Journal Website

Article history:
Received 28 May 2026
Revised 22 August 2026
Accepted 29 August 2026
Initial Publication 01 September 2026
Final Publication 01 November 2027

International Journal of Education and Cognitive Sciences

Volume 8, Issue 6, pp 1-15

E-ISSN: 3041-8828

Development, Validation, and Evaluation of a Psychological Hardiness Training Package for Older Adults Residing in Nursing Homes

Maryam. Hojjati[1], Reza. Soltani Shal [1*], Sajjad. Rezaei[1]

[1] Department of Psychology, Faculty of Literature and Humanity, University of Guilan, Rasht, Iran

*** Corresponding author email address**: Reza.SoltaniShal@Guilan.ac.ir

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Hojjati, M., Soltani Shal, R., & Rezaei, S. (2027). Development, Validation, and Evaluation of a Psychological Hardiness Training Package for Older Adults Residing in Nursing Homes. *International Journal of Education and Cognitive Sciences, 8*(6), 1-15.
https://doi.org/10.61838/kman.ijecs.464

A B S T R A C T

Purpose: The present study aimed to develop, validate, and evaluate the effectiveness of a psychological hardiness–based training package on life satisfaction and psychological well-being among older adults residing in nursing homes.

Methods and Materials: In this sequential exploratory mixed-methods study, the training package was initially developed based on in-depth interviews with 17 participants, including older adults and specialists, and its content validity was subsequently confirmed by 10 experts. In the quasi-experimental phase, using a pretest–posttest design with a control group, 30 older adults residing in nursing homes in Rasht were matched and then randomly assigned to an experimental group (n = 15) and a control group (n = 15). The experimental group received twelve 70-minute intervention sessions over 6 weeks. The instruments included the Satisfaction With Life Scale (SWLS) and the short form of Ryff's Scales of Psychological Well-Being (RSPWB). Data were analyzed using univariate analysis of covariance (ANCOVA) and multivariate analysis of covariance (MANCOVA).

Findings: The qualitative analysis resulted in the identification of 10 key components and the development of a 12-session training package. The quantitative findings indicated that the intervention significantly increased life satisfaction ($p < .001$) and the total psychological well-being score ($p < .001$) in the experimental group. At the component level, self-acceptance, positive relations with others, purpose in life, and autonomy improved significantly ($p < .001$), whereas changes in environmental mastery and personal growth were not statistically significant.

Conclusion: The developed training package, grounded in a culturally contextualized structure and demonstrating high validity, represents an effective and empowering intervention for improving dynamic dimensions of psychological well-being and life satisfaction among older adults. Its integration into supportive programs provided by nursing homes is therefore recommended.

Keywords: *psychological hardiness, life satisfaction, psychological well-being, older adults, mixed-methods research.*

1. Introduction

Population ageing is one of the most consequential demographic transformations of the twenty-first century and has substantial implications for health systems, social policy, family structures, long-term care services, and the psychological well-being of older adults. Advances in

medical care, reductions in mortality, and increased life expectancy have contributed to a rapid growth in the proportion of older people in many countries, including Iran. This demographic transition has intensified the need for policies and interventions that move beyond the treatment of disease and disability toward the preservation of autonomy, psychological functioning, social participation, and quality of life in later adulthood. In Iran, the acceleration of population ageing has created particular challenges for health and social-care systems, especially in relation to the organization of long-term care and the provision of appropriate services for older adults whose family or social circumstances necessitate residence in institutional settings (Doshmangir et al., 2023). Internationally, ageing is increasingly conceptualized not merely as a biomedical process but as a multidimensional phenomenon shaped by physical health, psychological resources, social relationships, environmental accessibility, and opportunities for meaningful engagement. Accordingly, the design of age-friendly environments and accessible community services has become central to efforts aimed at maintaining independence and well-being in older populations (Jiang et al., 2025).

Older adulthood is accompanied by heterogeneous changes in physical, cognitive, emotional, and social functioning. Although many individuals maintain satisfactory levels of functioning well into advanced age, others experience chronic illness, sensory impairment, cognitive decline, reduced mobility, bereavement, loneliness, role loss, and diminished independence. Contemporary geriatric research also highlights the complexity of managing neuropsychiatric and perceptual symptoms in older adults, particularly when age-related vulnerabilities coexist with medical and cognitive conditions (Huang, 2025). Physical health problems may further interact with psychological functioning; for example, age-associated conditions such as tooth loss and other indicators of declining health have been linked to broader functional and cognitive outcomes among older populations (Chen et al., 2025). These interrelated vulnerabilities underscore the importance of interventions that strengthen older adults' psychological resources and adaptive capacities rather than focusing exclusively on symptom reduction.

The challenges of later life may become particularly pronounced among older adults residing in nursing homes. Institutionalization frequently involves major changes in daily routines, living environment, personal roles, social networks, and perceived control over one's life. Separation from familiar surroundings and family members can contribute to loneliness, reduced sense of belonging, perceived dependency, and a loss of meaningful social roles. Research on nursing-home residents has therefore increasingly emphasized resilience, self-acceptance, and adaptive coping as important psychological resources that can mitigate the negative effects of institutional living (Sudarsiwi et al., 2023). Older adults living in care facilities may also experience higher levels of perceived stress because they must adapt simultaneously to age-related losses and institutional constraints. Evidence indicates that psychological interventions such as mindfulness-based stress reduction can reduce perceived stress and strengthen resilience in nursing-home residents (Parandin, 2023). These findings suggest that institutional care should not be limited to physical assistance but should include structured psychosocial programs designed to preserve agency, coping capacity, connectedness, and meaning.

One of the most important indicators of successful adaptation in later life is life satisfaction. Life satisfaction represents the cognitive-evaluative component of subjective well-being and reflects the extent to which individuals judge the overall conditions of their lives as congruent with their personal standards, goals, and expectations. Unlike transient positive or negative affect, life satisfaction captures a broader appraisal of one's life as a whole. Its measurement has been facilitated by psychometrically robust instruments such as the Satisfaction With Life Scale, which has demonstrated acceptable reliability and validity in Iranian populations (Bayani et al., 2007). In older adulthood, life satisfaction is influenced by a wide range of factors, including health status, autonomy, perceived age, emotional experiences, social participation, financial security, and interpersonal support. For instance, evidence among older workers suggests that life satisfaction is shaped by the interaction of organizational justice, workplace emotions, and subjective perceptions of ageing, illustrating that satisfaction in later life remains sensitive to social and contextual experiences rather than being determined solely by chronological age (Hu et al., 2024).

