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Psychological Factors Protecting Against Suicidality in Older Adults: A Systematic Review

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ABSTRACT

Objective: Suicide rates in older adults are often the highest of any age group, particularly among high income countries. However, there is a limited understanding of the factors that could protect against suicidality in older age. This systematic review aimed to identify and evaluate the psychological factors that protect against suicidality in older age.

Method: An a priori protocol was established and registered on PROSPERO (CRD42022343694). EMBASE, MEDLINE, PsycINFO, Web of Science and Scopus were searched. Papers were quality assessed using the Quality Assessment with Diverse Studies (QuADSs) tool. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed. Seventeen papers were included and narratively synthesised.

Results: The initial searches identified 10,673 records, resulting in the screening of 5441 records after the removal of duplicates. The protective factors identified were (1) meaning/purpose in life, (2) reasons for living, (3) coping styles, (4) psychological wellbeing, (5) life satisfaction, (6) personality factors, (7) cognitive functioning, and (8) sense of belonging. The factors with the most empirical support were meaning in life, followed by psychological wellbeing and coping responses, such as primary control strategies, and personality traits, such as positive affect and agency. There was also evidence to suggest that the influence of some protective factors, for example meaning in life, may depend upon stage in older life and gender.

Conclusion: This review identified several psychological factors that have been found to protect against suicidal ideation in older adults, representing potential treatment targets for reducing suicide in older adults. Recommendations for future research includes greater use of longitudinal and case-control designs, measuring outcomes across the continuum of suicidality and using samples that allow comparison between younger and older adults and within the spectrum of old age.

1 | Introduction

Suicide is a global public health issue, with more than 700,000 people dying by suicide each year, the equivalent of one person every 40 s (World Health Organization 2021). Suicide rates in older adulthood are often the highest of any age group, particularly among developed nations (Moutier, Pisani, and Stahl 2021). Data from the Global Burden of Disease Study

estimates the annual rate for suicide in those aged 70+ being 27.45 per 100,000 compared to 16.17 in people aged 50–69 and 11.6 in the 15–49 age group (Naghavi 2019). Moreover, suicide in older age is characterised by less impulsive acts, higher levels of intent and more lethal means (Cai et al. 2021; Draper 2014). Given these high rates, understanding protective factors that reduce suicide risk in older adulthood is crucial for prevention efforts. This includes comprehending

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Summary

- Suicide is a global public health issue, and rates of suicide are elevated in older adults compared to working age adults.
- Evidence was strongest for the association between meaning and purpose in life, along with general psychological well-being, and the reduction in suicidality, and in particular suicidal ideation, in older adults.
- Evidence for coping responses and styles such as grit, ego-resilience and the ability to cope with negative experiences and persevere toward life values as protective factors for suicidal ideation in older adults.
- Mixed evidence for psychological factors such as sense of belonging, reasons for living and cognitive functioning as protective factors against suicidality in older adults.

factors that protect against suicidal ideation, as ideation often precedes suicidal actions (Joiner 2005).

Much research has focused on factors that increase the risk of suicide in older adults. Identified sociodemographic risk factors for suicide in older age include social isolation, financial strain, being widowed or single and living alone (Bonnewyn, Shah, and Demyttenaere 2009; Fässberg et al. 2012; Sinyor et al. 2016). Clinical risk factors include functional disability, chronic illness and pain, depression, and cognitive impairment (Fässberg et al. 2016; Lutz and Fiske 2018; Sinyor et al. 2016). A recent systematic review found the following risk factors to be most associated with suicidal behaviours in older age: depressive disorders and prescription of psychotropic medication, followed by psychological factors (e.g. psychological distress, feelings of hopelessness) and disability (Beghi et al. 2021). Furthermore, male gender, any psychiatric disorder (depression, anxiety and bipolar disorders), stressors/bereavement, and living alone were also identified as significant predictors of suicide deaths in later life. Lastly, research has found that risk factors for suicide also exist at the community level, such as age discrimination (Ko, Han, and Jang 2021; Li, Gee, and Dong 2018) and reduced accessibility to health and social care services (Lodhi and Shah 2005).

The understanding of protective factors against suicide in older adults is more limited compared to research on risk factors (Centers for Disease Control and Prevention [CDC] 2022). Protective factors can be defined as 'societal or psychosocial conditions or individual behaviours that lessen the likelihood that an individual will engage in suicidal behaviour' (McLean et al. 2008, p. 15). They are conceptualised as factors that promote resilience and healthy survival among people known to be exposed to suicidal risk conditions and are not merely the inverse of risk factors, or the absence of them (McLean et al. 2008). An understanding of the protective factors that reduce suicidality is important in formulating potential interventions for suicide (Lapierre et al. 2011).

Protective factors can operate at multiple levels, including individual, familial, community and societal. For instance, individual-level factors might include coping skills, hopefulness and physical activity and health (McLean et al. 2008). At the family level, factors such as family connectedness and support play crucial roles (McLean et al. 2008). Community and societal factors might involve supportive social networks and community engagement, as well as broader cultural attitudes toward ageing and elder care (Fiske, Wetherell, and Gatz 2009). These factors may contribute to a holistic framework of protection that can help buffer against the various stresses and challenges that might otherwise lead to suicidal ideation and behaviour.

A previous review of the literature looking at both systematic reviews and primary studies of populations, including adolescents, veterans, psychiatric patients and victims of domestic abuse, identified protective factors such as coping skills, hopefulness, physical activity and health, social support, family connectedness and supportive schools (McLean et al. 2008). However, this review did not focus on protective factors relevant to older adults, which is important as societal and psychosocial conditions are likely to be different across the life stages (Windsor and Anstey 2010). More understanding is required to identify the protective factors against suicide in older adults.

There are two known systematic reviews which set out to identify factors protecting against suicide in older adults (Holm and Severinsson 2015; Yoon and Cummings 2019). Holm and Severinsson (2015) identified psychosocial risk and protective factors in older adults aged 59+ using a metasynthesis. From 12 quantitative papers, they identified risk factors categorised into four themes: burden to others, poor social integration, strain from physical illness and negative religious activity. Psychosocial protective factors included sense of belonging (SOB), maintaining social dignity, satisfaction with relationships, feeling useful and positive religious activity. However, the review did not specifically examine psychological factors in relation to suicidal ideation and older adults. In terms of psychosocial factors, Holm and Severinsson also reported in their data analysis section that the protective factors emerged when searching for risk factors; consequently, it is unclear to what extent the review was able to comprehensively include the relevant literature on protective factors. Further, various elements of systematic review methodology were absent, such as interrater at any stage of the review, and there was no quality appraisal of the included studies.

