Psychosocial modification of general self-efficacy in older adults: A restricted review

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Abstract

Objectives: In recent years, the concept of general self-efficacy has increased in popularity. General self-efficacy is positively associated with quality of life and has the potential to act as a psychological buffer against adverse events and circumstances. However, due to the long-term influences that are said to shape general self-efficacy beliefs, they may be resistant to intervention, particularly within the older population. This restricted review aimed to explore whether psychosocial interventions could improve the general self-efficacy of older adults. Aspects of intervention design associated with improvements were also investigated.

Methods: A restricted review was undertaken. This included a keyword search of four major health databases (PubMed, CINAHL, PsycINFO and AgeLine). Search terms focused on general self-efficacy and the commonly used measures of this concept and were limited to the older adult population.

Results: In total, 848 articles were screened, with 20 studies proceeding to data extraction. The modification of general self-efficacy in older adults appears possible, with 7 out of the 20 included studies reporting improvements postintervention. Despite issues relating to the quality of included studies and the generalisability of their results, several aspects of intervention design coincided with intervention success, including intervention duration, and employing sufficiently-qualified staff.

Conclusions: Future research must address the generalisability issues identified in this review. Studies comparing the effectiveness of individual- and group-based interventions, the efficacy of remote delivery platforms and the possibility for long-term transfer of any improvements are needed to contribute the high-quality data required for policy and practice decisions in this area.

KEYWORDS
healthy ageing, positive psychology, psychosocial intervention, self-efficacy
1 | INTRODUCTION

Global population ageing represents a major demographic transformation, with wide-ranging ramifications for health and the burden of non-communicable disease. In response to global ageing, many countries have adopted healthy ageing initiatives, which seek to promote health and well-being throughout the life course by optimising individuals’ health-related attributes. These attributes relate to one’s ability to meet basic needs, learn and grow, be social, be mobile and contribute to society, collectively referred to as functional ability. This functional ability is late to one’s ability to meet basic needs, learn and grow, individuals’ health-related attributes. These attributes related to one’s ability to meet basic needs, learn and grow, and the interaction between the two. One concept that might assist healthy ageing, particularly in the area of intrinsic capacity, is that of perceived self-efficacy.

Perceived self-efficacy relates to an individual’s belief in their own ability to achieve outcomes through action. It is related to motivation and perseverance and influences the kinds of activities people are likely to undertake. Importantly, higher self-efficacy is related to improved physical health and psychological outcomes. Self-efficacy beliefs are determined by four key influences: performance accomplishments (or mastery), vicarious experience, verbal persuasion and emotional arousal. Interventions aimed at improving self-efficacy beliefs must address one or more of these areas. Improvements in self-efficacy could help increase an individual’s intrinsic capacity and, therefore, improve their functional ability.

Perceived self-efficacy is most often measured as a domain-specific concept, such as caring self-efficacy or coping self-efficacy. However, the concept of general self-efficacy (GSE)—developed by Sherer and Maddux in the 1980s to refer to the globalised or trait-like form—has increased in popularity over recent years. General self-efficacy relates to individuals’ perceptions of ability across a range of situations. Historically, GSE has received criticism due to its generality and difficulties in measuring the trait as separate from associated concepts like self-esteem, hope, locus of control and neuroticism, along with GSE’s failure to predict behaviours. Those who support the use of GSE argue that this generalised form positively influences domain-specific beliefs, leading to the hypothesis that high GSE can act as a psychological buffer against adverse events and circumstances. Studies have also linked GSE with healthy ageing and demonstrated GSE is positively associated with quality of life. Key differences between the work on domain-specific self-efficacy and research focusing on GSE include a lack of systematic reviews and meta-analyses investigating the modifiability of GSE compared to domain-specific efficacies and the lower presentation of GSE as a primary outcome in research designs than domain-specific efficacies.

Researching domain-specific self-efficacy, such as balance self-efficacy, pain self-efficacy or exercise self-efficacy, provides a narrow focus for interventions and measurements. However, GSE research and interventions must contend with the broader and inherently vaguer concept of a general self-perception. This raises questions about how interventions that seek to modify GSE, as a situation-independent belief, have been designed and delivered.

As it is thought that GSE is most influenced by aggregate lifetime experience, it may also be more difficult to modify than domain-specific self-efficacies. This is of particular importance within older populations, a group complicated by higher heterogeneity compared to younger ones and the potential need to modify beliefs which have been reinforced over a longer period of time and a wider range of unique experiences. No prior systematic reviews investigating psychosocial interventions to modify GSE in older adults have been identified.

