of war
Solomon *et al.* [26]	To prospectively examine the longitudinal course of loneliness, social support and post-traumatic symptoms among Israeli veterans	*n* = 610 veterans Age range 19–52 at first wave	Longitudinal assessment: impact of event scale, DSM-IV post-traumatic stress disorder diagnosis, impact of event scale, UCLA loneliness scale, perceived social support scale	Israel	Loneliness remained stable for veterans with combat stress reaction, but decreased for veterans without combat stress reaction. Also, higher levels of post-traumatic symptoms and lower levels of social support were associated with higher loneliness among veterans with combat stress reaction

Table 2. Continued

Author	Aim	Sample	Method	Location	Findings related to loneliness/ social isolation
Stein and Tuvel-Mashiach [28]	To explore loneliness and social isolation in life-stories of Israeli veterans of combat and captivity	*n* = 26 veterans Combat veterans mean age 53 Ex-prisoners of war mean age 62	Semi-structured interviews	Israel	Ex-prisoners of war experienced a sense of alienation and a difficulty in communicating their experiences, which both led to feelings of loneliness and social isolation
Thomas *et al.* [29]	To better understand suicide experiences from the perspective of patients diagnosed with serious mental illness	*n* = 23 veterans Mean age 49	Semi-structured interviews	USA	Loneliness, isolation, depression and hopelessness were commonly described as emotional precursors to the suicide events for all patients

social isolation only [23,34] and five studies considered both loneliness and social isolation [25,28–30,32]. However, in considering the problematic use of interchangeable terms, one study used the idiom 'loneliness/ isolation' as one concept throughout the paper [29] and did not define these concepts.

The studies within this review aimed to examine four areas of social isolation and loneliness: prevalence of loneliness in the veteran population, military service as impacting loneliness or social isolation, the relationship between mental health and loneliness or social isolation, and interventions to combat loneliness and social isolation.

Only one study examined the prevalence of perceived loneliness among veterans [33]. Kuwert *et al.* [33] carried out an online survey, using the UCLA loneliness scale [42] to measure perceived loneliness of older veterans (60+ years). Results suggest that loneliness was common, with almost half of the 2025 respondents reporting feelings of loneliness at least 'some of the time'. The study specifically reports loneliness as being related to factors of increased age, functional limitations, number of lifetime traumatic events, perceived stress, symptoms of depression and symptoms of post-traumatic stress disorder [33]. Kuwert *et al.* [33] acknowledge the range of intrinsic and extrinsic health and psychosocial factors associated with perceived loneliness, highlighting the need to consider these multiple factors when aiming to prevent or reduce loneliness of older veterans.

Five of the studies examined the relationship between military service and their impact on loneliness and social isolation, specifically, the relationship between post-traumatic stress disorder and loneliness [20,26,27], as well as trauma and loneliness [28,31].

Research also explored the prospective examination of loneliness, social support and PTSD symptoms [26]. Self-report survey data showed the differences between veterans experiencing combat stress reaction and those without combat stress reaction, with those experiencing combat stress reaction reporting both higher levels of loneliness as well as consistently stable levels of loneliness over time [26]. The mediation of loneliness in the relationship between PTSD symptoms and marital adjustment (i.e. couple consensus, cohesion, satisfaction and affectional expression) was also considered [20,27,43]. Both studies found that symptoms of PTSD were associated with lower marital adjustment, and this relationship was mediated by loneliness. Carr *et al.* [31] examined experience of trauma and its impact across the life course. Using specified sections of a longitudinal study of older Americans (51+ years), differential adjustment to widowhood between male civilians, male veterans having experienced death exposure in active duty and male veterans not having experienced death exposure in active duty were explored. Findings illustrated that widowhood was significantly related to loneliness across the total sample; however, veterans with exposure to death during active service illustrated similar levels of loneliness to non-widowed men, and significantly lower levels of loneliness to widowed civilians [31]. It is hypothesized that this adjustment may be related to heightened resilience of those having experienced death during combat.

Stein and Tuval-Mashiach [28] also explored the relationship between combat-related trauma of ex-prisoners of war, loneliness and social isolation. Semi-structured interview findings illustrated that ex-prisoners of war felt alienated which led to perceived social isolation as they believed that others could not understand their experiences in service. Individuals also felt that it was difficult to articulate their experiences, again leading to perceptions of both loneliness and social isolation.

Various studies examined the relationship between loneliness or social isolation, and various aspects of mental health, specifically; depression [22,23,35], re-hospitalization [34] and as a risk factor for suicide [21,24,25,29].