Yoon and Cummings (2019) identified protective factors at various levels (individual, family, community and macro), which included spirituality/religiosity, economic status, health status, family solidarity, social activity and positive attitudes toward elders. Despite being a comprehensive review, the population under study was South Korean older adults aged 50+ and thus was not an exhaustive review of all the available evidence for psychological protective factors and suicidality. Similar to Holm and Severinsson, quality issues also existed in the adopted systematic review methodology, impacting upon the validity of their findings.

In summary, there are currently no systematic reviews of protective psychological factors for suicidality in older adults. Whilst risk and protective factors for suicide exist at various levels (individual, relational, community and societal) (Cramer and Kapusta 2017), psychological variables are believed to play a crucial role in how stressors at various levels impact suicidality. For instance, the integrated motivational-volitional (IMV) model of suicide proposes that suicide ideation (SI) is triggered by appraisals of defeat and humiliation in response to life stressors, rather than the stressor itself (O'Connor and Kirtley 2018). Psychological factors such as self-efficacy and internal locus of control may buffer against negative life events and reduce subsequent suicidality (Goldsmith et al. 2002). A comprehensive understanding of the psychological factors that reduce suicidality could identify important treatment targets and develop effective psychological therapies and clinical interventions. Understanding these protective factors is not only critical for developing targeted interventions but also for informing public health policies and resource allocation to support the mental health of older adults. Tailoring interventions to enhance these protective factors could significantly mitigate the risk of suicide in this vulnerable population. Consequently, the present paper conducted a systematic review to identify and evaluate the psychological protective factors for reducing later life suicidality.

2 | Method

An a priori protocol was established and registered on PROSPERO (CRD42022343694). The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al. 2021) were followed.

2.1 | Definitions and Outcomes of Interest

Suicide can be conceptualised as a continuum of ideations and behaviours, ranging from thinking about suicide to suicidal planning and behaviours (Sveticic and De Leo 2012). Within the present review, suicidality was defined as a phenomenon encompassing suicidal ideation (SI), suicide plans and both lethal and nonlethal suicide attempts (House, Kapur, and Knipe 2020). The primary outcome was SI, which includes thoughts about, consideration of or planning to engage in self-directed injurious behaviour with the intention of dying. SI was chosen as the primary outcome because it is the most

studied outcome among the studies under consideration for this review. The secondary outcome of interest was suicide action, including attempt and completion. Protective factors are defined as attributes associated with a lower likelihood of negative outcomes or that reduce the impact of known risk factors (Lopez, Pedrotti, and Snyder 2019). Psychological factors are defined in a broad way as internal mental processes and attributes from within the individual and include personality traits and individual differences, cognitive appraisals and affect regulation (O'Connor and Nock 2014; Resnick 2014). Finally, whilst defining older adulthood by age can be subjective, this review has chosen to use the age criteria of 65 and over. This is because in the UK, 65 years of age has traditionally been taken as the marker for the start of older age (Office for National Statistics 2019).

2.2 | Search Strategy

Articles were identified using EMBASE, MEDLINE, PsycINFO, Web of Science, and Scopus databases. The search strategy was designed to target studies capturing three broad domains: suicidality, protective factors and older adults. Keywords (e.g. "suicid*", "protect*", "older adult*") and subject headings (e.g. Suicidality, Protective Factors, Older Adulthood) specific to each database were used to identify the relevant literature. The primary search strategy was designed in MEDLINE (Table 1) and adapted to the other electronic sources. The targeted literature was not limited by publication date, but studies not available in the English language were excluded ($n = 5$). The original search was executed on 19 August 2022, and reran on 1 April 2024. OpenGrey was used to explore grey literature, as well as enquiry emails sent to key authors following full-text evaluation. No further studies were identified from these sources.

2.3 | Inclusion and Exclusion Criteria

Two primary inclusion criteria were adopted: (1) participants to be within the 'older age' demographic (65 years and above) and (2) the study must have investigated the relationship between a psychological protective factor and suicidality (e.g. SI, suicide attempts and death by suicide). There were no criteria on the measurement method of suicidality, although studies of behaviours without a clear suicidal intent were excluded, as well as self-report data which did not clearly measure suicidal ideation. Papers which included participants younger than 65 were

TABLE 1 | Search strategy used in MEDLINE, PsycINFO and EMBASE and adapted for Web of Science and Scopus.

Strategy	Descriptors used
#1	(Suicide/) OR (Suicidal Ideation/) OR (Suicidality/) OR (suicid*)
#2	(Protective Factors/) OR (protect*) OR (decrease*) OR (prevent*) OR (reduce*) OR (resilienc*) OR (recover*)
#3	(Older Adulthood/) OR (older adult*) OR (advanced age) OR (old* age) OR (elder*) OR (late* life) OR (old* person) OR (late* adulthood) OR (old* people)
#4	#1 AND #2 AND #3

eligible for inclusion if their sample included an identifiable 65+ age group, and comparisons were made between the age groups. Papers were excluded if they did not conduct statistical analyses (e.g. interview studies using qualitative analysis only), focused only on individual case studies, or did not report original research (e.g. literature reviews). Studies about treatment or prevention were excluded. Full text also needed to be available to be included in the review.

2.4 | Screening and Selection Procedures

A two-stage screening process was employed to assess eligibility for inclusion. Initially, the titles and abstracts of all identified papers were screened against the inclusion/exclusion criteria. An independent reviewer screened 8.5% ($n = 464$) of the title and abstracts, achieving substantial agreement with the primary reviewer ($\kappa = 0.66$). The independent reviewer identified three additional papers for potential full-text screening, and a consensus was reached to include one of these papers, bringing the total to 90 papers for full-text screening. The full texts of papers were screened by the primary reviewer, and 17 papers were identified for inclusion in the review. The independent reviewer screened 10% ($n = 9$) of the full-text papers, achieving substantial agreement with the primary reviewer ($\kappa = 0.77$). Whilst the independent reviewer suggested one additional paper for inclusion, it was ultimately deemed outside the scope of the review and excluded. Disagreements between the primary reviewer and independent reviewer during screening were successfully resolved through collaborative discussions.