Hence, a restricted review of the published research investigating psychosocial interventions targeting GSE in older adults (aged 65 and over) was completed. This approach differs from that of a full systematic review in that it does not seek to provide a definitive collection of current research or statistical conclusions as to the efficacy of GSE interventions. Instead, this review aimed to explore the following two research questions.

1. Is there sufficient evidence to support the view that older adults’ GSE can be modified by psychosocial interventions?
2. What aspects of intervention design might be associated with GSE modification in older adults?

The findings of this review will add to the evidence base in this area and are intended to inform the design of such interventions.
of future interventions targeting general self-efficacy in older adults.

2 | METHODS

A restricted review is a knowledge synthesis that streamlines or omits various elements required in a full systematic review. These restrictions may include the use of limited search strategies, a lower number of databases or the use of fewer researchers in the collection and analysis of data, and are intended to reduce the time and resources required to assess what is already known about a topic.28,29 While there is no universally accepted approach to conducting such reviews, various guides do exist.29-31 This restricted review followed the guidelines for the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)32 and included additional recommendations for reducing bias.30

2.1 | Search strategy

The databases included in this review were PubMed, CINAHL (EBSCO), PsycINFO (Ovid) and AgeLine, and were selected to provide coverage of both psychosocial interventions and the older adult population. A keyword, title and abstract search was conducted, with truncation and wildcards modified as required. Searches were undertaken in May 2021 using the following keywords and phrases: ‘general* self-efficacy’, ‘global* self-efficacy’, ‘GSE’, ‘GSES’ (i.e. General Self-Efficacy Scale) and ‘NGSE’ (i.e. New General Self-Efficacy Scale), connected with the Boolean operator ‘OR’. This simplified query was intended to return as many results as possible where GSE was discussed. As some studies have shown perceived self-efficacy can be enhanced by interventions not primarily designed to improve self-efficacy,24 no intervention-specific search terms were included.

Search results were limited to peer-reviewed articles published in English. A population limitation of 65 years and over was applied, in recognition of the potential need to tailor self-efficacy interventions to specific groups.23 The CINAHL search excluded MEDLINE records to reduce the number of duplicate records. No publication date limitation was applied.

2.2 | Eligibility criteria

The study inclusion criteria followed the PICOS format33 and were as follows: (a) a study population aged 65 years or over, (b) interventions with a psychosocial component, (c) intervention results were compared to a control group or pre–post comparison with one or more groups, (d) GSE was measured at baseline and postintervention and (e) any intervention evaluation study, using any design methodology, peer-reviewed, published in English and for which a full text was available. Studies were excluded if: (a) GSE was modified to target a specific domain, or was measured only as a predictor or mediating variable, or for validation of a scale, or (b) interventions involved strictly physical treatments or activities, or skills training without any psychosocial component. Results of the literature search and screening process are presented below (Figure 1).

2.3 | Study selection

The results of each database search were uploaded for screening in the Covidence software package. Title and abstract screening followed by full-text screening of all articles was undertaken by the first and second authors. Conflicts were discussed between all three authors and articles were included or excluded by consensus.

2.4 | Quality appraisal

Due to the exploratory aims of this review, no minimum research quality requirement was set. However, the quality of included studies is still of interest and a quality assessment was conducted in line with PRISMA and rapid review guidelines.30,32 The Effective Public Health Practice Project (EPHPP) tool34 was used, as this has shown excellent inter-rater agreement for final quality grading when compared to the Cochrane Collaboration Risk of Bias tool.35 The appraisal was conducted by the first author, with a random selection of studies audited by the second author.

2.5 | Data extraction and synthesis

All relevant quantitative and descriptive data were extracted by the first author using a customised template. Extracted data included author details, year, country of study, aims, study design information, sample sizes, intervention details (e.g. types of therapy, delivery mode and duration), measure of self-efficacy used, results and relevant study limitations identified by the authors. A summarised version is presented below (see Table 1). As this was not a full-scale systematic review, meta-analysis was not attempted. Instead, relevant study findings, along with our analysis, are presented in a narrative style.28,30
3 | RESULTS

3.1 | Search results

In total, 848 records were uploaded to Covidence for title and abstract screening. After removing studies that failed to meet the inclusion criteria, the remaining 128 records were examined in a full-text review. This removed an additional 108 records and left 20 studies that met all inclusion criteria. Three supporting articles were located manually and treated as protocols.36-38

3.2 | Quality appraisal

None of the included studies received a quality appraisal of ‘strong’, with the global quality ratings split between ‘moderate’ (n = 10) and ‘weak’ (n = 10). Common issues included selection bias, confounding factors and lack of blinding (Appendix S1). Three studies were rated as ‘moderate risk’ despite receiving no ‘weak’ ratings,39-41 due to a combination of sample characteristics, attrition rates and the fact that one of these studies was a pilot.

