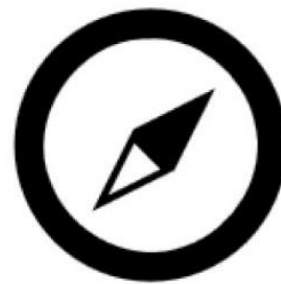


Evidence Compass



Summary Report

**Healthy and Active Ageing in the
Veteran Population and Factors and
Interventions that Achieve Positive
Effect**

A Rapid Evidence Assessment

June 2018

Disclaimer

The material in this report, including the selection of articles, summaries, and interpretations, is the responsibility of La Trobe University, and does not necessarily reflect the views of the Australian Government. La Trobe University does not endorse any approach presented here. Evidence predating the year 1990 was not considered in this review. Readers are advised to consider new evidence arising after the publication of this review. It is recommended that the reader source not only the papers described here, but other sources of information if they are interested in this area. Sources of information not included in this review include non-peer-reviewed literature from overseas and information on websites.

This project utilised a rapid evidence assessment (REA) methodology. An REA streamlines traditional systematic review methods to synthesise evidence within a shortened timeframe. The advantage of an REA is that rigorous methods for locating, appraising and synthesising evidence from previous studies can be upheld. The studies reported can be at the same level of detail that characterises systematic reviews, and results can be produced in substantially less time than required for a full systematic review. Limitations of an REA mostly arise from the restricted duration of the project, resulting in the omission of literature such as unpublished pilot studies, material that is difficult to obtain, and/or non-English language studies. A major strength, however, is that an REA can inform policy- and decision-makers more efficiently by synthesising the evidence in an area within a relatively short space of time and at a lower cost.

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Executive Summary

- The World Health Organisation (WHO, 2015) report on ageing and health defines healthy ageing as the process of developing and maintaining the functional ability that enables well-being in older age.
- The purpose of the literature review was to inform the Department of Veterans' Affairs (DVA) about:
 - whether ageing veterans experience challenges and issues that differ from those of the general population;
 - factors and interventions that positively affect health and wellbeing outcomes for older people (particularly those from military backgrounds).
- Two broad age groups were specified: 45 to 64 years and 65 to 90 years.
- This literature review was consistent with the WHO definitions of active ageing in focusing on three aspects of wellbeing: physical, mental, and social.
- Eight separate, systematic literature reviews were conducted to explore the following themes.
 - **Challenges:** The physical, mental, and social wellbeing of veterans compared with that of the general population (five reviews). These reviews included studies comparing:
 - (a) wellbeing outcomes for veterans and nonveterans within the same study, or
 - (b) veterans with norms on key measures of physical and mental wellbeing.
 - **Determinants:** Determinants of physical wellbeing, mental wellbeing, and social engagement in veterans compared with the general population (two reviews). Studies included in these reviews compared veterans with nonveterans on theoretical determinants of wellbeing outcomes or predictors of wellbeing outcomes.
 - **Interventions:** Interventions to promote healthy ageing in veterans (one review). Studies were included if they were randomised controlled trials, and were omitted if they focused only on post-traumatic stress disorder (PTSD). These studies did not compare veterans with nonveterans.
- The reviews focused on peer-reviewed, quantitative studies identified through searches in Medline. The reviews found, in total:

- 62 studies on challenges to healthy ageing among veterans compared with nonveterans;
 - 77 studies on determinants of physical, mental, and social wellbeing among veterans compared with nonveterans; and
 - 98 studies on interventions to address physical, mental, and social wellbeing among veterans.
- Key findings of the review included:
 - Some veterans clearly experience considerable challenges to healthy and active ageing in comparison to nonveteran peers, including increased risk of poor physical health, poor mental health, and low social engagement. However, the evidence suggests that these hindrances are not experienced equally by all groups of veterans, nor in all domains.
 - Determinants of wellbeing outcomes that disadvantage veterans in comparison to nonveteran peers include the experience of traumatic life events and poor health behaviours (higher smoking and alcohol use, poor sleep, and increased risk of obesity), whereas protective factors for veterans include education and the ability to access health care.
 - A wide range of intervention types have been attempted to improve the wellbeing of older veterans. The review supported the use of telemedicine/telephone support, in-home health assessment, and self-management of chronic health conditions.
 - Gaps in the literature on veterans that are apparent in the wider literature on ageing and aged care services include: a salutogenic approach to ageing, reablement, consumer-directed care, and use of technology.