Focusing on depression, Monin *et al.* [23] broadly explored the mental health needs of older and younger sexual minority veterans with differences being reported

(younger veterans were those aged <50 years, and older veterans were those aged 75+ years). Older veterans reported higher levels of resilience, and were less vulnerable to depression and PTSD than their younger counterparts. Paradoxically, older veterans reported smaller support networks and higher levels of social isolation. Martin and Hartley [35] more specifically aimed to examine the relationship between loneliness and depression in veterans. A sample of 67 veterans completed the revised UCLA loneliness scale [42] and self-report measures for depression and perceived stress. In this study, loneliness was determined as being a factor in predicting depression, and this relationship was mediated by perceived stress [35]. Contrastingly, other findings determined that individuals who screened positive for probable depression reported reduced feelings of loneliness [22].

Social isolation, rather than loneliness, was also considered as being a factor impacting on psychiatric hospital readmission [34]. The study examined re-admission rates of older veterans (60+ years) enrolled in the 'Unified Psychogeriatric Biopsychosocial Evaluation and Treatment (UPBEAT)' programme. Almost half of the 123 veterans in the sample reported being socially isolated, and those at high or moderate risk of isolation were four to five times more likely to be readmitted than veterans reporting low levels of social isolation.

Loneliness and social isolation were also factors presented by those who had attempted, or seriously considered, suicide [24,29]. Porter *et al.* [24] examined the characteristics of 271 veterans who had called a crisis hotline. They found loneliness was the most common trigger for crisis points. King *et al.* [21] specifically investigated age-related concerns of veterans calling a suicide crisis line and significantly associated older age (65+ years) and middle age (45–64 years) with loneliness presentation. Furthermore, Signoracci *et al.* [25] examined suicide risk factors for veterans living with HIV/AIDS, and found both loneliness and social isolation as psychosocial stressors due to stigma related to HIV/AIDS.

Three studies considered interventions to combat loneliness and social isolation of veterans [19,30,32], two of which specifically targeted older veterans [30,32]. Burnell *et al.* [30] carried out a scoping review of community-based programmes for older veterans in the UK (55+ years) and reported a significant variance in the support provided, as well as a lack of evaluative evidence examining these programmes. The study also used focus groups to explore veterans' views of the suitability and acceptability of peer support for older veterans in the UK [30]. The older veterans acknowledged the importance of individual preferences in this type of service, and participants perceived that peer support was important for different reasons across the lifespan, with peer support being important in the period of transition in earlier life, and peer support remaining important for well-being in later life [30]. Gould *et al.* [32] also focussed upon older veterans (65+ years). A telephone-based programme (recreation, education and socialization for older learning veterans, RESOLV) was developed by Gould *et al.* [32] to investigate social risk factors for depressive symptoms, with an aim to decrease loneliness. The programme was designed specifically for veterans, and a salient difference between this programme and similar others was the large number of males involved, compared with the very low number of males involved in the non-veteran telephone-programme [32]. It is possible that this finding merely replicates the gender imbalance inherent in the composition of military and ex-military populations.

Both of these intervention studies highlighted perceived needs of older veterans, as well as perceived barriers to participating in social programmes. Older veterans considered peer support as being essential [30,32] and were beneficial due to a shared sense of identity [30]. The participants described the benefits of emotional support [30], signposting [30], conversational and social activities [32], technology learning [32], games [32] and travelling [32]. Physical barriers which impacted on participation in the services centred around access to the activities or services, specifically being financial constraints, physical limitations and transportation difficulties [32]. Furthermore, perceptual barriers were also identified which included lack of interest from enough individuals [32], confusion around available services [30] and a feeling on exclusivity for these services which made them difficult to be part of [30].

One intervention study used 'care farming' as an intervention aiming to reduce perceived loneliness, and improve life satisfaction and optimism of veterans of all ages [19]. 'Care farming' aims to improve individuals' health and well-being by working on farms and agricultural landscapes [44]. In addition to the Loneliness Scale, multiple standard outcome measures were used to identify self-reported aspects of health and well-being [45]. Of the three intervention studies, this study was the only evaluation, and the only study to measure perceived loneliness. In this intervention, two of the five participants reported lower levels of loneliness after beginning the intervention, suggesting that increased socialization does not necessarily reduce feelings of loneliness. All three of these studies discussed the use of interventions to increase socialization, or peer-support in the aim of reducing loneliness [19,30,32].

Discussion

This systematic narrative review identified four main themes: prevalence of loneliness in the veteran population, experiences within military service as impacting loneliness or social isolation, the relationship between mental health and loneliness or social isolation, and interventions to combat loneliness and social isolation.