3.3 | Study locations

The studies were conducted in a variety of countries: eight from countries where English would be considered the primary language (three from the United Kingdom, three from Australia and two from the United States of America); and 12 from countries where a language other than English is the primary language (China, Denmark, Germany, Japan, Netherlands, Norway and Sweden) or where a second language has equal official status (Canada).

3.4 | Study characteristics

Seventeen of the included studies were randomised controlled trials (RCTs). Usual care was the dominant comparator, accounting for 12 of the 17 RCTs. Of the remaining
## Table 1: Summary of included studies

| Author                  | Country      | Aims                                                                 | Study design | Control type | Sample size | Sample description | Intervention description | Interaction type | Delivery mode | Mean age (years) | GSE measure | Results                                                                 | EPHPP rating |
|-------------------------|--------------|----------------------------------------------------------------------|--------------|---------------|-------------|--------------------|--------------------------|------------------|---------------|------------------|-------------|--------------------------------------------------------------------------|--------------|
| Barnes & Markham (2018) | United Kingdom | To develop and contribute to the theory and evidence base for single-component, psychosocial interventions that address the difficulties experienced by informal carers of people with dementia | Randomised controlled trials | Pilot RCT | 55 IG = 28 CG = 27 | Carers of people with dementia | A manual-based treatment designed for dementia care aimed at building self-efficacy. | Individual | Face-to-face | IG = 67.0 CG = 68.0 | GSES (Schwarzer) | There were no significant group differences in change in general self-efficacy. Treatment mean difference: −0.4, Control mean difference: +0.1 (p = 0.70) | Weak         |
| Bosma et al. (2011)     | Netherlands  | To examine whether education level was associated with benefits derived from a self-management intervention | Randomised controlled trials | RCT | 361 IG = 183 CG = 178 | Patients with Type 2 diabetes or COPD and depression | A tailored and nurse-administered intervention aimed at reducing depression and increasing quality of life. | Individual | Face-to-face | IG = 70.8 CG = 70.6 | GSE (Sherer) | Unclear                                                                 | Moderate     |
| Bringsvor et al. (2018) | Norway       | To examine the effects of the COPD-specific health promoting self-management intervention on different self-management-related domains, self-efficacy, and sense of coherence | Randomised controlled trials | RCT | 182 IG = 92 CG = 90 | Patients with COPD | Weekly 2-hour-long conversations to increase participants' consciousness of their potential, their internal and external resources, and their abilities to use them. | Group | Face-to-face | IG = 68.5 CG = 69.3 | GSES (Schwarzer) | No significant changes were found for self-efficacy | Weak         |
| Author                  | Country         | Aims                                                                 | Study design          | Control type   | Sample size | Sample description                                                                 | Mean age (years) | GSE measure | Results                                                                 | EPHPP rating |
|-------------------------|-----------------|----------------------------------------------------------------------|-----------------------|----------------|-------------|--------------------------------------------------------------------------------------|-----------------|-------------|------------------------------------------------------------------------|---------------|
| Connor et al. (2019)    | United States   | To evaluate the efficacy of the Care Coordination for Health Promotion and Activities in Parkinson’s Disease program | 1. RCT                | 2. Usual care  | 3. 328IG = 162, CG = 166 | Veterans with Parkinson’s disease                                                   | IG = 69.0       | GSES (Schwarzer) | No significant difference from baseline between usual care and intervention group (95% CI) = −0.88 (−2.04, 0.29) | Moderate      |
| Cooke et al. (2016)     | Australia       | To evaluate the feasibility of testing an education intervention to improve self-efficacy in patients undergoing hip or knee replacement | 1. Pilot RCT          | 2. Usual Care  | 3. 82IG = 40, CG = 42 | Hip or knee surgery patients                                                       | 67.0 (range 36–86 years) | GSES (Schwarzer) | Self-efficacy increased for both groups from baseline to 6 weeks postdischarge with no significant differences between groups at any time point | Moderate      |
| Dawson et al. (2014)    | Canada          | To develop a meta-cognitive strategy training protocol; to determine feasibility of recruiting; and to ascertain whether the protocol would result in far transfer of training effects as a way of reducing older adults’ everyday life problems | 1. Pilot RCT          | 2. Alternative activity | 3. 19IG = 10, CG = 9 | Healthy, community dwelling older adults with complaints of cognitive difficulties and everyday problems. | IG = 74.1       | GSE (Sherer)  | Within-group changes were significant (p < 0.05) for the experimental group, but the magnitude of change was very small (β = 0.01). Repeated measures ANOVA did not show a significant group x time interaction for general self-efficacy | Moderate      |