Background

Healthy and active ageing

Ageing is a “multidimensional process, underpinned by complex social and biological processes and made up of many different mechanisms.”¹ Biologically, ageing is defined as a gradual loss of function with chronological time, with increasing probability of death. Normal ageing is associated with loss of function of many cells, tissues, and organs of the body. However, as many organisations (including the World Health Organisation (WHO), 2016)² have acknowledged, disease-based conceptualisations of ageing are inadequate proxies for health in an older person.

The concept of successful ageing can be traced back to the 1950s and was popularised in the 1980s. It was introduced partly to counter stigma associated with ageing and to acknowledge the contributions that older people make to society. Successful ageing has been conceptualised as involving three components: a) freedom from disease and disability; b) high cognitive and physical functioning; and c) social and productive engagement.³

The term “successful ageing” has since been criticised as it implies failure on the part of those who do not meet the arbitrarily defined criteria,⁴ and because ‘success’ in Western culture is usually associated with economic achievement, employment status, income, and assets.⁵ In response, several alternative terms have been introduced, such as “healthy ageing” and “active ageing”, which are often used jointly or interchangeably in policy documents and the research literature.

The WHO (2002) document on active ageing⁶ describes the key aspects of active ageing as:

- (1) Autonomy: the perceived ability to control, cope with, and make personal decisions about how one lives on a day-to-day basis, according to one’s own rules and preferences.
- (2) Independence: the ability to perform functions related to daily living.
- (3) Quality of life: an individual’s perceptions of the adequacy of their physical health, psychological state, level of independence, social relationships, and relationship to the environment.

The WHO sees active ageing as a collective, rather than individual, responsibility, and one that incorporates a wide range of activities, not just labour market productivity.⁷ Further, active ageing is largely conditioned by prior phases of life. Thus, some individuals

accumulate disadvantage and are at a higher risk than others of being deprived of the opportunity to age actively.

Six groups of determinants of active ageing have been proposed: (1) health and social services; (2) behavioural (e.g., smoking, physical activity, food intake, oral health, alcohol, medication); (3) personal (i.e., biological, genetics, and psychological factors); (4) environmental (i.e., friendly environment, safe housing, absence of pollution); (5) social (i.e., social support, violence and abuse, education); and (6) economic (e.g., wage, social security, access to work).⁸

The WHO⁹ more recently developed a report on ageing and health, which defined healthy ageing as the process of developing and maintaining the functional ability that enables wellbeing in older age. Functional ability is defined in terms of health-related attributes that enable people to be and do what they have reason to value.

Walker (2015)¹⁰ preferred the term “active ageing” over “healthy ageing”. He viewed the concept of healthy ageing as mono-dimensional (i.e., concerned largely with health and health interventions), institutional in focus, and privileging professional perspectives, whereas active ageing requires a “joined-up” approach that subsumes health.

Healthy and active ageing have been important areas of study for some decades. Depp and Jeste’s (2006) literature review¹¹ summarises definitions and predictors of successful ageing and identifies a substantial evidence base to support predictors such as age (being young-old rather than old-old), not smoking, and absence of disability, arthritis, and diabetes. Moderate support was found for physical activity, social contacts, self-rated health, absence of depression and cognitive impairment, and having few medical conditions. Gender, income, education, and marital status were not related to successful ageing.

Concepts of healthy and active ageing have long framed public health and aged care policy in Australia. In 2013, the Coalition (then in opposition) announced its Policy for Healthy Life, Better Ageing.¹² All Australian states and territories have employed similar frameworks for their health and aged care policies and online presence. In addition, many local governments in Victoria and across Australia have had healthy ageing policies or strategies in place for some time, guided by the *Australian Local Government Population Ageing Action Plan 2004-2008*.¹³ The MyAgedCare website—the portal through which older Australians now access services and assistance—includes a page on “healthy and active ageing” advising people to maintain a balanced diet, engage in regular physical activity, and participate in social activity.¹⁴

Design of the literature review

This literature review was consistent with the WHO definitions of active ageing in focusing on three aspects of wellbeing: physical, mental, and social. The review's specific questions (grouped into themes) were as follows.