2.5 | Data Extraction

Document templates were used to extract the following information from all included studies: (a) author and paper type; (b) sample population, setting, size, age range and sex; (c) study methods, including study design and data collection methods; and (d) results relevant to the aim of the review. The document template was informed by the Cochrane data collection form and piloted before commencing data extraction for the remaining papers.

2.6 | Quality Assessment

The methodological quality of included studies was appraised using the Quality Assessment with Diverse Studies (QuADSs) tool (Harrison et al. 2021). This tool was chosen as it has previously demonstrated substantial interrater reliability in the appraisal of heterogeneous studies (Harrison et al. 2021). The quality assessment of five of the papers (29% of the sample) was assessed by an independent reviewer and was discussed to arrive at a consensus on scores. The consensus scores were then used for the quality assessment.

2.7 | Data Analysis Strategy

A narrative synthesis of the findings was produced. Conclusions regarding the relative importance of identified protective factors

were based upon effect size, amount of supporting literature and paper quality.

3 | Results

3.1 | Literature Search Results

Results from screening process appear in the PRISMA Flow Diagram (Figure 1). Database searches retrieved 10,673 papers which were imported into EndNote, and 5232 duplicates were removed. Following title/abstract and full-text screening, 17 papers were identified for inclusion (Table 2). The full texts of two papers were unobtainable and excluded.

Thirty-nine papers were excluded as they included participants below the age of 65, whilst four papers were excluded due to unknown participant age. Seven papers were excluded for investigating risk factors. Sixteen papers were excluded for investigating protective factors that were not psychological in nature. Three papers were excluded due to unclear measure of suicidality. Two papers were excluded as the main body of the text was not published in the English language.

3.2 | Overview of Study Characteristics

The included studies were published between 2002 and 2021. Data was collected from 18 countries across four continents, including North America (eight studies), Asia (six studies), Australia (two studies), and Europe (one study). Most studies were conducted in South Korea ($n = 4$) and the USA ($n = 3$). All studies collected data from older adults currently living in the community. Most studies used a cross-sectional design ($n = 15$). One study used a longitudinal design (Heisel and Flett 2016), and one study used a case-control design (Tsoh et al. 2005) where participants who had died by suicide (data collected from proxy respondents) were matched to participants who had attempted suicide and community controls. Tsoh et al. (2005) was the only study where the outcome was not solely SI and included suicide attempts and deaths by suicide.

3.3 | Quality Assessment Results

Included studies were quality appraised using the QUADS, with scores presented as a percentage of the maximum score (39). Quality ratings ranged from 38% to 79%. Studies with lower quality ratings lacked clear descriptions of theoretical underpinnings and the rationale for data collection tools. Higher quality studies had appropriate study designs and data collection tools, and clear descriptions of the research setting and target population. Few studies adequately addressed recruitment data or evidence of appropriate sampling. Future studies could benefit from involving stakeholders in research design, providing detailed recruitment data and justification for specific measures used, and clearly describing the theoretical and conceptual framework.

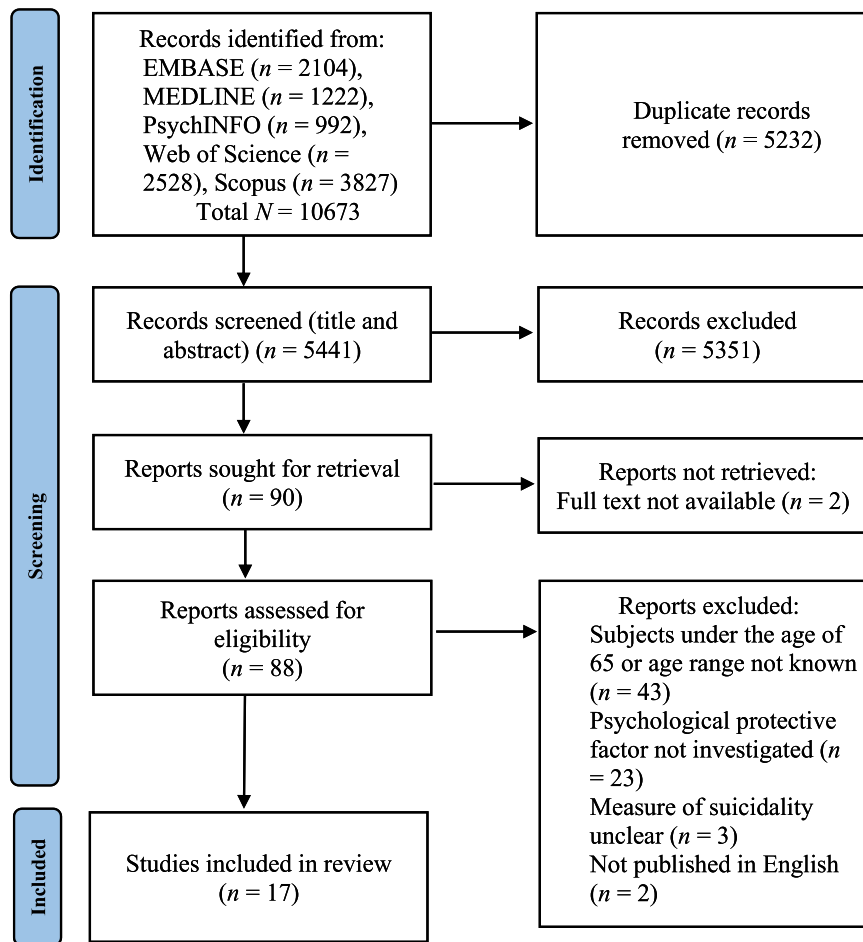


FIGURE 1 | PRISMA diagram of searching and screening.