**TABLE 1** (Continued)
| Author          | Country        | Aims                                                                 | Study design | Control type | Sample size | Sample description | Intervention description | Interaction type | Delivery mode | Mean age (years) | GSE measure | Results                                                                                   | EPHPP rating |
|-----------------|----------------|----------------------------------------------------------------------|--------------|--------------|-------------|--------------------|--------------------------|------------------|--------------|-----------------|-------------|--------------------------------------------------------------------------------------------|--------------|
| Devi et al. (2014) | United Kingdom | To examine the effectiveness of a Web-based cardiac rehabilitation program for those with angina | RCT          | Usual care   | 95IG = 48   | CG = 46          | Individualized, tailored goals focused on exercise, diet, emotions and smoking. | Individual     | Internet     | IG = 66.3         | CG = 66.2    | GSES (Schwarzer)                                                                 | Weak         |
| Doyle et al. (2017) | Australia     | To investigate the impact of CBT and an active social control (befriending) on depression and anxiety symptoms | RCT          | Befriending  | 95IG = 48   | CG = 46          | Behavioural activation, activity scheduling, relaxation training, exposure hierarchies and social skills training, as well as cognitive strategies. | Individual     | Telephone    | IG = 68.5         | CG = 67.0    | GSES (Schwarzer)                                                                 | Moderate     |
| Elzen et al. (2007) | Netherlands    | To evaluate the short-term and longer-term effects of the Chronic Disease Self-Management Program among chronically ill older people in the Netherlands | RCT          | Usual care   | 144IG = 68   | CG = 68          | Exercise; cognitive symptom-management techniques; information on nutrition; fatigue-management; use of medication; managing emotions; communication; problem-solving; decision-making. | Group          | Face-to-face | IG = 68.2         | CG = 68.5    | GSE (Sherer) Adapted                                                                 | Weak         |
| Author          | Country | Aims                                                                 | Study design | Control type | Sample size | Sample description | Intervention description | Interaction type | Delivery mode | Mean age (years) | GSE measure | Results                                                                 |
|-----------------|---------|----------------------------------------------------------------------|--------------|--------------|-------------|--------------------|----------------------------|------------------|--------------|------------------|-------------|--------------------------------------------------------------------------|
| Fors et al.     | Sweden  | To evaluate the effects of person-centred support via telephone in those with COPD and/or CHF | RCT          | Usual care   | 243IG = 120 | CG = 123         | Telephone calls where RNs attempted to build a partnership with patients to deepen their understanding patients' capabilities, resources and potential for self-care. | Individual      | Telephone    | IG = 78.3          | GSES        | Mean (SD) improvement in GSE was significantly greater in favour of the intervention group at both three months 0.7 (± 5.8) vs. −2.2 (± 6.1); p = 0.01 and six months 0.9 (± 6.4) vs. −2.0 (± 6.8); p = 0.006. Splitting the composite score into each component separately in the ITT analysis showed that significantly more patients in the control group had deteriorated in self-efficacy at 6 months |
| Ghielen et al.  | Netherlands | To investigate the feasibility and the efficacy of a body awareness training program (BEWARE) in the treatment of wearing-off-related anxiety in patients with Parkinson’s disease | Pilot RCT    | Usual care   | 46IG = 23   | CG = 23           | Psychoeducation, training in ACT, imaginary exposure exercises, diminishing avoidance behaviour, physical exercises and homework assignments. | Group           | Face-to-face | IG = 59.6          | GSES        | There was no significant improvement in self-efficacy in the BEWARE treatment condition when compared to usual care (p = 0.71) |