Table 1: Literature review plan

| Theme | Question(s) |
|----------------------|---|
| Challenges | Q1: What is the physical wellbeing of veterans compared to the general population? Q2: What is the prevalence of long-term physical health conditions in veterans compared to the general population? Q3: What is the mental wellbeing of veterans compared to the general population? Q4: What is the prevalence of mental health conditions in veterans compared to the general population? Q5: What is the social engagement of veterans compared to the general population? |
| Determinants | Q6: What are the determinants of physical and mental wellbeing in veterans, compared with nonveterans? Q7: What are the determinants of social engagement in veterans, compared with nonveterans? |
| Interventions | Q8: What interventions promote healthy and active ageing in veterans? |

Evaluating the evidence

Assessment of the evidence was based on the following criteria:

- the **strength of the evidence base** which incorporated the quality and risk of bias, quantity of the evidence (number of studies), and level of the evidence (study design);
- **consistency** across studies;
- **generalisability** of the studies to the target population; and
- **applicability** to an Australian context.

The evidence was assessed separately for: studies involving wholly or mainly middle-aged participants (aged 64 years or younger); studies involving wholly or mainly older participants (aged 65 years or older); and studies that involved both age groups equally.

For the first two themes (Challenges and Determinants), the evidence was assessed to determine whether there was a difference between veterans and nonveterans. A standard evidence ranking table could be used for the third theme (Interventions). In this table, '**Supported**' means there was clear and consistent evidence of a beneficial effect of the intervention; '**Promising**' means the evidence suggested beneficial effect, but requires confirmation with additional evidence/research; '**Unknown**' is defined as insufficient evidence at present about whether or not to support the use of this intervention, or additional evidence is required to determine efficacy of intervention; and '**Not supported**' is defined as evidence suggesting that the intervention does not have an effect, or produces a harmful effect when implemented.

The tables used in this report to summarise the research evidence are not intended to be exhaustive. They cite examples of studies rather than all the evidence on a topic.

Findings: Challenges

Studies were included in this section of the review if they either: (a) compared veterans with nonveterans on physical health, mental health, or indicators of social engagement (e.g., social activity, social support, and work status); or (b) relied on standard measures of health or mental health, in which veterans were compared directly or indirectly (i.e., through age-standardised norms) with nonveterans. Commonly used measures included the SF-36 and its derivatives, which measure health-related quality of life.

Studies were not included if the groups of veterans and nonveterans were not broadly comparable (e.g., where subgroups of veterans with serious health problems were compared with overall population-based norms).

Findings showed that:

1. Veterans are more likely to experience poor physical health than their nonveteran peers. However, the evidence for this conclusion is stronger and more consistent for middle-aged veterans (aged 45-64) than for older ones (aged 65-90).

Table 2: Higher prevalence of poor physical health (including long-term physical health conditions) in veterans compared with nonveterans

| SUPPORTED | PARTIALLY SUPPORTED ¹ | NOT SUPPORTED ² |
|--|--|--|
| Health-related QoL: Physical ¹⁵ | Alcoholic liver disease ^{20 21} | Tuberculosis ²⁸ |
| Chronic health conditions: ^{16, 17} includes arthritis, coronary heart disease, deafness, diabetes, hypertension, kidney disease, cancers (lung and prostate), migraine, Motor Neurone Disease, obesity | Mortality ^{22 23} | Dementia ^{29 30} |
| Disability and physical function ¹⁸ | Self-rated health ^{24 25} | Circulatory diseases, respiratory diseases, and infectious disease ³¹ |
| Falls ¹⁹ | Function and activity limitation ^{18 26} | |
| | Change in physical and functional health over time ^{26, 27} | |

Note: Of the 17 individual studies featured in this table, 10 are from the U.S., three from Australia, three from the U.K., and one from Canada.

¹ This category includes studies with results for and against the conclusion.

² This category includes studies that show no difference between veterans and nonveterans, or that favour veterans.

2. Veterans are more likely to experience poor mental health than their nonveteran peers. However, the evidence for this conclusion is stronger and more consistent for middle-aged veterans (aged 45-64) than for older ones (aged 65-90).