Psychological well-being is another central construct in healthy ageing. The eudaimonic perspective conceptualizes psychological well-being as more than happiness or the absence of psychopathology; it encompasses optimal psychological functioning, personal development, self-acceptance, autonomy, positive relations with others, environmental mastery, and purpose in life. The integration of hedonic and eudaimonic traditions has demonstrated that

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well-being is multidimensional and that optimal mental health requires both positive evaluation of life and effective psychological functioning (Keyes et al., 2002). Ryff's model is particularly relevant to ageing because its dimensions correspond closely to the developmental tasks and challenges encountered in later life. The psychometric properties of Ryff's Psychological Well-Being Scale have also been supported in Iranian samples, facilitating its use in assessing these dimensions in culturally relevant research contexts (Bayani et al., 2008).

Psychological well-being in older adults is affected by both risk and protective factors. Cognitive failures, negative affect, perceived social support, and coping self-efficacy have been shown to contribute to differences in psychological well-being among older individuals, indicating that well-being is partly dependent on modifiable psychological mechanisms (Mohammadi et al., 2022). Social relationships are particularly important because emotional support and interpersonal connection may reduce the psychological burden of age-related stressors. Conversely, social isolation, loneliness, diminished family contact, and perceived uselessness may undermine self-acceptance and purpose. These mechanisms are especially salient for nursing-home residents, whose opportunities for reciprocal social engagement may be restricted. Thus, interventions targeting well-being need to address not only internal emotional processes but also social connectedness, coping self-efficacy, and opportunities for meaningful participation.

An increasingly relevant construct in this context is psychological hardiness or mental toughness. Hardiness was originally conceptualized as a pattern of attitudes that enables individuals to remain psychologically resilient when confronted with stressful or adverse circumstances. Its core dimensions are commonly described as commitment, control, and challenge. Commitment refers to sustained engagement with life and one's activities, control reflects the belief that one can influence important aspects of one's experience, and challenge involves perceiving change and difficulty as opportunities for learning and growth rather than solely as threats. Maddi conceptualized hardiness as an operationalization of existential courage, emphasizing its role in maintaining engagement and adaptive functioning under conditions of stress (Maddi, 2004). This conceptualization is especially relevant to older adulthood, in which individuals frequently confront changes that cannot be completely reversed but can nevertheless be interpreted and managed in more adaptive ways.

The related construct of mental toughness has also received substantial theoretical and empirical attention. Mental toughness refers broadly to the capacity to maintain effective functioning, confidence, emotional control, and persistence under pressure or adversity. Although much of its early development occurred in sport and performance psychology, subsequent work has demonstrated that mental toughness is associated with psychological well-being, personality, learning, occupational functioning, and adaptive performance across multiple life domains (Lin et al., 2017). Clough and Strycharczyk proposed that mental toughness can be developed through structured training and can contribute not only to performance but also to well-being and positive behavior (Clough & Strycharczyk, 2012). More recent psychometric studies have continued to support mental toughness as a measurable psychological construct related to anxiety, procrastination, self-confidence, and adaptive functioning (Bayrami et al., 2024; Hartanto et al., 2025). Although these studies have often focused on younger or performance-oriented populations, their underlying emphasis on control, confidence, persistence, and adaptive coping provides a useful framework for intervention in older adulthood.

Importantly, mental toughness and hardiness should not be understood as fixed personality traits that individuals either possess or lack. Emerging evidence supports the feasibility of structured mental training programs designed to enhance psychological toughness through targeted exercises and progressive skill acquisition (Sutoro et al., 2023). This developmental perspective is highly relevant to gerontological intervention because it allows psychological hardiness to be conceptualized as a trainable set of capacities involving emotion regulation, cognitive flexibility, purposeful engagement, interpersonal competence, and adaptive coping. In older adults, group reminiscence has already been shown to improve mental toughness and life expectancy, suggesting that hardiness-related resources can be strengthened through psychologically meaningful and age-appropriate interventions (Niknam & Beshkar, 2021).

Several therapeutic traditions offer mechanisms that can be incorporated into a comprehensive hardiness-oriented program. Cognitive-behavioral approaches, for example, emphasize the identification and restructuring of dysfunctional beliefs, behavioral activation, problem-solving, and the development of adaptive coping strategies. Such mechanisms are particularly useful for older adults who may interpret functional decline, loss, or institutional residence through rigid or catastrophizing cognitions.

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Mindfulness-based approaches similarly aim to increase nonjudgmental awareness, reduce maladaptive reactivity, and improve emotional regulation. Meta-analytic evidence demonstrates that mindfulness-based therapies can produce meaningful reductions in anxiety and depressive symptoms (Hofmann et al., 2010). Reviews focusing specifically on older adults suggest that mindfulness-based interventions may improve both physical and emotional well-being and can be feasibly adapted for later-life populations (Geiger et al., 2016). Mindfulness training has also been associated with improvements in attention and well-being in healthy ageing and may affect psychophysiological processes relevant to health (Fountain-Zaragoza & Prakash, 2017).

Empirical studies involving older populations further support the utility of mindfulness-based interventions. A mindfulness program was found to reduce anxiety, geriatric depression, and worry in older adults (Franco et al., 2017), while mindfulness-based cognitive therapy has been associated with improvements in irrational beliefs and happiness among older individuals (Valizadeh & Parandin, 2022). In Iranian older women, both mindfulness-based therapy and spirituality therapy have demonstrated beneficial effects on irrational beliefs and anxiety (Barghi Irani & Dehghan Saber, 2020). Mindfulness- and acceptance-oriented interventions may also enhance cognitive flexibility and resilience, two processes that are central to adaptive functioning under conditions of change and uncertainty (Kabiri Nasab & Abdollahzadeh, 2017). More broadly, mindfulness, self-efficacy, and self-regulation have been identified as predictors of psychological well-being, reinforcing the importance of incorporating self-regulatory skills into interventions designed to enhance psychological functioning (Fan & Cui, 2024). Mindfulness-focused mental performance coaching in other high-stress settings has likewise illustrated the value of structured psychological skills training for strengthening adaptive performance and mental functioning (Perez et al., 2025).