TABLE 1 (Continued)
| Author           | Country | Aims                                                                 | Study design | Control type     | Sample size | Sample description | Intervention description | Interaction type | Delivery mode | Mean age (years) | GSE measure | Results                                                                 | EPHPP rating |
|------------------|---------|----------------------------------------------------------------------|--------------|------------------|-------------|---------------------|--------------------------|------------------|---------------|-----------------|-------------|----------------------------------------------------------------------|--------------|
| Jiang et al.     | China   | To determine the effects of a social cognitive intervention to increase volunteering on secondary psychological health outcomes (including general self-efficacy) | 1. RCT       | 2. Alternative activity | 3. IG = 193, CG = 191 | 4. Chinese adults aged 50 years and older with no physical, cognitive, or psychological conditions | 1. Four weekly 60-min group sessions targeting social cognitive intervention and information. | 2. Group         | 3. Face-to-face | IG = 69.8, CG = 72.7 | GSES (Schwarzer) | There was no significant time x group interaction on general self-efficacy at the 6-month follow-up, $F(3, 762.30) = 0.23, p = 0.88$ (Greenhouse–Geisser correction) | Moderate     |
| Knaevelsrud et al. | Germany | To investigate the efficacy and feasibility of an Internet-based, therapist-guided cognitive–behavioural therapy for older individuals with PTSD symptoms | 1. Feasibility RCT | 2. Wait list | 3. IG = 47, CG = 47 | 4. People with clinically meaningful (i.e. subsyndromal or greater) PTSD symptoms | 1. Structured writing assignments that were facilitated through a secured Web-based platform. | 2. Individual    | 3. Internet      | IG = 70.9, CG = 71.9 | GSES (Schwarzer) | There was a significant increase in self-efficacy from pre- to post-treatment with moderate ES (0.38 within-group, 0.39 between-group). These increases remained stable at the 12-month follow-up. Significant group x time interaction effects were observed for GSE which indicated a significantly higher increase of these resource-oriented variables in the treatment group than in the WL | Moderate     |
| Author                  | Country     | Aims                                                                                           | Mean age (years) | GSE measure | Results                                                                                               | EPHPP rating |
|------------------------|-------------|------------------------------------------------------------------------------------------------|------------------|-------------|-------------------------------------------------------------------------------------------------------|--------------|
| Moriyama et al. (2009) | Japan       | To investigate the efficacy of a 12-month self-management education program for people with type 2 diabetes | 1. RCT 2. Usual care 3. 75IG = 50 CG = 25 4. People with type 2 diabetes | IG = 66.4   CG = 65.2 | For changes over time within a group, only the intervention group showed significant differences, with significant chronological improvements in GSE ($p < 0.001$). Two-way repeated-measures ANOVA $F = 6.61$, $p < 0.001$ | Weak         |
| Quinn et al. (2016)    | United Kingdom | To develop and evaluate a self-management intervention for people with early-stage dementia, based on SCT and self-regulation theory | 1. Pilot RCT 2. Usual care 3. 24IG = 13 CG = 11 4. People with early-stage dementia and their caregivers | IG = 75.2   CG = 76.1 | The intervention participants showed gains in self-efficacy compared to control participants with small ES at both three (Cohen's $d = 0.35$) and six months (Cohen's $d = 0.23$) postrandomization | Weak         |
| Rees et al. (2015)     | Australia   | To investigate the effectiveness of a low vision self-management program in older adults      | 1. RCT 2. Usual care 3. 153IG = 93 CG = 60 4. Clients of low vision rehabilitation services | IG = 80.1   CG = 80.5 | At one-month ($p = 0.95$) and six-month ($p = 0.18$) follow-up assessments, no significant between-group differences were found for self-efficacy. Univariate and multivariate analyses revealed no impact of the intervention on outcome measures | Moderate     |
| Author          | Country         | Aims                                                                 | 1. Study design | 2. Control type | 3. Sample size | 4. Sample description | 1. Intervention description | 2. Interaction type | 3. Delivery mode | Mean age (years) | GSE measure | Results                                                                 | EPHPP rating |
|----------------|----------------|----------------------------------------------------------------------|----------------|----------------|----------------|-----------------------|-----------------------------|-------------------|----------------|----------------|-------------|--------------------------------------------------------------------------|--------------|
| Szöts et al. (2016) | Denmark        | To evaluate the effects of structured, nurse managed TFUs discharge from the hospital following TKA | 1. RCT         | 2. Usual care  | 3. IG = 59     | 4. People booked for TKA | 1. TFUs structured around: communication, cognition/development, breathing/circulation, nutrition, elimination, sleep, pain/perception, skin/tissue, sexuality/reproduction, activity and psychosocial/spirituality/culture. | 2. Individual | 3. Telephone | IG = 67.3     | CG = 67.8   | GSES (Schwarzer) | Significant differences in scores were identified in favour of the intervention group on general self-efficacy one-month after TKA ($p = 0.01$), but this effect was not seen at 3 months ($p = 0.54$) | Moderate    |
| Carlstedt et al. (2017) | Sweden         | To investigate the feasibility of a self-management intervention focusing on travelling by bus, and potential contributions to an improved ability to travel by bus for people with cognitive impairments after stroke | 1. Case study  | 2. N/A         | 3.  | 4. People with cognitive impairment after stroke | 1. 2hr sessions per week (group and individual), led by an occupational therapist and a physiotherapist. These contained problem-solving, goal setting and skills training as part of self-management. | 2. Mixed       | 3. Face-to-face | 72.2 (mean) | GSES (Schwarzer) | GSE was slightly lower than in general stroke sample. However, no statistical conclusions can be drawn | Weak         |
| Fullen & Gorby (2016) | United States  | To assess the impact of the Resilient Ageing group program on the combination of participants’ perceived resilience, self-efficacy, and multidimensional wellness | 1. Cohort study | 2. N/A         | 3.  | 4. Purposively selected cognitively intact older adults | 1. 9-week curriculum focused on the whole person and intended to influence psychological wellness and participants’ self-concepts. | 2. Group        | 3. Face-to-face | 78.0 (mean) | GSES (Schwarzer) | No significant changes were found for self-efficacy ($F = 0.06, p = 0.81$) | Weak         |
RCTs, control groups were placed on a waitlist or received the following alternative treatments: a one-hour discussion session using individualised and generic information, befriending, didactic education and cognitive stimulation and physical activity. Of the included RCTs, five were described as pilot studies and one as a feasibility study. The remaining non-RCTs were as follows: two pre–post cohort studies and one pilot case study. Only seven studies sought to investigate GSE as a primary outcome, with the remaining 13 listing GSE as a secondary outcome.