The evidence presented highlights the unique experiences and unique need of military veterans in their experience of loneliness and social isolation, which consequently must be taken into account when designing interventions aimed at tackling loneliness and social isolation within this sub-population. Multiple intrinsic and extrinsic factors specifically related to military experiences (i.e. military-related trauma and PTSD) were associated with the prevalence and experiences of loneliness and social isolation of veterans [20,26–28,31,33]. This supports evidence gathered from military-related charities in the UK which suggest common reasons for feeling lonely and isolated include losing touch with comrades, physical or mental health issues, and struggling to relate to civilians [12]. The support of peers was also acknowledged by participants when considering loneliness and social isolation interventions [30,32] due to a shared sense of identity. Once more, this reflects findings from the survey conducted by the British military charity SSAFA that reported more than a quarter of veterans surveyed would like to meet with other veterans and socialize with others with similar experiences [12]. Currently, it is unknown if the prevalence of loneliness and social isolation differs between the military and non-military population. It is clear from the retrieved evidence that prevalence data of loneliness and social isolation in this population is limited, and there is currently no data comparing prevalence of loneliness or social isolation between the military and non-military population. This is a significant area for further study, to further understand both loneliness and social isolation in both of these populations, specifically for age-matched evidence.

Furthermore, studies provided evidence of increased age as a risk factor for loneliness [33]. The importance of increased functional limitations [32,33], bereavement [31] and smaller social networks [23] are important issues to consider when targeting social isolation and loneliness in the older veteran population, and these findings concur with evidence pertaining to the wider population [11,46,47]. Whilst there are similarities to the non-military older population, it is imperative to also acknowledge the military-specific factors, such as military-related trauma and PTSD, impacting loneliness and social isolation of aged veterans. Although campaigns targeted at the population as a whole understand the importance of individual differences associated with loneliness rather than one universal solution [9], they do not directly recognize military veterans as a unique population as part of these campaigns.

Defining loneliness and social isolation have been discussed throughout this report, and one of the major disadvantages to research in this area is the use of misplaced or inconsistent definitions, or the lack of definition provided within specific studies. Furthermore, research in this area often did not primarily aim to examine loneliness or social isolation. This was beneficial insofar as they highlighted relationships between loneliness or social isolation and mental health issues or suicide risk that may not have otherwise been considered. However, this focus also meant that the emphasis and discussion of loneliness or social isolation was limited within the research base. Research needs to consider the veteran-specific factors related to loneliness and social isolation, as well as considering age-related factors. More academic evaluation studies are needed alongside provision of these programmes. There is currently limited evidence exploring veterans' perceptions of programmes, the efficacy of programmes or the economic implications of these programmes. There are also important recommendations for practice. Age- and function-related differences in service provision must be considered, as the current review suggests that older less functional veterans are lonelier and more socially isolated than younger veterans. Multiple intrinsic and extrinsic factors should be considered when developing interventions aiming to target loneliness and social isolation, including military-specific factors (such as military-related trauma and PTSD). Loneliness and social isolation should be considered when veterans present with mental health needs, or at crisis points. Furthermore, loneliness and social isolation should be considered as mediating factors of other psychosocial constructs, such as marital adjustment. Barriers to participation in socialization activities need to be considered, including practice and functional barriers, as well as perceived social barriers to becoming involved in groups.

However, it is important to note that these recommendations are based only on findings derived from 17 studies, looking at multiple aspects of loneliness and social isolation, and each with their limitations. Considerable further research is required in this area to explore prevalence and experience of loneliness and social isolation, and to evaluate current services and practice.

This review has its own limitations. Firstly, this review is focused specifically upon loneliness and social isolation of veterans, and therefore does not explore social networks, social connectedness or comradeship. This was an intentional focus; however, it is acknowledged that many aspects of socialization are therefore not included in this review. Additionally, only peer-reviewed research was included in this review and it is understood that there are many programmes that aim to reduce loneliness and social isolation of veterans. This decision was taken as its purpose was to examine peer-reviewed evidence available in the area; however, it is understood that details of other interventions are excluded as a result of this.

It is noteworthy at this point to consider whether it is possible to translate research findings generated in one cultural context directly to a 'different other'. In the context of the current review, the USA, Israel and the UK differ in the meaning afforded to military service, and have differing cultural orientations towards the

place of the military in society. Consequently, differences between military cultures exist between the forces of different nation states and these differences are made visible during multinational deployments [48]. We contend that such differences persist into post-service life, and it is highly probable that experiences of social isolation and loneliness differ between, and are mediated by, the status afforded to veterans in particular national contexts.

This study examined peer-reviewed literature on social isolation and loneliness of military veterans. Only 17 papers were found in this search highlighting the lack of research in this area. From these papers, four themes were developed: prevalence of loneliness in the veteran population, experiences of military service as impacting loneliness or social isolation, the relationship between mental health and loneliness or social isolation, and interventions to combat loneliness and social isolation. It is evident that military veterans present unique experiences of loneliness and social isolation, especially older veterans. This requires specific attention outside of campaigns targeted at the non-military population.

Key points

- There is limited evidence examining issues of social isolation and loneliness in the veteran population.
- This systematic narrative review identified veterans as having distinct experiences of loneliness and social isolation to the general population based on experiences during military services.
- A distinction between experiences of younger and older veterans was highlighted.

Funding

This work was supported by the Ministry of Defence Aged Veterans Fund.

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