Acceptance-based interventions provide another relevant foundation. Acceptance and Commitment Therapy emphasizes psychological flexibility, acceptance of difficult internal experiences, values clarification, and committed action. These mechanisms may be particularly appropriate in older adulthood because many age-related challenges cannot be completely eliminated and instead require flexible adaptation to changing physical, interpersonal, and environmental circumstances. Evidence indicates that Acceptance and Commitment Therapy can improve distress tolerance and character strengths among older adults (Kheishavand et al., 2024). Comparisons between acceptance-based and well-being-oriented therapies have also demonstrated improvements in life expectancy and psychological health among older adults with depression (Golestanifar & Dashtbozorgi, 2021). These results support an intervention model that does not merely attempt to suppress distress but aims to increase an individual's ability to coexist with unavoidable difficulties while continuing to pursue meaningful activities.

Hope and meaning are further psychological resources of particular importance in later life. Snyder's hope theory conceptualizes hope as a cognitive-motivational system involving personally meaningful goals, perceived pathways for achieving those goals, and agency to pursue them (Snyder et al., 2002). Although many older adults encounter changes in long-term roles and opportunities, goal-directed thinking can remain relevant when goals are adjusted to current capacities and circumstances. Meaning in life is similarly associated with adaptive psychological functioning and can be conceptualized in terms of both the presence of meaning and the active search for meaning (Steger et al., 2006). Frankl's logotherapy emphasizes the human capacity to discover meaning even under conditions of limitation, suffering, and irreversible adversity (Frankl, 2007). These ideas are particularly pertinent to nursing-home residents, for whom reconstructing purpose and personal value may counter feelings of passivity, dependency, and existential emptiness.

Spirituality may also play an important role in meaning-making and psychological adaptation among older adults. Recent evidence indicates that psychological well-being may mediate the association between spirituality and attitudes toward death in older people, suggesting that spiritual resources can contribute to healthier psychological adaptation to existential concerns in later life (Sarpdağı et al., 2025). Spirituality-focused interventions have also shown benefits for loneliness among older adults and may facilitate connection, hope, acceptance, and inner coherence (Hadian et al., 2023). Consequently, incorporating culturally appropriate spiritual and meaning-oriented elements within a psychological hardiness package may increase its relevance for older adults, particularly in sociocultural contexts in which spiritual beliefs are an important source of coping and identity.

Physical functioning and mind-body interaction should likewise be considered in interventions for older populations. Chronic pain, reduced mobility, sleep

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disruption, and other physical limitations may intensify psychological distress and reduce participation in meaningful activities. Mind-body interventions have demonstrated clinically relevant benefits among older adults with chronic conditions, including reductions in functional limitations associated with chronic low back pain (Morone et al., 2016). Thus, light physical activity, relaxation, sleep hygiene, breathing exercises, and body awareness may provide complementary pathways through which psychological hardiness can be strengthened. These components may be especially useful in nursing homes, where interventions need to be feasible, low risk, and adaptable to varying levels of physical functioning.

Despite the growing evidence supporting mindfulness, acceptance-based therapy, reminiscence, spirituality, resilience training, and well-being interventions in older adults, several gaps remain. First, many studies have evaluated single therapeutic approaches rather than integrated, multicomponent programs explicitly designed around psychological hardiness. Second, the construct of mental toughness has been developed and validated extensively in educational, occupational, and sport contexts, but its systematic adaptation to institutionalized older adults remains comparatively limited. Third, intervention programs designed without direct input from older adults and geriatric professionals may fail to capture context-specific needs related to institutional routines, dependency, family contact, loneliness, autonomy, and meaning. Fourth, interventions imported directly from other populations may not adequately reflect culturally relevant sources of coping, spirituality, interpersonal support, and perceived dignity. Consequently, there is a need for culturally grounded programs developed through an empirical process in which qualitative data from older adults and relevant professionals inform the selection and organization of intervention components.

A sequential exploratory mixed-methods approach is particularly appropriate for addressing this gap because it enables the intervention to be derived from lived experiences and professional perspectives before its psychometric and experimental evaluation. Such an approach can integrate empirically identified needs with established theories of hardiness, cognitive-behavioral coping, mindfulness, acceptance, hope, meaning, spirituality, and social support. It also allows the resulting package to be subjected to formal content validation and subsequently tested for its effects on theoretically relevant outcomes such as life satisfaction and psychological well-being. Given the increasing need for psychologically informed long-term care, the development of a structured, valid, culturally responsive, and practically implementable training program may provide nursing homes with an intervention capable of strengthening autonomy, social connection, emotional regulation, hope, and meaning while enhancing broader indicators of well-being.

Therefore, the present study aimed to develop, validate, and evaluate the effectiveness of a psychological hardiness–based training package for improving life satisfaction and psychological well-being among older adults residing in nursing homes.

2. Methods and Materials

2.1. Study Design and Participants

This study was conducted using a sequential exploratory mixed-methods design comprising three stages: development, validation, and evaluation of effectiveness.

In the qualitative phase, which focused on protocol development, the study population consisted of older adults and specialists in geriatric mental health. Using criterion-based purposive sampling, semi-structured interviews were conducted with 17 participants, including five older adults and 12 specialists comprising psychologists, nurses, and social workers. The participants were 52% women and 48% men and ranged in age from 29 to 75 years. Sampling continued until theoretical saturation of the data was achieved.

In the quantitative phase, which evaluated the effectiveness of the intervention, a quasi-experimental pretest–posttest design with a control group was employed. The statistical population consisted of all older adults residing in nursing homes in Rasht. Based on Cohen's sample-size table for analysis of variance and covariance, with a 95% confidence level, statistical power of .80, and an effect size of .60, the minimum required sample size was estimated at 12 participants per group. Considering potential attrition, 30 eligible older adults, including 18 men and 12 women aged 65 years to over 77 years, were ultimately selected through convenience sampling. Participants were assigned to the experimental group (n = 15) and control group (n = 15) using simple random allocation after matching on demographic characteristics, including age, gender, and socioeconomic status.