Table 3: Higher prevalence of poor mental health (including long-term mental health conditions) in veterans compared with nonveterans

| SUPPORTED | PARTIALLY SUPPORTED ¹ | NOT SUPPORTED |
|--------------------------------------|----------------------------------|--|
| Mental health ³² | Depression ^{36 33} | Indicators of optimal ageing (emotional wellbeing, happiness, enjoyment of life) ⁴⁰ |
| Self-rated happiness ³³ | Anxiety ^{37 38} | |
| Alcohol dependence ³⁴ | Suicide risk ³⁹ | |
| Life satisfaction ³³ | | |
| Psychological distress ³⁵ | | |

Notes: Of the nine individual studies featured in this table, six are from the U.S. and three from Australia.

3. Veterans are more likely to experience poor social engagement than their nonveteran peers. However, the evidence for this conclusion is relatively weak.

Table 4: Higher prevalence of low social engagement in veterans compared with nonveterans

| SUPPORTED | PARTIALLY SUPPORTED | NOT SUPPORTED |
|--|---------------------------------|------------------------------------|
| Health-related QoL: Social functioning ⁴¹ | Social support ^{23 45} | Social participation ²⁴ |
| Social disability ⁴² | | Homelessness ⁴⁵ |
| Work disability ⁴³ | | |
| Work discontinuity ⁴⁴ | | |

Notes: Of the seven individual studies featured in this table, five are from the U.S. and one from the U.K.

Study findings were relatively consistent: most studies comparing veterans with nonveteran peers found higher prevalence of long-term physical health conditions and poorer general

physical and mental health. In addition, social engagement was generally lower in general for veterans than comparable nonveteran groups.

However, not all studies reported consistently worse results for veterans than nonveterans. Some studies showed no difference between the two groups, or alternatively suggested that veterans fared better than nonveterans. This was particularly true of studies from the U.K. (rather than the U.S.) and studies of older veterans (aged 65 years and over).

Studies on Australian veterans were relatively few, and included five peer-reviewed studies on challenges and determinants of healthy ageing, five peer-reviewed studies on interventions, and five reports in the “grey” (non-peer-reviewed) literature. Australian studies tended to show poorer health among veterans than nonveterans, but were mainly limited to research on physical health or mental health conditions. One study included a measure of general happiness.³³ No Australian studies were identified comparing veterans with nonveterans on measures of social engagement.

Findings: Determinants

Studies were included in this section of the review if they compared veterans with nonveterans on risk factors for poor outcomes, or if they showed a factor influenced outcomes for veterans but not for nonveterans (statistical moderation). Studies were not included if groups of veterans and nonveterans were not comparable.

Findings showed that:

- There are few clear differences between veterans and their nonveteran peers in relation to sociodemographic factors and life experiences known to hinder healthy ageing. Exceptions are: experiences of traumatic life events; intimate partner violence (in women); and adverse childhood events, which are reported more often by veterans than nonveterans.

Table 5: Higher prevalence of sociodemographic factors and life events that may hinder healthy ageing

| SUPPORTED | PARTIALLY SUPPORTED | NOT SUPPORTED |
|--|--|-------------------------------------|
| Adult traumatic life event ⁴⁶ | Marital status (single) ^{26 40} | Education ⁵³ |
| Intimate partner violence in women ⁴⁷ | Low income ^{26 45} | Socio-economic status ⁵⁴ |
| Childhood adversity ⁴⁸ | Minority race/ethnicity ^{36 50} | |
| Living in a nonmetropolitan area ⁴⁹ | Homelessness ^{51 45} | |
| | Age / cohort ^{34 52} | |

Notes:

- Of the 14 studies featured in this table, 12 are from the U.S. and two are from the U.K.
- Adult traumatic life events were defined in the study referenced here as events since age 16 that had endangered participants' lives or the lives of someone close to them, or which had put them at serious risk, such as a natural disaster, seeing people killed or being raped.
- Childhood adverse events include: household alcohol abuse, exposure to domestic violence, physical abuse, emotional abuse, and sexual abuse.
- Minority race and ethnicity (i.e., being Black or Hispanic in the U.S.) were stronger predictors of low wellbeing in nonveterans than in veterans.
- Some studies show risks or benefits of veteran status vary by age group.