3.4 | Narrative Synthesis of Findings

3.4.1 | Meaning/Purpose in Life (MIL/PIL)

The factor with greatest empirical support was MIL. MIL is defined as the extent to which an individual perceives themselves as worthwhile and as having a valued life purpose (Steger, Shigehiro, and Kashdan 2009). MIL was investigated in five papers (Heisel and Flett 2008, 2014, 2016; Heisel, Neufeld, and Flett 2016; Lutzman and Sommerfeld 2021), with all papers identifying a protective influence against SI. The papers were noted to be higher quality studies within the review. Heisel and Flett (2008) found that MIL was associated with reduced SI even when controlling for covariates and risk factors, whilst another protective factor, psychological wellbeing (PWB), no longer showed protective effects. One study found MIL moderated the relationship between depression and SI, indicating that MIL is most protective against SI at higher levels of depression (Heisel and Flett 2014).

Whilst MIL was found to have the strongest effect size of papers reporting coefficients, the strength of the relationship between MIL and suicidality varied from weak ($r = -0.16$; Lutzman and Sommerfeld 2021) to strong ($r = -0.65$; Heisel and Flett 2016), and thus, caution is warranted when interpreting the relative importance of this factor. Lutzman and Sommerfeld (2021) found that

MIL was only protective for those in the young-old age group (65–74) and not for those aged 75+. Although the influence of MIL varied depending on age, it is important to note that Lutzman and Sommerfeld's (2021) sample only consisted of males. Therefore, it is unclear if MIL might also vary depending on gender.

Further, there is a lack of clarity regarding the difference between MIL and PIL. Heisel and Flett (2014) propose that MIL and PIL are distinctive concepts, with MIL being about a “deeper existential significance” (pp. 316) and PIL being about intention and “referring to a role or aim” (pp. 316). Evidence from this group has found MIL and PIL scores to be individually associated with SI (Heisel and Flett 2008, 2014, 2016), but when controlling for MIL, PIL does not explain any unique variance in SI (Heisel and Flett 2014). However, Heisel and Flett (2016) found that MIL only predicted the onset of SI over a 6–22-month period when MIL was measured by the PIL-Test and not the EMIL scale. Consequently, it is difficult to determine whether MIL/PIL has independent or combined protective effects in individuals aged 65 and over.

3.4.2 | Reasons for Living (RFL)

A related concept to MIL, RFL, was investigated in one paper and was found to be associated with reduced SI (Heisel, Neufeld,

TABLE 2 | Summary of included studies in the review.

Author	Sample	Sample size in analysis	Measurement of suicidality	Protective factor(s) investigated	Measurement of protective factor(s)	Summary of results
Ahn and Kim (2015)	Mean age: 74.7 Male: 34.1%	220	K-SSI	Coping	Brief Coping Scale (BCS)	Higher coping scores associated with lower SI ($r = -0.29, p < 0.01$). Coping reduced SI ($\beta = -0.31, p < 0.000$), controlling for gender, age, marital status, income, length of stay in the USA and physical illness.
Cha and Lee (2018)	Mean age: 75.1 Male: 37.8%	201	K-SSI	Ego-resilience	Ego-Resilience Scale (ERS)	Higher ego-resilience scores associated with lower SI ($r = -0.49, p < 0.001$). Ego-resilience reduced SI ($\beta = -0.26, p < 0.01$).
Fiske et al. (2013)	Mean age: 74.5 Male: 39.6%	50	GSIS	Primary control (PC) strategies Secondary control (SC) strategies	Optimization of Primary and Secondary Control Scale (OPCS)	Greater use of compensatory PC strategies ($r = -0.45, p < 0.05$) and selective PC strategies ($r = -0.40, p < 0.05$) associated with lower SI. The use of SC strategies was not significantly related to SI.
Heisel, Flett, and Besser (2002)	Mean age: 81.3 Male: 20%	90	GSIS & SSI	Cognitive functioning	Mini-Mental State Examination (MMSE)	Greater cognitive functioning associated with lower SI, whether SI measured by the GSIS ($r = -0.29, p < 0.001$) or SSI ($r = -.21, p < 0.05$).
Heisel and Flett (2008)	Mean age: 81.5 Male: 24%	102	GSIS	Psychological wellbeing (PWB) Meaning in life (MIL) Purpose in life (PIL)	Psychological Well-Being Scale (PWS) Perceived MIL subscale of GSIS PIL subscale of PWS	Higher PWB ($r = -0.60, p < 0.001$), MIL ($r = -0.62, p < 0.001$) and PIL ($r = -0.57, p < 0.001$) scores associated with lower SI. PWB reduced SI ($\beta = -0.34, p = 0.000$). MIL reduced SI ($\beta = -0.29, p = 0.001$). After controlling for covariates (i.e. age and sex) and risk factors (i.e. MMSE scores and psychogeriatric patient status), PWB was no longer significantly associated with decreased SI, whereas MIL was ($\beta = -0.25, p = 0.002$).

(Continues)

TABLE 2 | (Continued)

Author	Sample	Sample size in analysis	Measurement of suicidality	Protective factor(s) investigated	Measurement of protective factor(s)	Summary of results
Heisel and Flett (2014) ^a	Mean age: 73.9 Male: 29%	173	GSIS	Meaning in life (MIL) Purpose in life (PIL) Life satisfaction	Experienced Meaning in Life Scale (EMIL) PIL subscale of PWS Satisfaction with Life Scale (SWLS)	Higher MIL ($r = -0.39, p < 0.001$), PIL ($r = -0.37, p < 0.001$) and life satisfaction scores ($r = -0.45, p < 0.001$) associated with lower SI. PIL did not explain the unique variance in SI when controlling for MIL. MIL moderated the relationship between depression and SI. PIL did not moderate the relationship.
Heisel and Flett (2016) ^a	Mean age: 73.9 Male: 29%	122	GSIS	Meaning in life (MIL)	EMIL Purpose in Life Test (PIL-Test)	Higher MIL scores at baseline associated with lower SI at follow-up, as measured by both EMIL ($r = -0.34, p < 0.001$) and PIL-Test ($r = -0.65, p < 0.001$). MIL at baseline, as measured by the PIL-Test, significantly predicted the onset or exacerbation of SI over a 6- to 22-month period ($\beta = -0.39, p = 0.000$), but not when measured by the EMIL (controlling for baseline suicide ideation, depressive symptoms, problems with health and physical functioning, and frequency and intensity of daily hassles).
Heisel, Neufeld, and Flett (2016) ^a	Mean age: 74.8 Male: 27%	109	GSIS	Reasons for living (RFL) Meaning in life (MIL)	Reasons for Living-Older Adults (RFL-OA) EMIL	Higher RFL ($r = -0.41, p < 0.001$) and MIL ($r = -0.57, p < 0.001$) scores associated with lower SI. RFL reduced SI ($\beta = -0.22, p = 0.013$). MIL reduced SI ($\beta = -0.39, p < 0.001$), controlling for age, sex, depressive symptom severity and loneliness. RFLs no longer explained significant variance once MIL was included in the model. MIL mediated the relationship between RFL and SI.