The inclusion criteria were age 65 years or older, absence of severe cognitive impairment based on initial screening, stable physical health status, and absence of intensive psychiatric treatment. The exclusion criteria included incomplete questionnaire completion, unwillingness to

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continue participation, and use of sedative or hypnotic medications.

The psychological hardiness–based training package was developed through thematic analysis of the qualitative data. Interview data were entered into MAXQDA 2020 and analyzed through three stages of coding: open coding, in vivo coding, and axial coding. The extracted codes were integrated with established theoretical frameworks, including the cognitive-behavioral approach, hope therapy proposed by Snyder et al. (2002), and Frankl's logotherapy (Frankl, 2007). Major themes, such as stress management, hope and sense of worth, spirituality, and communication skills, were subsequently identified.

The content validity of the developed protocol was evaluated by a panel of 10 experts using the Content Validity Ratio (CVR) and Content Validity Index (CVI). Reliability was also assessed using Cohen's kappa coefficient of agreement.

It should be noted that this study was approved by the Ethics Committee of the University of Guilan under ethics code IR.GUILAN.REC.1404.151. Following ethical approval and the acquisition of written informed consent from all participants, with assurance of information confidentiality, participants in the quantitative phase were assigned to the experimental and control groups. First, both groups completed the pretest assessments using the SWLS and RSPWB. The experimental group then received the 12-session psychological hardiness intervention, whereas the control group remained on a waiting list and received no intervention. Upon completion of the intervention sessions, both groups completed the posttest assessments.

2.2. Data Collection Tools

The quantitative data were collected using the following instruments:

Satisfaction With Life Scale (SWLS): This five-item scale was developed by Diener et al. (1985). In Iran, Bayani et al. (2007) reported a Cronbach's alpha coefficient of .83 and a test–retest reliability coefficient of .69. They also confirmed its construct validity through a positive correlation with the Oxford Happiness Questionnaire (r = .71) and a negative correlation with the Beck Depression Inventory (r = −.59).

Ryff's Scales of Psychological Well-Being–Short Form (RSPWB): The 18-item version of this scale developed by Ryff (1989) comprises six subscales: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. In the study by Bayani et al. (2008), the construct validity of the scale was supported through correlations with the Oxford Happiness Questionnaire (r = .47), the Satisfaction With Life Scale (r = .58), and the Rosenberg Self-Esteem Scale (r = .46). Test–retest reliability was reported as .82 for the total Ryff Psychological Well-Being Scale and above .70 for all subscales.

2.3. Data Analysis

Qualitative data were analyzed using thematic analysis in MAXQDA 2020. In the quantitative phase, descriptive statistics, including mean, standard deviation, and frequency, as well as inferential statistics, including one-way analysis of covariance (ANCOVA) and multivariate analysis of covariance (MANCOVA), were used to control for pretest effects and compare the groups. All quantitative analyses were conducted using SPSS.

3. Findings and Results

Analysis of the qualitative data led to the identification of a set of key components for developing a psychological hardiness–based training package for older adults residing in nursing homes. Based on the convergence of the interview data, the initial codes were organized into axial themes and subsequently transformed into criteria and operational indicators for designing the training package. This process resulted in the extraction of 10 principal components covering the individual, emotional, interpersonal, spiritual, and functional dimensions of psychological hardiness.

The themes included personal control and autonomy, social relationships, coping with stress and anxiety, hope and sense of worth, flexibility and acceptance of change, effective communication, spirituality and meaning-making, physical and psychological health, family and community participation, and continuous assessment and feedback. These themes were used as the conceptual framework of the training package, and each was operationalized in terms of educational objectives, instructional methods, practical activities, and evaluation indicators.

The findings further showed that some themes, including personal autonomy, stress management, social relationships, and meaning-making, received the greatest frequency and emphasis within the qualitative data and were therefore established as the central dimensions of the final package. In contrast, some concepts, such as the need for affection, were not retained as independent components and were

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incorporated into broader components, particularly social relationships and family support. Overall, the qualitative findings demonstrated that the final package was not developed through an arbitrary selection of components but was systematically constructed on the basis of empirically derived themes and their structured conceptualization.

Table 1

Components Extracted From the Qualitative Analysis and Their Transformation Into Training Package Elements

Main Dimension/Component	Specific Indicators	Educational Objective	Instructional Methods	Practical Activities	Assessment Instrument/Method
Personal control and autonomy	Management of personal affairs, decision-making, self-care, reduced dependency	Increase perceived competence and autonomy	Life-skills training, role-playing	Practicing clothing selection, designing an individualized daily schedule	Personal autonomy questionnaire, nurse observation
Social relationships	Positive interaction, reduced loneliness, group cooperation, increased social support	Improve relationship quality	Group therapy, group games, group discussion	Storytelling, teamwork, practicing friendship-building	UCLA Loneliness Scale, nurse report
Coping with stress and anxiety	Emotion management, reduced worry, use of adaptive coping strategies	Reduce psychological distress	CBT, progressive muscle relaxation, mindfulness	Breathing exercises, STOP technique, thought diary	Beck Anxiety Inventory, interview
Hope and sense of worth	Goal orientation, feeling useful, life satisfaction	Increase motivation and hope	Art therapy, reminiscence, volunteer activities	Gardening, painting, handicraft activities	Snyder Hope Scale, qualitative feedback
Flexibility and acceptance of change	Cognitive restructuring, acceptance of limitations, reduced resistance	Increase adaptation	Problem-solving training, group discussion, role-playing	Thought restructuring exercises, recording three daily blessings	Connor–Davidson Resilience Scale
Effective communication	Expressing needs, reducing conflict, active listening	Improve communication	Role-playing, communication-skills workshop	Practicing polite requests and active listening	Social interaction checklist
Spirituality and meaning-making	Inner peace, faith, finding meaning	Increase spiritual satisfaction	Meditation, prayer, spiritual narratives	Simple meditation, meaning journal	Meaning in Life Questionnaire (MLQ)
Physical and psychological health	Sleep hygiene, nutrition, physical activity	Promote overall health	Health education, light exercise	Group walking, stretching exercises	Nurse health report, sleep-quality questionnaire
Family and community participation	Family contact, social roles	Strengthen interpersonal bonds	Structured joint and communication-oriented sessions	Contacting family members and significant others	Family interview
Continuous assessment and feedback	Assessment of psychological changes	Monitor progress	Questionnaire, interview, observation	Administration of pretest and posttest	