5. Veterans are more likely than nonveterans to be engaged in poor health behaviours that may hinder healthy ageing, but there are no differences in health or mental health service utilisation.

Table 6: Higher prevalence of health conditions, health behaviours, and low use of services that may hinder healthy ageing

| SUPPORTED | PARTIALLY SUPPORTED | NOT SUPPORTED |
|--------------------------------------|---|---|
| Smoking ⁴⁸ | Alcohol use and abuse ^{34, 16} | Nutrition ⁶¹ |
| Poor sleep ⁵⁵ | Drug use ^{58, 59} | Vaccination ⁵⁰ |
| Overweight and obesity ⁵⁶ | Physical activity and | Health treatment ⁶² |
| Sexual history ⁵⁷ | sedentariness ^{40, 60} | Mental health treatment ⁵³ |
| | | Health screening ⁶³ |
| | | Health insurance ⁶⁴ |
| | | Ability to afford health care ⁶⁵ |
| | | Health-related internet use ⁶⁶ |
| | | Preparedness for emergencies ⁶⁷ |

Notes: Of the 19 individual studies featured in this table, 17 are from the U.S. and two are from Australia.

Study findings were not as consistent for determinants of healthy ageing as they were for challenges. Some studies comparing veterans with nonveteran peers found higher prevalence of experiences of trauma and of risky health behaviours such as smoking, poor sleep, overweight/obesity, and high number of sexual partners in veterans. However, other studies showed that veterans had higher levels than nonveterans of protective factors for healthy ageing, such as education, and were equally or better able to access and afford health treatments compared to nonveterans.

Findings: Interventions

Studies were included in this part of the review if they involved veterans in the age groups of interest, were randomised controlled trials, and did not focus solely on post-traumatic stress disorder (PTSD).

Key findings for interventions include:

6. Effective interventions for veterans' physical health include: pharmacist-led interventions for reducing blood pressure; in-home health assessment for general health and function; interventions delivered via the telephone for a range of issues; and self-management of health conditions and health risk factors.
7. Mailing faecal immunochemical tests (FITs) is an effective intervention to improve colorectal screening rates in veterans.
8. Cognitive behavioural therapy is effective in improving veterans' sleep, and home-based counselling is effective in increasing veterans' levels of physical activity.
9. Telemedicine and telephone support are effective mental health interventions for veterans.

Table 7: Interventions for physical health and health conditions

| SUPPORTED (Two or more studies) | PROMISING (One study only) | UNKNOWN Conflicting | NOT SUPPORTED No improvement |
|---|--|-------------------------------|---|
| <p>Pharmacist-led interventions for reducing blood pressure^{68, 69}</p> <p>In-home health assessment for general health and function^{70, 71}</p> <p>Telephone-delivered:</p> <ul style="list-style-type: none"> • CBT and manualised education for pain⁷² • Nurse-led intervention to increase confidence to follow treatment for hypertension⁷³ • Advanced Comprehensive Diabetes Care (ACDC)⁷⁴ <p>Self-management for:</p> <ul style="list-style-type: none"> • medication adherence⁷⁵ • stroke risk factors⁷⁶ • Hepatitis C virus⁷⁷ • bipolar disorder and cardiovascular disease risk factors⁷⁸ | <p>Web-based tool to reduce inappropriate medications (TRIM)⁷⁹</p> <p>Group and individual physical therapy for arthritis⁸⁰</p> <p>Hospital-based Home Care (HBHC) Program for improved cognitive functioning⁸¹</p> <p>Geriatric outpatient management (GEM) for older veterans⁸²</p> <p>Integrated outpatient treatment for ill alcoholic men⁸³</p> <p>Multimodal intervention to improve medication adherence and blood pressure control⁸⁴</p> <p>Mindfulness-based stress reduction (MBSR)⁸⁵</p> <p>Emotional Freedom Technique (EFT)⁸⁶</p> <p>Structured education program to improve pressure ulcer prevention knowledge⁸⁷</p> <p>Pharmacist outreach to improve glycaemic control⁸⁸</p> <p>Enhanced outreach program to improve clinic attendance in rural areas⁸⁹</p> <p>Work therapy for homeless veterans⁹⁰</p> | | <p>Telehealth for pain^{91 72}</p> <p>Telephone-supported care coordination for congestive heart failure⁹²</p> <p>UPBEAT (in-depth geriatric assessment and proactive mental health care coordination) no better than standard care for general health status among older veterans⁹³</p> <p>Hospital-based Home Care (HBHC) Program vs. usual care did not lead to improvement in self-care (ADL)⁸¹</p> <p>Peer-led self-management for hypertension no better than standard care⁹⁴</p> |