(Continues)

TABLE 2 | (Continued)

Author	Sample	Sample size in analysis	Measurement of suicidality	Protective factor(s) investigated	Measurement of protective factor(s)	Summary of results
Hirsch et al. (2007)	Mean age: 74.9 Male: 37%	462	SCID & HRSD	Positive affect (PA) Sociability Activity Cognitive functioning	Subclusters of NEO Five-Factor Inventory (NEO-FFI) MMSE	Higher PA scores associated with lower SI ($r = -0.19, p < 0.01$). Trait sociability and trait activity did not reduce SI. High levels of PA reduced SI ($OR = 0.78, 95\% CI = 0.66-0.94$), controlling for age, gender, depression, negative affect, illness burden, trait activity, trait sociability, cognitive functioning and physical functioning. Cognitive functioning was not significantly related to SI.
Hobbs and McLaren (2009)	Mean age: 73.9 Male: 43.4	159	Suicide subscale of GHQ	Agency	Agency subscale of the Personal Attributes Questionnaire (PAQ)	Higher agency scores associated with lower SI ($r = -0.35, p < 0.01$). Agency moderated the relationship between depression and SI, but only in men.
Kim et al. (2014)	Mean age: 78.2 Male: 21.5%	684	K-SSI	Psychological wellbeing (PWB)	PWS	Higher PWB scores associated with lower SI ($r = -0.21, p < 0.01$). PWB had both direct ($\beta = -0.074, p < 0.05$) and indirect effects (via depression, $\beta = -0.102, p < 0.05$) on SI.
Kim (2015)	Mean age: 73.5 Male: 34.5%	315	SIS	Grit	Grit Scale	Grit moderated the relationship between depression and SI. For those low in depression, high amounts of grit made no difference to their SI.
Lee (2021)	Mean age: 74.8 Male: 42.4%	4378	Study-specific	Life satisfaction	Study-specific	Life satisfaction reduced SI ($OR = 0.902, 95\% CI = 0.898-0.906$).
Lutzman and Sommerfeld (2021)	Mean age: 76 Male: 100%	170	SSI	Meaning in Life (MIL)	Meaning in Life Questionnaire (MLQ)	Higher MIL scores associated with lower SI ($r = -0.16, p < 0.05$). MIL reduced SI ($OR = 0.76, 95\% CI = 0.60-0.96$) controlling for age. Among the young-old (ages 65-74), MIL reduced SI ($OR = 0.61, 95\% CI = 0.39-0.94$). This effect was not found in the older group (75+).

(Continues)

TABLE 2 | (Continued)

Author	Sample	Sample size in analysis	Measurement of suicidality	Protective factor(s) investigated	Measurement of protective factor(s)	Summary of results
Tsoh et al. (2005)	Suicide attempters ($n = 66$; mean age 75.5; male 36.48%), suicide completers ($n = 67$; mean age 77.2; male 47.8%), community comparisons ($n = 91$; mean age 74.8; male 41.8%)	224	BSIS	Neuroticism Extraversion Agreeableness Conscientiousness Openness	NEO-FFI	Conscientiousness was the only personality trait that independently showed protective effects against suicide attempts (aOR 0.7, 95% CI 0.5–0.9), although this effect was not seen in suicide deaths. When comparing those who had survived following a suicide attempt and those who had died, conscientiousness increased the likelihood of dying by suicide (aOR 1.3, 95% CI = 1.1–1.5).
Vanderhorst and McLaren (2005)	Mean age: 75.5 Male: 21%	110	Suicide subscale of GHQ	Sense of belonging	Sense of Belonging Instrument (SOBI) subscales: SOBI-P (psychological state) & SOBI-A (antecedents)	Higher sense of belonging scores associated with lower SI, as measured by SOBI-P subscale ($r = -0.30, p < 0.01$) and SOBI-A subscale ($r = -0.35, p < 0.01$). Sense of belonging did not predict SI over and above that which was attributable to social support (controlling for age, gender and highest education level).
Won et al. (2021)	Mean age: Not reported Male: 32.7%	1375	SBQ-R	Life satisfaction	SWLS	Life satisfaction reduced suicidality ($B = -0.072, p < 0.0001$).

Abbreviations: 95% CI = 95% confidence interval; aOR = adjusted odds ratio; BSIS = Beck Suicidal Intent Scale; GHQ = General Health Questionnaire; GSIS = Geriatric Suicide Ideation Scale; HRSD = Hamilton Rating Scale for Depression; K-SSI = Korean version of Beck Scale for Suicidal Ideation; SBQ-R = Suicide Behaviours Questionnaire Revised; SCID = Structured Clinical Interview for DSM-IV; SI = suicide ideation; SIS = Suicidal Ideation Scale; SSI = Beck Scale for Suicidal Ideation; OR = odds ratio.

^aThree studies in this systematic review are linked as they present longitudinal data from the same sample. However, it is important to note that the data reported in each study pertains to unique time periods, and no extracted data is repeated across these studies. Therefore, the data extracted was considered to make unique contributions to the review topic and thus were all deemed appropriate for inclusion.

and Flett 2016). RFLs are defined as positive beliefs and expectations and can be conceptualised as reflecting one's satisfaction or enjoyment of life and/or specific sources of meaning or PIL (Linehan et al. 1983). One of the highest quality papers in the review, Heisel, Neufeld, and Flett (2016), looked at the individual influences of RFL and MIL, finding that both were associated with reduced SI, although RFL to a lesser extent. Furthermore, MIL was predictive of SI even when controlling for RFL, suggesting that the protective effects of MIL may be more potent than RFL. It was also found that MIL significantly mediated the association between RFL and SI. It is difficult to draw firm conclusions regarding the protective influence of RFL in older adults, and how this may relate to other protective factors, due to limited papers exploring this concept.