### 3.5 Sample characteristics

The inclusion of pilot and feasibility studies had important implications for the range of sample sizes. While the full-scale RCTs ($n = 11$) contained an average of 199 participants in total, the pilot and feasibility RCTs ($n = 6$) involved much smaller sample sizes, averaging only 53 participants in total. Among the non-RCTs ($n = 3$), total sample sizes were even smaller, averaging only 24 participants.

The specific characteristics of these samples are also worth noting. Almost all ($n = 15$) of the included studies targeted a population with moderate-to-severe health issues, including Parkinson’s disease, dementia, COPD, angina, diabetes, depression and anxiety, vision impairment, cognitive impairment, chronic illness and PTSD. By contrast, the remaining studies recruited adults aged 50 years and older with no physical, cognitive or psychological conditions; individuals with only subjective cognitive difficulties and everyday problems who were otherwise healthy; patients requiring hip and knee surgery who were otherwise healthy; carers of people with dementia; and cognitively intact older adults.

Participant attrition further reduced these often small and heterogeneous samples. Attrition rates were calculated comparing the number of participants at final follow-up to the number initially randomised, as per the EPHPP (2009) appraisal guidelines. Where attrition differed between groups, the higher rate was recorded. In total, 10 studies failed to keep attrition at or below the 20% threshold required for a ‘strong’ quality rating in this domain. Not including a case study—in which just five individuals participated—only one of the remaining studies achieved attrition below 10%. However, this was a pilot study with a sample size of only 24.

### 3.6 Intervention characteristics

By-and-large, interventions were delivered by either nurses or registered psychologists (Appendix S2). The majority ($n = 11$) of the interventions were delivered to
individuals, with group sessions provided in seven studies and a mix of these approaches utilised in a further two studies. Modes of intervention delivery also varied. Of the interventions that were delivered remotely, four used telephone communication exclusively,\textsuperscript{39,44,53,55} two were mixed, involving some telephone communication in conjunction with another method—a DVD\textsuperscript{46} and face-to-face\textsuperscript{56}—and three were delivered via the Internet.\textsuperscript{42,47,52} Every platform type was represented in studies that reported a level of improvement in GSE postintervention.