Table 8: Interventions for screening and immunisation

| SUPPORTED (Two or more studies) | PROMISING (One study only) | UNKNOWN Conflicting | NOT SUPPORTED No improvement |
|---|--|--|--|
| Mailing faecal immunochemical tests (FITs) to improve colorectal screening rate ^{95, 96} | Healthcare provider intervention for colorectal cancer screening ⁹⁷ Telephone counselling for mammograms ⁹⁸ In-home preventative assessment program for immunisation rates ⁹⁸ Screening of hearing loss for hearing aid use and hearing-related function ⁹⁹ | Tailored or targeted mailouts for mammogram uptake ^{100, 101} | |

Table 9: Interventions for health behaviours

| SUPPORTED (Two or more studies) | PROMISING (One study only) | UNKNOWN Conflicting | NOT SUPPORTED No improvement |
|--|--|---|---|
| <p>CBT for sleep (including telephone-based and nonclinical sleep coaches)^{102, 103, 104}</p> <p>Home-based physical activity counselling via telephone or in-person^{105, 106}</p> | <p>Educational DVD for physical activity¹⁰⁷</p> <p>ASPIRE: nonclinician via telephone or in-person groups for weight loss¹⁰⁸</p> <p>Wellness coaching for weight loss¹⁰⁹</p> <p>Multicomponent smoking treatment¹¹⁰</p> <p>Proactive outreach and choice of smoking cessation services to reduce smoking¹¹¹</p> <p>Flinders Program™ of chronic condition management to reduce alcohol consumption and dependence¹¹²</p> <p>Auricular acupuncture to reduce craving for alcohol, heroin and cocaine¹¹³</p> <p>Residential care unit for homeless, addicted veterans¹¹⁴</p> <p>Contingency management (rewards for abstinence) to improve retention and outcomes for alcohol and drug use¹¹⁵</p> <p>Pharmacist-led interventions for exercise and foot care in diabetes⁶⁹</p> | <p>A brief alcohol intervention with a clinician prompted participants to use more outpatient medical services, but there were no long-term effects¹¹⁶</p> | <p>MOVE! Program involving individual and group sessions and designed to improve physical activity and eating habits and reduce weight was no more effective than providing monthly brochures and handouts¹¹⁷</p> <p>Auriculotherapy (a stop smoking class) did not reduce smoking¹¹⁸</p> <p>UPBEAT Psychogeriatric assessment and proactive mental health care coordination did not reduce alcohol abuse⁹³</p> <p>Offering homeless alcohol-dependent veterans injections to reduce heavy drinking¹¹⁹</p> <p>Telephone-based disease management (TDM) for at-risk drinking¹²⁰</p> |