3.4.3 | PWB

Following MIL, PWB was found to have the next greatest protective influence. However, this factor was only investigated in two studies (Heisel and Flett 2008; Kim et al. 2014). Both studies found that PWB was associated with lower levels of SI, although correlation coefficients varied from weak ($r = -0.21$) (Kim et al. 2014) to strong ($r = -0.60$) (Heisel and Flett 2008). These studies used the same measure of PWB, but differing measures of SI, which could account for the difference. Alternatively, there were differences where the studies were conducted (North America in Heisel and Flett (2008); Asia in Kim et al. (2014)) and thus could reflect cultural differences in the experience of PWB. Interesting questions are raised regarding what PWB represents. The PWB Scale (Ryff, 1989) used in both studies measures six aspects of wellbeing: autonomy, environmental mastery, personal growth, positive relations with others, PIL, and self-acceptance. It could be considered that many factors investigated by papers in this review could fit within these domains. PWB might consist of a range of protective factors, and thus, it would make sense that it protects against suicidality. What would be more interesting is understanding the relative contribution of different aspects of PWB in protecting against suicide in older adults.

3.4.4 | Life Satisfaction

Life satisfaction was investigated in three papers, with all papers finding life satisfaction had some protective effects against suicidality (Heisel and Flett 2014; Lee 2021; Won et al. 2021). These studies were conducted in North America, Europe, and Asia, although due to differences in approach to statistical analyses, it is not possible to compare the effects of life satisfaction on reducing suicidality. In Heisel and Flett's (2014) cross-sectional design, life satisfaction showed a stronger negative relationship with SI ($r = -0.45$) than both MIL ($r = -0.39$) and PIL ($r = -0.37$), although the coefficients are relatively similar. In a large sample of 4378 older adults, Lee (2021) found that life satisfaction reduced the odds of reporting SI by 10%, with sociodemographic factors (such as marital status and number of children) appearing to have a greater protective influence. Given the limited number of papers, and differences in the measurement of life satisfaction and suicidality, it is difficult to draw firm conclusions regarding the protective influence of life satisfaction. Life

satisfaction may also encompass other protective factors, such as MIL and RFL, instead of being a distinct and independent factor.

3.4.5 | Coping

The literature shows that coping mechanisms in response to negative experiences can also protect against suicidality in older adults. Coping is broadly defined as efforts to minimise distress associated with negative life experiences (Carver 1997). One paper explicitly measured the influence of coping on SI (Ahn and Kim 2015), finding that in a sample of older Korean immigrants living in America, coping was associated with reduced SI, which remained the finding when controlling for a range of demographic variables (see Table 2). However, coping is a broad term, and the paper does not identify whether specific types of coping are protective, despite using the Brief Cope Scale which provides a measure of avoidant coping, emotion-focused coping and problem-focused coping. The ability to cope with adversity and life stressors using grit (defined as willingness to persevere toward a long-term goal despite frustration and distress) (Kim 2015) and ego-resilience (defined as the ability to cope with negative emotional experiences) (Cha and Lee 2018) has also been found to be protective of SI. Kim (2015) found that grit moderated the relationship between depression and SI, with grit being the most protective at higher levels of depression. However, this paper was the lowest quality within the review, with a limited theoretical basis, poor rationale for use of data collection tools and poor description of recruitment data and study procedure. Fiske et al.'s (2013) work is the only paper to investigate the influence of specific coping strategies, finding that primary control coping strategies, which aim to change the environment, were protective against SI, whilst secondary control strategies focused on changing the self did not show any protective effects. The sample of this paper was limited to older adults with health-related limitations, although it is reasonable to expect high rates of physical health difficulties in this population. Whilst the research indicates that the ability to adaptively respond to life stressors is important in protecting against suicidality, further research is needed to identify what coping styles are most influential to develop clinical interventions and suicide prevention programmes for older adults.

3.4.6 | Personality

Personality traits have been investigated in three papers (Hirsch et al. 2007; Hobbs and McLaren 2009; Tsoh et al. 2005). All found evidence of protective influences associated with specific traits. Hirsch et al. (2007) were interested in the influence of trait positive affect (PA), trait sociability and trait activity on SI, finding that high levels of PA reduced SI even when controlling for a number of variables (see Table 2), whilst sociability and activity showed no significant influence on the reduction of SI. Trait PA is defined as the tendency to experience positive emotions and moods, whilst trait sociability refers to the extent to which individuals seek out social relationships and trait activity refers to the tendency to seek energetic movement and keep busy (Chapman 2007). Hobbs and McLaren (2009) were interested in agency, described

as characteristics of independence, competitiveness, self-assertion and self-control. Higher agency was associated with reduced SI, and agency was most protective at higher levels of depression in men. However, agency was measured by the extended Personal Attributes Questionnaire (Spence, Helmreich, and Stapp 1974), a measure of ‘masculinity’ and ‘femininity’, with the masculine traits purported to represent agency. Given the poor definition of agency, it has little clinical utility due to difficulties in incorporating it within an intervention. Tsoh et al. (2005) investigated the influence of personality traits on the likelihood of someone making a suicide attempt and/or dying by suicide. In their case-control design, they compared personality traits in individuals who had died by suicide (using informant reports), those who had survived a suicide attempt (SA) and community comparisons. Greater conscientiousness was protective against SA; however, when comparing those who had survived following a SA and those who died, conscientiousness increased the likelihood of death. The paper also investigated neuroticism, extraversion, agreeableness and openness, with evidence of these factors having an influence; however, only conscientiousness was put forward into the final multivariate model. Nonpsychological factors, such as living with children and greater functioning in activities of daily living, showed greater protective influence against SA and death. Overall, the role of personality traits in protecting against suicide in older adults is uncertain given unclear definitions and limited evidence exploring the same aspects of personality.