The qualitative findings also provided the basis for developing the final structure of the training package. Accordingly, the program was organized into 12 sessions, with its content structured across three major phases: the foundation phase (Sessions 1–3), the psychological skills phase (Sessions 4–7), and the integration and meaning phase (Sessions 8–12). This sequence reflected a gradual progression from developing readiness and group cohesion toward psychological skills training and, ultimately, consolidation of meaning, connectedness, and active coping.

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Table 2

Final Structure of the Psychological Hardiness–Based Training Package

Phase	Session	Primary Objective	Educational Topics and Key Activities
Foundation	1	Orientation and motivation enhancement	Introduction of group members, sharing positive memories, and fostering interpersonal closeness
Foundation	2	Personal autonomy and control	Self-care training and role-playing for making choices and designing a daily schedule
Foundation	3	Social relationships	Reducing social isolation, paired storytelling, and cooperative group games
Psychological skills	4	Stress and emotion management	Training in the STOP technique, deep breathing, and progressive muscle relaxation within a CBT framework
Psychological skills	5	Hope and sense of worth	Art therapy through painting and handicrafts and identification of personal values
Psychological skills	6	Cognitive flexibility	Problem-solving training, recording three daily blessings, and cognitive restructuring
Psychological skills	7	Effective communication	Active-listening training and practice in making polite requests and expressing needs
Integration and meaning	8	Spirituality and meaning-making	Meditation, sharing spiritual experiences, and discussion of the meaning of life
Integration and meaning	9	Physical and psychological health	Sleep-hygiene education, group walking, and light stretching exercises
Integration and meaning	10	Family and social bonds	Establishing contact with family members and strengthening social support
Integration and meaning	11	Problem-solving and active coping	Practical application of the four-step problem-solving process to personal problems experienced by older adults
Integration and meaning	12	Consolidation and feedback	Reviewing achievements, awarding certificates, and administering the posttest

In the subsequent stage, the validity and reliability of the training package were evaluated. The results of the content-validity assessment demonstrated that all sessions of the training package fell within acceptable ranges for both CVR and CVI. CVR values for the 12 sessions ranged from .75 to 1.00, whereas CVI values ranged from .80 to 1.00. Based on the critical value proposed by Lawshe (1975) for a panel of 10 experts (.62), all sessions were confirmed as necessary in terms of content. Furthermore, all CVI values were .80 or higher, indicating that the package was also rated favorably in terms of relevance, clarity, and simplicity. Consequently, none of the sessions were eliminated, and after minor revisions to wording and implementation procedures, the final package was approved for the effectiveness-evaluation phase.

Table 3

Content Validity Indices of the Psychological Hardiness–Based Training Package Sessions

Session	Session Content	CVR	CVR Status	CVI	CVI Status	Final Decision
1	Orientation and motivation enhancement	.78	Accepted	.88	Accepted	Acceptable
2	Personal autonomy and control	.75	Accepted	.88	Accepted	Acceptable
3	Social relationships and reduction of loneliness	.83	Accepted	.93	Accepted	Acceptable
4	Stress and emotion management	.88	Accepted	.95	Accepted	Acceptable
5	Hope and sense of worth	.75	Accepted	.83	Accepted	Acceptable
6	Flexibility and acceptance of change	.85	Accepted	.90	Accepted	Acceptable
7	Communication skills	.80	Accepted	.93	Accepted	Acceptable
8	Spirituality and meaning-making	1.00	Accepted	1.00	Accepted	Acceptable
9	Physical and psychological health	.75	Accepted	.80	Accepted	Acceptable
10	Family and external social connections	.83	Accepted	.85	Accepted	Acceptable
11	Problem-solving and active coping	.80	Accepted	.90	Accepted	Acceptable
12	Consolidation and closing celebration	.93	Accepted	1.00	Accepted	Acceptable

Overall, the qualitative findings demonstrated that the psychological hardiness–based training package could be developed around 10 principal components and structured into 12 sessions. The content-validation results further demonstrated that all sessions were approved by the expert panel in terms of necessity, relevance, clarity, and simplicity.

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Accordingly, the final training package possessed sufficient content adequacy to proceed to the effectiveness-evaluation stage, indicating excellent validity and credibility of the developed package.

In the final phase of the study, the effectiveness of the developed training package was evaluated. Descriptive statistics for life satisfaction and the six subscales of psychological well-being among older adults in the experimental and control groups at the pretest and posttest stages are presented in Table 4.

Table 4

Descriptive Statistics for the Study Variables

Variable	Group	Pretest Mean	Pretest SD	Shapiro–Wilk p	Posttest Mean	Posttest SD	Shapiro–Wilk p
Life satisfaction	Control	10.60	0.986	.896	10.73	1.033	.817
	Experimental	11.07	0.799	.885	15.27	0.704	.798
Self-acceptance	Control	5.73	0.704	.798	5.87	0.640	.817
	Experimental	5.13	0.743	.790	7.20	0.676	.801
Environmental mastery	Control	5.13	0.743	.817	5.20	0.676	.823
	Experimental	5.00	0.756	.801	5.40	0.507	.630
Positive relations with others	Control	5.13	0.743	.817	5.20	0.676	.643
	Experimental	5.47	0.516	.801	7.47	0.516	.643
Purpose in life	Control	5.00	0.756	.823	5.73	0.704	.643
	Experimental	4.53	0.516	.798	8.67	0.488	.603
Personal growth	Control	6.33	0.488	.603	6.47	0.516	.603
	Experimental	6.67	0.488	.643	6.60	0.507	.630
Autonomy	Control	5.00	0.756	.823	5.53	0.516	.823
	Experimental	5.00	0.756	.643	8.40	0.507	.630
Total psychological well-being	Control	32.20	1.656	.913	33.73	1.280	.896
	Experimental	31.60	0.986	.862	43.67	1.234	.925