### 3.7 Intervention duration and follow-up

Both the duration of active intervention and follow-up durations varied greatly (Appendix S2). At the shorter end of active intervention, participants in one study were required to watch a 20–30 min DVD and work through the contained activities four times prior to admission to surgery,\textsuperscript{49} while another resulted in an average of only 40 min’ worth of telephone follow-ups per participant.\textsuperscript{55} The opposite end of the spectrum required participants to undertake three-hour group activities once per week for 8 weeks.\textsuperscript{57} Study duration was similarly diverse, with studies lasting from 2 weeks\textsuperscript{49,55} to between 18 and 24 months.\textsuperscript{39} This disparity largely depended on the underlying intervention and follow-up strategy employed.

### 3.8 Measurement instruments utilised

The majority (n = 16) of the studies included in this review assessed GSE using the GSES scale developed by Schwarzer and Jerusalem.\textsuperscript{58} Three of the remaining studies\textsuperscript{45,50,56} used the original GSE scale,\textsuperscript{15} with a final study\textsuperscript{59} using an adapted scale.\textsuperscript{60}

### 3.9 Intervention results

Fewer than half (n = 7) of the included studies reported an increase in GSE postintervention. Of the studies reporting effect sizes, one achieved a small effect size at both three and 6 months postrandomisation.\textsuperscript{54} Two other studies registered medium effect sizes,\textsuperscript{42,47} with post-treatment improvements maintained at 3 months and 12 months. A medium effect size, but no significant improvement at 6-month follow-up, was also reported.\textsuperscript{52} The final study showed a small-to-medium effect size, lasting for up to 8 weeks.\textsuperscript{44} The remaining studies reporting increases in GSE did not provide effect sizes. Instead, one study identified significantly better results in the intervention group than in the control group at both three and 6 months postintervention,\textsuperscript{55} with a second study recording a significant difference from baseline to 1-month follow-up.\textsuperscript{55} The one multiple case study design included in this review\textsuperscript{48} reported a decrease in GSE at follow-up, but this study included only five participants and no statistical data were reported. Findings from one study\textsuperscript{50} were unclear in both the identified article and a related article identified by hand searching.\textsuperscript{36} The remaining studies failed to show a significant improvement in GSE (see Table 1).

### 4 DISCUSSION

Chief among this review’s findings is the lack of high-quality evidence for the modifiability of GSE. As such, there is insufficient evidence to support conclusions regarding the level of GSE modifiability in older adults, beyond the fact that it appears possible. While several studies did identify improvements, the overall quality of the included evidence is considered low, due to issues concerning study designs that provided only low-level evidence, lack of statistical power, lack of blinding leading to bias, confounding and high attrition, all of which have a negative impact on the applicability of findings.

While most studies included were RCTs, more than one-third of these were pilot or feasibility studies. This limits the applicability of findings, as the aim of pilot and feasibility studies (i.e. to assess a proposed design or the feasibility and cost of an intervention, rather than intervention efficacy per se) influences decisions in relation to sample sizes and the statistical power of results.\textsuperscript{61} The impact of these limitations was acknowledged where authors have suggested ‘considerable caution’\textsuperscript{45} be taken when interpreting results, as they are ‘likely to be underpowered’.\textsuperscript{45} This limitation extended beyond the included pilot studies, with the authors of 12 other articles acknowledging issues with the statistical power of their studies.

Many of the domains of risk assessed as part of the quality appraisal were adequately covered in research designs. However, lack of blinding and confounding factors (e.g. relying on within-group analyses as opposed to between-group analyses; lack of adequate randomisation; and, consequently, an uneven balance of participant characteristics between groups) were common areas of concern that must be addressed in future research designs (see Appendix S1 for the quality appraisal of these domains). While older populations are often characterised by higher heterogeneity than younger ones,\textsuperscript{27,62} most of the included studies directly targeted populations with specific moderate-to-severe health issues (see (4) sample description in Table 1 for the specific health conditions of each study population). This serves to limit the generalisability
of results from these populations, meaning the findings are less valid for healthier individuals. If confidence in results is to be improved, future research designs must adequately address these limitations.