3.4.7 | Cognitive Functioning

Two papers investigated the influence of cognitive functioning, with mixed results (Heisel, Flett, and Besser 2002; Hirsch et al. 2007). Heisel, Flett, and Besser (2002) found that greater cognitive functioning was associated with lower levels of SI, whilst Hirsch et al. (2007) found no significant relationship, despite using the same measure of cognitive functioning. Heisel, Flett, and Besser (2002) was noted to be of lower quality, with a poor statement of research aims, making it difficult to ascertain whether the study design, data collection tools and sampling were appropriate. The relationship which was found by Heisel, Flett, and Besser (2002) was relatively weak ($r = -0.21$ to -0.29 , dependent on the measure of SI), and overall, it is not possible to conclude that cognitive functioning is protective against SI in older adults.

3.4.8 | SOB

SOB was investigated in one study (Vanderhorst and McLaren 2005), with its protective influence being unclear. SOB is defined as an individual's experience of feeling valued, needed or significant within their social environment. Whilst greater SOB scores were associated with lower scores of SI, when SOB was entered into a regression model controlling for demographic variables (see Table 2), it did not explain any additional variance in SI over and above that accounted for by social support. Within this study, it appears that social support, a coping resource obtained from interpersonal relationships, has a greater protective influence than the psychological factor of SOB.

4 | Discussion

The aim of this review was to identify and evaluate the psychological protective factors for reducing later life SI, attempt and death. A total of 17 papers met the inclusion criteria, with several factors investigated: MIL/PIL, RFL, coping, PWB, life satisfaction, personality traits, cognitive functioning and SOB. This review found promising results for MIL/PIL, PWB and life satisfaction being associated with reduced SI. Certain coping responses and styles (i.e. grit, ego-resilience and primary control strategies) and personality traits (i.e., trait PA, agency) were also found to be protective of SI; however, these findings are based on limited data sets. There was a paucity of research looking at the factors protecting against suicide attempt and death in older adults, with only one paper exploring outcomes beyond SI (Tsoh et al. 2005).

The psychological factor with the greatest empirical support was MIL/PIL. Greater MIL was associated with reduced SI in all papers where it was investigated. Furthermore, MIL showed greater protective effects than both PWB (Heisel and Flett 2008) and RFL (Heisel, Neufeld, and Flett 2016). It was found that MIL protects against SI through both mediating and moderating influences. MIL moderated the relationship between depression and SI, with MIL showing the greatest protective effects at higher levels of depression (Heisel and Flett 2014). Research suggests that older adults with higher levels of depression are at greater risk of suicidal thoughts and behaviours (Beghi et al. 2021). Therefore, increasing MIL may provide greater protection against suicide among older adults. Furthermore, MIL was found to mediate the relationship between RFL and SI, suggesting a significant role of MIL in promoting recognition of reasons to live and decreasing suicidality in later life (Heisel, Neufeld, and Flett 2016). However, despite several papers providing empirical support for MIL, it is important to consider circumstances where its protective influence may vary, with Lutzman and Sommerfeld (2021) finding no protective effect for those aged 75+. Examining how protective factors differ with age is important for developing age-specific interventions aimed at reducing suicidality. In addition, it is noted that all the papers investigating MIL came from North America, and thus, it is unclear whether MIL is a relevant protective factor in other cultures, although MIL was identified as a protective factor for Korean adults aged 50+ in a previous systematic review (Yoon and Cummings 2019). It is also worth noting that four out of the five papers focusing on MIL originated from the same research group (Heisel and Flett 2008, 2014, 2016; Heisel, Neufeld, and Flett 2016), which may raise concerns regarding potential researcher bias and limited generalisability.

The factor with the greatest empirical support after MIL/PIL was PWB, although the strength of the protective effect varied between papers (Heisel and Flett 2008; Kim et al. 2014). It makes intuitive sense that individuals with greater PWB would have lower SI, but PWB's broad definition limits its clinical utility for developing targeted interventions to increase PWB. The same can be said for life satisfaction, which was associated with reduced SI in three papers and across several continents (Heisel and Flett 2014; Lee 2021; Won et al. 2021). It may be that PWB and life satisfaction are composite concepts that encompass several of the protective factors in this review, such as MIL, RFL,

coping and SOB. It would be beneficial for future research to focus on understanding what contributes to PWB and life satisfaction in older adults to provide specified targets for clinical interventions focused on reducing suicide.

Responses to life stressors have been investigated in several papers, finding concepts such as coping (Ahn and Kim 2015), grit (Kim 2015) and ego-resilience (Cha and Lee 2018) to have some protective influences. The ability to cope with negative experiences was found to reduce SI, as were concepts of grit and ego-resilience, which can be conceptualised as the extent to which individuals recover from difficult situations and persevere toward life values. These findings provide support to acceptance-based therapies that suggest that wellbeing can be maintained and distress reduced when individuals work toward their values despite difficult life experiences (Hayes and Lillis 2014). Indeed, there is some evidence for Acceptance and Commitment Therapy in reducing depression symptoms for older veterans (Karlin et al. 2013) and older adults in long-term care (Davison et al. 2017). Unfortunately, an understanding of the specific types of coping strategies which reduce SI and could be incorporated into a skill-based psychosocial intervention was more limited. However, one paper found that older adults with health limitations who endorsed greater use of primary control strategies had less SI (Fiske et al. 2013). It is interesting to once again consider whether coping relates to other factors identified in this review, with evidence suggesting that greater MIL predicts improved coping (Halama 2014; Ward et al. 2023). In a sample of older adults, Van Ranst and Marcoen (2000) found that those with greater MIL used a variety of adaptive coping strategies, with the authors proposing that a belief of MIL results in a utilisation of all available coping mechanisms. Further research could explore how the protective influence of coping against suicidality in older age is influenced by concepts of MIL to help understand whether it can be considered an independent protective factor, or not.

Due to findings being based on single data sets, it is difficult to conclude SOB and RFL as significant protective factors, despite the data indicating some protective influences (Vanderhorst and McLaren 2005; Heisel, Neufeld, and Flett 2016). There are also mixed findings regarding personality and individual differences. A variety of different aspects of personality have been investigated, with trait PA and agency showing some evidence of protective influences (Hirsch et al. 2007; Hobbs and McLaren 2009). Cognitive functioning was associated with lower SI in one paper (Heisel, Flett, and Besser 2002) but demonstrated no relationship in another (Hirsch et al. 2007). Therefore, it is not possible to conclude cognitive functioning to be a protective factor against suicide in older adults, although dementia, an illness associated with loss of cognitive functioning, has been associated with suicide risk in older adults (Sinyor et al. 2016). Overall, whilst personality and cognitive functioning are important psychological factors, understanding their protective influence may be less useful since they are less amenable to change through psychological intervention. Therefore, other factors discussed in this review may be more beneficial to consider when developing interventions aimed at increasing protective factors.