As shown in Table 4, the mean life satisfaction score in the experimental group increased from 11.07 at pretest to 15.27 at posttest, whereas only a negligible change was observed in the control group, from 10.60 to 10.73. Similarly, the total psychological well-being score in the experimental group increased substantially from 31.60 at pretest to 43.67 at posttest, whereas only a modest increase from 32.20 to 33.73 was observed in the control group. At the component level, the greatest increases were observed in purpose in life and autonomy, followed by self-acceptance and positive relations with others, whereas environmental mastery and personal growth exhibited only minor changes. It should also be noted that all Shapiro–Wilk significance values were greater than .05, indicating that the data distributions did not significantly deviate from normality and that parametric statistical tests could therefore be applied. Accordingly, one-way ANCOVA was used to evaluate the effectiveness of the training package on life satisfaction and total psychological well-being, whereas MANCOVA was employed to assess its effectiveness across the psychological well-being subscales.

Before conducting the one-way ANCOVA and MANCOVA, the relevant statistical assumptions were examined. Levene's test for the primary variables and their components indicated homogeneity of variances ($p > .05$), and the group × pretest interaction test confirmed the homogeneity of regression slopes ($p > .05$). At the multivariate level, Box's M test yielded a significance level greater than .001, indicating that the assumption of homogeneity of variance–covariance matrices was satisfied to an acceptable degree. Accordingly, the assumptions required for applying ANCOVA and MANCOVA were met, and the results of these analyses were considered statistically valid.

Table 5

Results of the Effectiveness of the Training Package on Life Satisfaction and Psychological Well-Being

Variable	Sum of Squares	df	F	p	Partial η^2
Life satisfaction	405.147	1	222.185	< .001	.873
Self-acceptance	9.486	1	19.585	< .001	.471

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Environmental mastery	0.015	1	0.084	.774	.004
Positive relations with others	2.471	1	15.881	< .001	.411
Purpose in life	50.045	1	138.513	< .001	.863
Personal growth	0.098	1	2.272	.062	.019
Autonomy	48.965	1	195.824	< .001	.899
Total psychological well-being	240.726	1	916.482	< .001	.947

As indicated by the results presented in Tables 4 and 5, the developed psychological hardiness–based training package resulted in significant increases in life satisfaction and overall psychological well-being among older adults residing in nursing homes. At the level of psychological well-being components, the intervention produced substantial effects on self-acceptance, positive relations with others, purpose in life, and autonomy; however, changes in environmental mastery and personal growth did not reach statistical significance.

4. Discussion and Conclusion

The present study aimed to develop, validate, and evaluate a psychological hardiness–based training package for older adults residing in nursing homes and to examine its effectiveness in improving life satisfaction and psychological well-being. The qualitative phase resulted in the identification of 10 major components, including personal control and autonomy, social relationships, coping with stress and anxiety, hope and sense of worth, flexibility and acceptance of change, effective communication, spirituality and meaning-making, physical and psychological health, family and community participation, and continuous assessment and feedback. These components were organized into a 12-session intervention structured across the three phases of foundation, psychological skills, and integration and meaning. The content-validity findings demonstrated acceptable to excellent CVR and CVI values across all sessions, indicating that experts considered the content necessary, relevant, clear, and sufficiently simple for implementation with older adults. In the quantitative phase, the intervention produced significant improvements in life satisfaction and total psychological well-being. At the level of psychological well-being dimensions, significant effects were found for self-acceptance, positive relations with others, purpose in life, and autonomy, whereas changes in environmental mastery and personal growth were not statistically significant.

The significant improvement in life satisfaction constitutes one of the principal findings of the study. Participants receiving the psychological hardiness training showed a substantial increase in life satisfaction compared with those in the control group. This finding can be explained by the multidimensional structure of the intervention, which targeted several determinants of positive life evaluation simultaneously, including perceived control, social connection, hope, meaningful activity, emotional regulation, and spirituality. Life satisfaction reflects an individual's cognitive appraisal of the overall quality and desirability of life circumstances, and therefore it may be especially responsive to interventions that modify the manner in which people interpret their experiences and perceive their remaining capacities. The finding is consistent with evidence suggesting that psychological interventions can improve positive psychological outcomes in later life. For example, acceptance- and well-being-oriented interventions have been shown to improve psychological health and life expectancy in older adults experiencing depression (Golestanifar & Dashtbozorgi, 2021). Similarly, reminiscence-based group intervention has been associated with improvements in mental toughness and life expectancy in older adults, demonstrating that structured reflection on personal experiences can strengthen positive psychological evaluations of life (Niknam & Beshkar, 2021).

The improvement in life satisfaction may also be interpreted through changes in hope, cognitive flexibility, and emotional self-regulation. The intervention encouraged participants to identify personally meaningful goals, recognize existing capacities, reinterpret difficult experiences, and engage in manageable activities. Snyder's conceptualization of hope emphasizes both pathways thinking and personal agency, suggesting that individuals experience greater hope when they perceive multiple ways of reaching personally meaningful goals and believe themselves capable of initiating movement toward those goals (Snyder et al., 2002). In nursing-home residents, even relatively modest and immediate goals may restore a sense of agency and intentionality. This process can influence life satisfaction because evaluations of one's life become less exclusively organized around losses and limitations and more strongly connected to current possibilities, remaining strengths, and achievable experiences.

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The result is also consistent with research on mindfulness- and acceptance-based approaches. Mindfulness-based cognitive therapy has been found to improve happiness and reduce irrational beliefs among older adults (Valizadeh & Parandin, 2022), while mindfulness-based interventions have demonstrated beneficial effects on emotional and physical well-being in later life (Geiger et al., 2016). Mindfulness training has also reduced anxiety, depression, and worry among older individuals (Franco et al., 2017). These findings are relevant because lower emotional distress and greater present-moment awareness may alter the cognitive standards through which individuals evaluate their lives. The present intervention incorporated stress-management, breathing, relaxation, mindfulness, and cognitive restructuring elements, which may have reduced maladaptive rumination about losses and facilitated attention to positive and meaningful aspects of current life. This explanation is also supported by the broader evidence that mindfulness-based therapies are effective in reducing anxiety and depressive symptoms across populations (Hofmann et al., 2010).