What this review does substantiate is the existence of broad interest in GSE as a personal resource, especially as it relates to the older adult population, where chronic conditions and comorbidities may increasingly have an impact on health-related quality of life. The breadth of this growing interest can be seen in the number of countries represented in this review, along with the existence of pilot and feasibility studies undertaken as precursors to full-scale RCTs. Additionally, the inclusion of GSE as a secondary outcome suggests an intention to take advantage of the potential for GSE improvements resulting from multidisciplinary interventions not primarily designed to target GSE. The potential for interventions to protect against declines in GSE, rather than attempt increases, is another aspect that should be considered in future interventions.53

4.1 Implications for future research

As well as designing research programs that adequately address the above statistical, quality and generalisability issues, future research should consider several key areas identified in this review.

As the most successful studies involved individual training or therapy, future research would do well to assess the efficacy of such an approach on a larger scale. However, the disadvantage of a purely individual approach is that it neglects the important roles of vicarious experience and modelling in behaviour9—notions supported within several of the included studies.44,45,48,49,54,56 The authors of these studies articulated additional benefits of group interventions, such as enhanced feasibility, social support and a sense of giving back to the group. Therefore, future research should also seek to compare outcomes of individual and group interventions.

Where a group approach is used, staff training should include group-specific skills and education. The fact that this had not occurred in one study was recognised by those authors as a potential weakness.51 Regarding the training and qualification levels of those responsible for intervention delivery, interventions delivered by professionals who were experienced in the therapies coincided with intervention success. Where foundational knowledge or experience with the mode of intervention delivery was lacking, additional staff training was highlighted as an important requirement and a potential limitation where this had not occurred sufficiently.39,42,45,47,53 The use of manuals and guides is also recommended to ensure intervention fidelity.

Several authors discussed concerns regarding interventions that were considered too short to impact participants’ GSE,43,48,54 with the use of ‘booster sessions’ suggested as a means of addressing this issue in future research designs.45,50 Remote modes of delivery (discussed below) could be used to incorporate these additional sessions into research designs. Extending the duration of future interventions in this way might also help to modify long-held beliefs that are resistant to short-term interventions.51,56 Of the studies reporting significant GSE improvements, only one involved an intervention delivered within 6 weeks.55 Many authors cited the need for prolonged follow-up to assess whether long-term gains are achievable.43,45,51,53,54,59 Most studies involved a minimum 3-month postintervention measurement, with the majority of these conducting follow-ups 6 months postintervention. The design of future studies must consider the costs associated with high follow-up frequency and longer study durations. Additionally, longer studies might also increase participant fatigue, contributing to higher rates of attrition.49

There was no discernible difference between intervention modes, with face-to-face, telephone and Internet delivery of interventions all reporting GSE improvement. The majority of discussion around remote delivery concerned the benefits for patient access, improved feasibility, lower cost and extended study durations.42,44,49,52,56,57 Non-inferiority trials should investigate the efficacy of Internet and telecommunications versus face-to-face delivery for the modification of GSE.

Where authors discussed the merits of various GSE scales, this centred on the potential benefits of alternative measures that were more proximal to the specific health issues of their patient populations. These included measurements targeting: caring and communication difficulties,43 cognitive difficulties related to dementia,54 self-management51 and anxiety.40 It should be noted that such adaptations would result in measuring domain-specific self-efficacy, rather than GSE.

4.2 Limitations

Restricted reviews have several inherent limitations. First, given the restricted database search, there exists a risk that important studies have not been included. Second, including studies of all levels of quality, along with the heterogeneity of both interventions and samples, limits the generalisability of reported findings. Third, the reduced number of researchers involved in a restricted review also increases the risk of bias. Despite these commonly understood trade-offs, comparisons with full systematic reviews have shown that results do not always
differ substantially.\textsuperscript{28,30} As it was the aim of this review to represent as wide a range of intervention types as possible, moderated by cautious interpretation of study findings, the increased risks were deemed acceptable.

5 | CONCLUSIONS

This is the first restricted review of psychosocial intervention studies targeting GSE in older adults. Fewer than half of the studies reviewed reported improvements in GSE postintervention, issues around study quality and the generalisability of results require that these findings be interpreted cautiously. As such, there is insufficient evidence to support conclusions regarding the level of GSE modifiability in older adults, beyond the fact that it appears possible. Given this, the implications for practice are limited. What this review does highlight is a broad interest in GSE social interventions to improve GSE. The design of these interventions and studies to evaluate their efficacy (and effectiveness) should be informed by the issues and recommendations identified in this review.

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CONFLICTS OF INTEREST

Prof. Yvonne Wells is an Associate Editor of Australasian Journal on Ageing.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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