Table 10: Interventions for mental health

| SUPPORTED (Two or more studies) | PROMISING (One study only) | UNKNOWN Conflicting results | NOT SUPPORTED No improvement |
|---|---|---|---|
| <p>Telemedicine is equally effective as in-person treatment</p> <ul style="list-style-type: none"> • Telephone-delivered CBT for pain management reduced depression⁹¹ • Telephone-delivered behavioural activation reduced depression¹²¹ • Telephone-based disease management to reduce alcohol use reduced depression¹²⁰ | <p>Brief alcohol intervention with personalised feedback for depression¹²²</p> <p>Collaborative care depression treatment¹²³</p> <p>Pain management for depression¹²⁴</p> <p>Behavioural activation delivered at home by videoconferencing¹²⁵</p> <p>Peer-led mental health recovery group¹²⁶</p> <p>Dual-disorder specific CBT and 12-step group for depression¹²⁷</p> <p>Acupuncture to treat cravings for alcohol or drugs and reduce anxiety¹¹³</p> <p>Geriatric outpatient management (GEM)⁷⁰</p> <p>Problem-solving therapy¹²⁸</p> <p>Emotional Freedom Technique⁸⁶</p> <p>Weight loss for quality of life¹¹⁷</p> <p>Intervention for bipolar disorder medical care on quality of life⁷⁸</p> <p>Mifepristone for verbal learning¹²⁹</p> <p>Behavioural interventions combined with cognitive techniques for suicide ideation¹³⁰</p> <p>Health buddy via telehealth for suicide ideation¹³¹</p> | <p>UPBEAT intervention was no more effective than usual care in reducing symptoms of depression except among those with more physical health problems⁹³</p> <p>Sleep intervention for depression¹⁰²</p> <p>Critical Time Intervention to improve quality of care after psychiatric inpatient hospitalisation (modest improvement only in quality of life)¹³²</p> | <p>Problem-solving for depression¹²⁸</p> <p>Sleep intervention for depression¹⁰²</p> <p>Diabetes care (ACDC) did not reduce depression⁷⁴</p> <p>Chronic condition management did not reduce depression⁹¹</p> <p>Illness Management and Recovery (IMR) is no more effective than problem-solving in reducing symptoms of schizophrenia¹³³</p> <p>Telephone-based psychiatric referral-care management (similar to usual care)¹³⁴</p> |

Table 11: Interventions to improve social engagement

| SUPPORTED (Two or more studies) | PROMISING (One study only) | UNKNOWN Conflicting results | NOT SUPPORTED No improvement |
|---|---|---------------------------------------|---|
| | <p>Offering opportunities to work contingent on work performance and health behaviour¹³⁵</p> <p>Twelve-step facilitation for community affiliation¹²⁷</p> <p>Emotional Freedom Technique for social dysfunction⁸⁶</p> <p>GEM clinic attendance for social activity⁷⁰</p> <p>A Critical Time Intervention to promote continuity of care post-hospitalisation for more family contact and community connections¹³²</p> <p>Combining intensive care management with provision of rent subsidy vouchers improved housing¹³⁶</p> <p>Supported employment group to assist veterans with spinal cord injury to gain competitive employment¹³⁷</p> | | <p>Neither integrated, dual disorder-specific cognitive behavioural therapy (ICBT) nor 12-step facilitation improved perceived social support¹²⁷</p> |

Discussion

To summarise: the literature found considerable challenges to healthy and active ageing in veterans, including increased risk of poor physical health, poor mental health, and low social participation. Determinants included having experienced traumatic life events and poor health behaviours (higher smoking and alcohol use, poor sleep, and increased risk of obesity), while protective factors included education and ability to access healthcare. A wide range of intervention types have been attempted to improve the wellbeing of veterans. Some that show promise include interventions using telemedicine and telephone-based support, in-home health assessment, and self-management of chronic health conditions. Some conditions, especially chronic alcohol use in conjunction with other problems (such as homelessness or mental health problems), appear to be particularly resistant to intervention; effective interventions for these problems need to be intensive, such as residential care or contingency-based features incorporating rewards.

One striking characteristic of the literature on veterans' health and wellbeing is the lack of a salutogenic approach (i.e., an approach that promotes health rather than focusing on illnesses and deficits). This approach characterises much of the general gerontological literature, where healthy and active ageing have been influential frameworks for theory and research for several decades. Sufficient evidence now supports interventions such as exercise, music, enjoyable activity, and reminiscence to promote wellbeing in general populations of older adults.¹³⁸

The literature review (see accompanying reports) struggled to identify a body of literature on veterans with a salutogenic focus. The paucity of literature on positive aspects of physical health and wellbeing in middle-aged and older veterans in comparison with age-matched peers is surprising. Most literature on the health and wellbeing of veterans takes a view of health based on the sickness model and focusing on health deficits. This was most acute in the literature on mental health, which was almost always defined and measured in terms of mental illness. We located no peer-reviewed literature comparing veterans with nonveterans on happiness, resilience, mastery, or other strength-based concepts.

It should be recognised that this literature review by design incorporated limitations that might have had a bearing on this absence.