The significant increase in total psychological well-being further indicates that the intervention affected broader dimensions of positive psychological functioning rather than merely producing a change in momentary mood. Psychological well-being involves self-acceptance, autonomy, environmental mastery, positive interpersonal relationships, personal growth, and purpose in life, and thus reflects a complex pattern of adaptive functioning (Keyes et al., 2002). The very large observed effect on total psychological well-being suggests that the combined intervention components may have had a cumulative influence. By integrating psychological skills, social participation, meaning-focused exercises, communication training, and self-care practices, the package addressed several dimensions of well-being concurrently. This interpretation is consistent with evidence that psychological well-being among older adults is related to coping self-efficacy and social support, both of which may buffer the effects of negative affect and cognitive difficulties (Mohammadi et al., 2022).

The significant improvement in self-acceptance is particularly important in the context of institutional ageing. Older adults living in nursing homes may encounter declining physical capacity, increased dependence, changes in appearance, loss of previous roles, and reduced control over daily routines. These experiences may challenge self-concept and intensify negative self-appraisal. The intervention included cognitive restructuring, acceptance of change, identification of personal strengths, reminiscence, and recognition of individual value, all of which may have helped participants develop a more balanced and compassionate view of themselves. This finding aligns with evidence indicating that strengthening resilience can improve self-acceptance among institutionalized older adults (Sudarsiwi et al., 2023). Acceptance and Commitment Therapy has likewise been reported to enhance distress tolerance and character strengths among older adults, suggesting that acceptance-oriented interventions can improve adaptive self-relating when external limitations cannot easily be changed (Kheishavand et al., 2024).

The significant effect on positive relations with others may be attributed to the explicitly interpersonal structure of the training package. Group storytelling, cooperative activities, active-listening exercises, polite request skills, family contact, and opportunities for sharing personal experiences provided repeated contexts for positive interaction. Social connection is a fundamental psychological resource in older adulthood and may be particularly important in nursing homes, where loneliness and reduced family contact are common concerns. Previous research has shown that mindfulness-based cognitive therapy and spirituality therapy can reduce loneliness among older adults (Hadian et al., 2023). Social support has also been identified as an important contributor to psychological well-being in ageing populations (Mohammadi et al., 2022). Accordingly, the present findings suggest that the intervention may have improved relational well-being not only through direct communication-skills training but also through increased interpersonal trust, shared experience, and perceived social inclusion.

Purpose in life showed one of the strongest improvements following the intervention. This result is theoretically coherent with the inclusion of hope training, meaning-making, spiritual reflection, reminiscence, and value-oriented activities. Purpose in life often becomes vulnerable in institutional settings because retirement, bereavement, chronic illness, reduced caregiving responsibilities, and loss of former social roles may diminish the sense of being needed or moving toward meaningful goals. Frankl's meaning-centered perspective proposes that meaning can remain accessible even under conditions of suffering, limitation, and restricted external control (Frankl, 2007). Similarly, the distinction between the presence of meaning and the search for meaning provides a useful framework for understanding how individuals can continue constructing

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meaningful life narratives in later adulthood (Steger et al., 2006). The present training package explicitly encouraged participants to reflect on personal values, spiritual experiences, relationships, memories, and achievable future goals, which may have strengthened their sense that life continued to possess direction and significance.

The role of spirituality may also have contributed to the observed improvement in purpose and overall well-being. Spirituality can provide a framework for interpreting ageing, mortality, loss, and continuity of identity, particularly in cultures in which religious and spiritual beliefs represent important sources of coping. Recent research has shown that psychological well-being plays a mediating role in the relationship between spirituality and attitudes toward death in older adults (Sarpdağı et al., 2025). Spirituality-based interventions have also demonstrated favorable effects on anxiety and irrational beliefs in older women (Barghi Irani & Dehghan Saber, 2020). Thus, spirituality and meaning-making in the present package may have reinforced existential coherence while helping participants interpret difficult experiences within a broader framework of meaning.

Autonomy also demonstrated a marked improvement. This is notable because nursing-home residence can create conditions in which routine, institutional regulations, physical limitations, and dependence on caregivers reduce opportunities for independent decision-making. The training package attempted to counter this process through exercises involving choice, self-care, personal planning, decision-making, and communication of needs. These activities may have increased perceived rather than absolute autonomy, which is psychologically important even when environmental constraints remain. Hardiness theory emphasizes control as a central adaptive attitude, referring not to total control over external circumstances but to the belief that one's responses and choices can meaningfully influence experience (Maddi, 2004). Mental toughness frameworks similarly emphasize confidence, emotional control, and persistence as trainable psychological capacities (Clough & Strycharczyk, 2012). Systematic evidence further indicates that mental toughness is positively associated with psychological well-being and adaptive functioning across life domains (Lin et al., 2017). The improvement in autonomy may therefore reflect the strengthening of perceived personal influence and decision-making efficacy rather than a change in the institutional environment itself.

The present findings are also consistent with evidence that mental toughness can be strengthened through systematic training. Structured mental-training models have been developed specifically to enhance mental toughness through repeated psychological skill practice (Sutoro et al., 2023). Studies in other populations have linked mental toughness to reduced anxiety, greater adaptive functioning, and stronger self-confidence (Bayrami et al., 2024; Hartanto et al., 2025). Although these studies were not conducted primarily among institutionalized older adults, they support the assumption underlying the present study that psychological hardiness and related mental toughness capacities are modifiable rather than entirely fixed dispositions. The current results extend this perspective by suggesting that these principles may be adapted for geriatric settings using developmentally and culturally appropriate content.