The focus of this review has been on understanding the individual psychological factors that protect against suicide

in older adults. However, that is not to negate the influence of other factors found at various levels (e.g. sociodemographic factors, community and macro-level) (Cramer and Kapusta 2017). Within the papers in this review, there is evidence of other factors having a greater protective role than the psychological factors under investigation. For example, marital status and number of children reduced the likelihood of SI more so than life satisfaction (Lee 2021), and living with children and greater functioning in activities of daily living were more protective against suicide attempt and death than certain personality traits (Tsoh et al. 2005). Future reviews should compare the relative importance of psychological factors to other such factors; however, it is crucial to recognise the role of psychological factors, as sociodemographic factors alone cannot explain the complexity and variability of suicide (O'Connor and Nock 2014). Understanding the psychological mechanisms of suicide is essential for developing interventions to reduce suicidality.

To develop effective suicide prevention programmes, it is important to consider the factors that increase and reduce risk in that population. Suicide in older adults has been described as different to other populations, being characterised by less impulsive attempts, greater levels of intent and more successful methods (Cai et al. 2021; Draper 2014). This raises the question of whether the factors that reduce suicide in older adults are different to younger adults. None of the papers in the review compared the protective influence of psychological factors between younger and older adults. However, it is known that the protective influence of sociodemographic variables can vary according to age (Lee, Hahm, and Park 2013), which suggests that psychological factors may also differ. There are no known systematic reviews broadly looking at the psychological protective factors against suicidality in adults aged between 18 and 64, precluding any possibility to compare the findings of this review to younger adults. However, reviews have focused on understanding the protective influence of specific psychological factors across the lifespan. Systematic reviews of clinical and nonclinical populations have found both RFL and MIL to be protective factors against SI and SA in adolescents, adults and older adults (Bakhiyi et al. 2016; Costanza, Prelati, and Pompili 2019). This suggests that age may be less relevant when considering which psychological factors protect against suicide in older adults. However, the nature of these factors may differ for older adults, as older adults report moral objections and child-related concerns as stronger reasons for not engaging in suicidal behaviours than younger adults (Miller, Segal, and Coolidge 2001). It can also be speculated that some protective factors may be harder for older adults to achieve, such as MIL, due to repeated losses (e.g. retirement, bereavement and physical frailty). Indeed, the only known meta-analysis on the topic found that PIL declined with age, with this decline being stronger in older age groups (Pinquart 2002). Overall, more studies and reviews are needed to compare how psychological factors protect against suicide across different age groups. This will help to determine if age is important in the protective nature of these factors.

There are limitations of the review papers which need to be considered when drawing conclusions. Firstly, most papers in the review were cross-sectional, except for one longitudinal study

(Heisel and Flett 2016) and one case-control study (Tsoh et al. 2005). The predominance of cross-sectional studies means that it is difficult to establish the nature of any causal relationship between a protective factor and suicidality. Future research could benefit from using longitudinal designs to ascertain what psychological factors are protective for individuals over time. Secondly, this paper was interested in the continuum of suicidality and protective factors against suicidal thoughts, attempts and death. However, only one paper used suicide attempts and death as their outcome of interest (Tsoh et al. 2005). Reducing SI is important as it is a predictor of suicide attempts and death (O'Connor and Kirtley 2018); however, the factors that protect against suicidal behaviours may differ from those against SI since not all cases of ideation lead to action (O'Connor and Kirtley 2018). Lastly, it would be beneficial to identify protective factors specific to older adults when designing suicide prevention programmes; however, none of the papers in the review allowed for such comparisons to be made due to their sample. Future research exploring the factors that protect against suicidality in older adults should focus on the continuum of the suicidal experience, as well as comparing the importance of these factors to other age groups.

There are also potential methodological limitations of this review. Defining an age cut-off for older adulthood is a potentially subjective process. The age range of 65+ was chosen for this review due to historical and service-related reasons (National Health Service 2019; Office for National Statistics 2019). However, it is recognised that this chronological definition is less relevant today as people are retiring later and living longer. Secondly, due to a limited number of papers addressing the research question, the results came from a diverse range of countries and continents, which raises cultural considerations. For instance, evidence suggests that attitudes toward suicide in East Asian cultures may bias the reporting of suicidal behaviour (Han, Ogrodniczuk, and Oliffe 2013). Underreporting of suicidal experiences is likely to impact results found in a study of protective factors. Furthermore, it is possible that protective factors might vary across cultures, with potentially a greater focus on relational and community-level factors in collectivist cultures. Thirdly, the broad range of content, exposure and outcome measures and populations among the papers necessitated a narrative synthesis. If there was greater homogeneity in papers, a meta-analysis could identify which psychological factors have the greatest protective effect. Finally, due to the exclusion of non-English papers and use of English-language dominant databases, it is possible that papers relevant to the research question may have been missed.

4.1 | Clinical Implications

The protective factors identified in the review are important for practitioners to consider during suicide risk assessment, particularly an older person's sense of MIL, PWB, satisfaction with life and coping style. Whilst the complexities associated with evaluating suicide risk in clinical settings have been acknowledged (Ryan and Oquendo 2020), there is a recognition of the importance in understanding the existence of both risk and protective factors. The findings presented in this review may offer insights to support the process of assessing suicide risk in older adults. The review findings can also inform the development of

interventions or therapies that aim to reduce suicidality in older adults by enhancing protective factors, for example, helping individuals to identify life purpose, gain skills to enhance mental wellbeing and develop adaptive ways of responding to life stressors.

5 | Conclusion

Suicide among older adults is major a public health concern, and effective prevention programmes require understanding of the psychological processes involved in suicidal thinking and behaviours. To conclude, this review highlights promising psychological factors that may reduce suicidality in older adults and can be targeted in clinical interventions.

Disclosure

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Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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