1. Questions on veterans' health, mental health, and social engagement were all framed in terms of comparison with populations of nonveterans. This meant that the review missed articles on factors such as resilience. Informal searches found that articles on resilience have been published, but because they did not employ a nonveteran

comparison they were ineligible for inclusion.^{139 140 141} It also meant that the review did not capture many studies that focus on features of veterans' war experience as predictors of their health and mental health in later decades.

2. Questions on interventions were framed in terms of randomised controlled trials (RCTs).

Again, while the general gerontological literature shows that evidence is growing on the effectiveness of contemporary approaches such as reablement,¹⁴² consumer-directed care,¹⁴³ and interventions that rely on technology,¹³⁸ studies on these topics are largely missing from the literature on veterans. This is surprising.

Other characteristics of the literature identified in this review are important to note. The first is a heavy reliance on evidence from the United States (U.S.). However, U.S. veterans are not the same as those from other countries,¹⁴⁴ and caution needs to be exercised in generalising results across national boundaries.

Secondly, most of the literature features male veterans. Women are often intentionally excluded from population-based analyses of veterans, and have required their own studies.

Thirdly, while many studies have focused on physical and mental health, relatively few have focused on social participation, and studies in this area have resulted in contradictory findings.

Fourth, a focus on rurality is missing from most studies. It is not known whether location has previously been found to have little bearing on outcomes for veterans. Rurality is certainly likely to be an issue in Australia, either positively (in promoting a sense of community) or negatively (in restricting access to services).

Fifth, the review on interventions was characterised by many studies that were "one-offs", with little evidence that positive findings supporting an approach had been applied in other contexts or other populations.

Finally, the review identified few high-quality, peer-reviewed Australian studies, and was supplemented by selected grey literature.

Implications of findings for policy makers and service delivery

1. There is ample evidence that some middle-aged and older veterans may require support and assistance to age actively and in optimal health. However, this conclusion does not apply to all groups of veterans or to all measures of wellbeing. Studies from the U.S. generally reported worse outcomes than those from the U.K., and fewer differences were evident between older veterans and their peers than between younger veterans and their peers.

It cannot be determined whether these differences in study results favouring older veterans are due to cohort effects (e.g., different life and combat experiences) or to positive adjustment with age (e.g., maturity).

2. Findings on determinants suggest that there is plenty of scope for focusing on improving the health behaviours of middle-aged and older veterans (i.e., smoking, alcohol use, diet, physical activity, and control of obesity). While this is also true of nonveterans, the studies reviewed indicate that poor health behaviours are more prevalent among veterans than nonveterans.
3. Veterans who have experienced traumatic life events have increased risk of poor health or mental health outcomes in middle-age or later life. This is likely to be equally true of nonveterans.
4. Potential determinants of healthy ageing not identified by the literature review include social and cognitive activity, factors which are supported by the wider gerontological literature and should not be neglected.
5. The effectiveness of telephone-based interventions lends hope that use of newer technologies may make interventions more accessible, affordable, and immediate. Interventions that rely on technology have been shown to promote emotional wellbeing in older people living in the community. Given that veterans are geographically dispersed, IT-based interventions are a promising avenue to explore.
6. The effectiveness of self-management for a range of health conditions is broadly compatible with a proactive, wellness approach, since it relies on participants taking control of the process of improving their own health, rather than relying on clinicians. Self-management holds promise for assisting veterans to manage their health as they age.

7. Some interventions that have proven useful with older people may need to be amended to suit the special needs of veterans. Reminiscence and life review are a case in point.
8. A growing literature supports the use of person-centred care, consumer-directed care, and restorative (reablement) approaches to home-based and community-based services with people who need assistance due to disability or advanced age. Australian government policy and service provision have increasingly relied on such approaches. However, the current literature review identified no literature on the use of these approaches with veterans. This does not mean that these approaches are irrelevant to veterans; rather, it suggests that mainstream or generic community services and supports have not been the focus of research on veterans.
9. Well-designed evaluations are required for new directions and programs to assist veterans to age well, and these should be published in the peer-reviewed academic literature.
10. There is scope for further Australian research to fill gaps in the evidence highlighted above. Veteran status could be promoted as a priority area for research in the Australian research funding bodies (i.e., National Health and Medical Research Council and the Australian Research Council (ARC)).

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