In contrast, the intervention did not produce a statistically significant improvement in environmental mastery. This finding may be explained by the distinction between internal psychological adaptation and actual control over environmental conditions. Environmental mastery includes the ability to manage surrounding circumstances, effectively use environmental opportunities, and create conditions appropriate to personal needs. Nursing-home residents often have limited influence over institutional schedules, physical space, staffing patterns, meals, visiting arrangements, and other aspects of daily life. Although the intervention improved perceived autonomy and personal coping, it did not alter the structural conditions of the residential environment. Therefore, participants may have become more capable of managing their responses while still perceiving relatively little change in their actual environmental control. Research emphasizing age-friendly environments and service accessibility suggests that psychological adaptation is influenced by the characteristics of the physical and social environment and cannot always be modified solely through individual-level interventions (Jiang et al., 2025). This may account for the minimal change observed in environmental mastery.

Personal growth also did not change significantly. One possible explanation is that personal growth is a comparatively developmental and future-oriented dimension of psychological well-being and may require a longer intervention period to change. It reflects openness to new experiences, continued development, realization of personal potential, and perception of oneself as growing over time. A 6-week intervention may be sufficient to influence emotional regulation, self-acceptance, interpersonal interaction, hope, and perceived autonomy but insufficient

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to produce measurable transformation in a broader sense of long-term development. Moreover, the institutional context may restrict opportunities for new roles, learning experiences, and sustained engagement in novel activities. Cognitive flexibility training may nevertheless represent an important foundation for later changes in personal growth. Previous findings indicate that acceptance- and mindfulness-based training can enhance cognitive flexibility and resilience among older adults (Kabiri Nasab & Abdollahzadeh, 2017), suggesting that longer exposure or follow-up assessment might reveal delayed changes not captured by the immediate posttest.

The overall findings also support the usefulness of combining multiple intervention traditions rather than relying on a single therapeutic approach. The present package incorporated elements of cognitive-behavioral training, mindfulness, relaxation, hope enhancement, meaning-making, spirituality, interpersonal-skills training, and physical self-care. Previous evidence has demonstrated beneficial effects of mindfulness on well-being, attention, emotional functioning, and even health-related processes in older populations (Fountain-Zaragoza & Prakash, 2017), while mind-body interventions can improve functioning in older adults with chronic physical conditions (Morone et al., 2016). More recent research also emphasizes the contributions of mindfulness, self-efficacy, and self-regulation to psychological well-being (Fan & Cui, 2024). These converging mechanisms may help explain why the multicomponent program produced strong effects on total psychological well-being despite differential effects across specific dimensions.

Another strength of the findings lies in the culturally grounded development process. Rather than selecting intervention components solely from existing manuals, the study first explored the experiences and perspectives of older adults and geriatric professionals and then integrated the resulting themes with established theoretical frameworks. This procedure likely increased the ecological and cultural relevance of the package. This is particularly important in the Iranian context, where rapid population ageing is creating increasing pressure on health and social-care systems (Doshmangir et al., 2023). Programs for institutionalized older adults should therefore address not only symptoms but also culturally meaningful dimensions of family contact, spirituality, dignity, social role, and perceived usefulness.

Taken together, the findings indicate that the developed psychological hardiness training package was both content-valid and effective in improving central aspects of psychological functioning among nursing-home residents. The pattern of results suggests that relatively dynamic and psychologically modifiable dimensions—particularly life satisfaction, self-acceptance, interpersonal relationships, purpose in life, and autonomy—responded strongly to intervention, whereas dimensions more dependent on structural context or prolonged developmental change, such as environmental mastery and personal growth, were less responsive over the short intervention period. These findings support the conceptualization of psychological hardiness as a multidimensional, trainable resource that may strengthen adaptation to the challenges of institutional ageing.

The present study had several limitations that should be considered when interpreting the findings. First, the quantitative sample was relatively small and was recruited from nursing homes in a single city, which limits the generalizability of the findings to older adults living in other geographical, cultural, or residential contexts. Second, convenience sampling was used prior to random allocation, which may have introduced selection bias. Third, the study relied primarily on self-report measures, and participants' responses may have been influenced by social desirability, response tendencies, literacy level, or temporary emotional states. Fourth, the study included only pretest and immediate posttest assessments, and therefore the durability of the intervention effects could not be determined. Fifth, although demographic matching was performed, potentially influential factors such as duration of institutionalization, chronic disease burden, cognitive functioning, frequency of family contact, medication use, and previous psychological treatment were not examined systematically as moderators. Finally, because the intervention was multicomponent, it was not possible to determine which individual components contributed most strongly to the observed improvements.

Future studies should evaluate the intervention in larger and more diverse samples drawn from multiple nursing homes and different geographical regions. Randomized controlled trials with longer follow-up intervals are recommended to determine whether changes in life satisfaction and psychological well-being are maintained over time. Researchers should also examine potential moderators and mediators of treatment response, including baseline resilience, cognitive status, physical functioning, perceived social support, spirituality, length of residence in the nursing home, and frequency of family contact. Comparative studies could evaluate the psychological hardiness package against established interventions such as

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mindfulness-based therapy, reminiscence therapy, Acceptance and Commitment Therapy, or well-being therapy. Component analyses may also help determine the relative contribution of hope training, cognitive restructuring, communication skills, spirituality, and physical activity. In addition, future research could incorporate qualitative post-intervention interviews and behavioral or caregiver-rated outcomes to complement self-report measures and provide a more comprehensive assessment of psychological and functional change.

The developed training package can be incorporated into routine psychosocial services provided by nursing homes as a structured group-based program for promoting psychological adjustment and quality of life. Psychologists, nurses, social workers, and trained care staff can use its exercises to strengthen residents' perceived autonomy, emotional regulation, interpersonal connection, hope, and sense of meaning. Nursing-home administrators should also consider creating more opportunities for residents to make everyday choices, participate in group activities, communicate with family members, and engage in personally meaningful roles. Because environmental mastery and personal growth showed limited change, psychological interventions should be complemented by organizational modifications that increase residents' participation in decision-making and provide sustained opportunities for learning, creativity, volunteering, and social contribution. The program may be particularly useful when delivered flexibly and adapted to participants' cognitive, sensory, physical, and cultural characteristics.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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E-ISSN: 3041-8828