



Empowerment of Older Adults Through a Healthpreneurship-Based Mental Health Box in Optimizing Psychological Well-Being Among the Elderly

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ARTICLE INFO

Keywords: Healthpreneurship, Older Adults, Mental Health Box, Psychological Well-Being, Older Adult Empowerment

Received: 28, July

Revised: 27, August

Accepted: 30, September

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ABSTRACT

Declines in psychophysical functioning and the loss of social roles during old age may negatively affect psychological well-being. Conventional mental health interventions for older adults are often passive and have not fully integrated aspects of productive empowerment. This study aimed to observe changes in and analyze differences in the level of psychological well-being among older adults before and after receiving a healthpreneurship-based Mental Health Box intervention. This study employed a pre-experimental design using a One-Group Pretest-Posttest Design involving 40 older adults selected through total sampling. Psychological well-being was measured using an interval-scale psychological well-being instrument. Data were analyzed using the Shapiro-Wilk normality test and a Paired Samples t-test. The results of the paired-samples test indicated a significant increase in psychological well-being scores between the pre-intervention measurement ($M = 62,40$; $SD = 6,80$) and the post-intervention measurement ($M = 76,90$; $SD = 7,10$), with a mean difference of 14.50 points, $t(39) = 15,53$ and. The effect size indicated a very strong positive effect ($d_z = 4,94$; 95% CI [13,61; 15,49]). Integrating mental health education with micro-health entrepreneurship (*healthpreneurship*) activities through the interactive Mental Health Box has the potential to serve as a supportive non-pharmacological intervention model in community-based elderly health posts (Posyandu Lansia) and nursing homes. Nevertheless, the findings should be interpreted with consideration of the limitations of the pre-experimental design, particularly the absence of a control group.

INTRODUCTION

Background

As individuals enter old age, they often face a range of complex challenges, including declines in physical and sensory capacities, retirement, loss of social roles (*role loss*), and social isolation. These conditions may directly affect psychological well-being (PWB), as reflected in feelings of uselessness, reduced self-efficacy, and a diminished sense of direction or purpose in daily life.

To date, various healthcare programs for older adults in community-based elderly health posts (Posyandu Lansia) and residential care institutions have largely been dominated by curative and passive approaches (*passive care*). Older adults are generally positioned as passive recipients of assistance who participate mainly in routine physical examinations or one-way psychoeducation, with limited opportunities for creative activities oriented toward value creation. However, the concepts of *Active Aging* and *Productive Aging* emphasize that healthy aging requires active engagement in meaningful and productive activities. Therefore, an integrated intervention modality is needed to combine cognitive-affective stimulation with small-scale productive health entrepreneurship activities (healthpreneurship).

Novelty and Proposed Solution

The primary novelty of this study lies in shifting the paradigm of mental health interventions for older adults from a curative and passive approach toward an active empowerment approach oriented toward value creation (*active empowerment and value creation*). The proposed solution is a healthpreneurship-based *Mental Health Box*, which integrates cognitive relaxation exercises, sensory-motor stimulation, and small-scale health entrepreneurship guidance into a standardized package. An explicit comparison between conventional interventions and the healthpreneurship-based *Mental Health Box* is presented in Table 1.

Table 1. Explicit Comparison of Conventional Mental Health Interventions for Older Adults and the Healthpreneurship-Based *Mental Health Box*

Comparison Dimension	Conventional Intervention (Previous Approaches)	Healthpreneurship-Based Mental Health Box (This Study)
Approach Model	Passive & Curative-Clinical: Focuses on routine physical examinations, passive counseling, one-way psychoeducation, or medication in elderly health posts or nursing homes.	Active & Promotive-Empowerment: Combines cognitive relaxation (<i>mindfulness</i>) with productive activities oriented toward small-scale health entrepreneurship (<i>healthpreneurship</i>).
Role of Older Adults	Passive Care Recipients: Older adults are positioned as objects who receive	Empowered Agents & Producers (<i>Active Contributors</i>): Older adults are positioned as

	assistance without opportunities for creative engagement.	active subjects who create tangible products with functional and aesthetic value.
Integration of Intervention Modalities	Unidimensional / Separate: Focuses on a single aspect, such as music therapy, art therapy without tangible outcomes, or elderly exercise.	Multidimensional & Integrated (3-in-1 Box Kit): Integrates psychotherapy (<i>journaling</i> and affirmations), sensory-motor stimulation (herbal tea/TOGA), and micro-entrepreneurship activities.
Intervention Media	Scattered & Conventional: Uses ordinary printed worksheets, face-to-face lectures, or teaching aids that are not sufficiently standardized.	All-in-One Interactive Box Kit: An integrated physical media packages specifically designed to accommodate age-related physical and cognitive limitations, including <i>large-print</i> materials.
Main Psychosocial Impact	Temporary Relaxation: May provide temporary relief from anxiety but has limited capacity to build long-term self-efficacy and autonomy among older adults.	Restoration of Role & Self-Efficacy: Supports the development of <i>entrepreneurial self-efficacy</i> , strengthens the sense of usefulness, and provides concrete daily goals.
Product Output	None / Decorative Only: Outputs from art therapy or handicraft activities generally have limited continuation in terms of functional or economic value.	Functional Health Products: Produces organic herbal tea blends, aromatherapy sachets, or TOGA-based products that can be displayed or sold at community bazaars.

The novelty of this intervention rests on three main pillars:

- **Integration of Cognitive Psychoeducation and Micro-Entrepreneurship:** Integrating emotional relaxation through *mindfulness journaling* and affirmation cards directly into productive activities involving the creation of health-related products.
- **Standardization of an Integrated Intervention Medium:** Using a portable, standardized, and older-adult-friendly physical *Mental Health Box*, featuring *large-print* materials and tactile instructions.
- **Reconstruction of Purpose in Life through Social Validation:** The sale or exhibition of products created by older adults at the community level provides social validation that may strengthen their sense of purpose and meaning in life.

Research Questions and Objectives

The research question addressed in this study is: Is there a significant difference in the level of *psychological well-being* among older adults before and after receiving the *healthpreneurship-based Mental Health Box* intervention?

The objective of this study is to observe changes in and analyze differences in the level of *psychological well-being* among older adults before and after the *healthpreneurship-based Mental Health Box* empowerment intervention.

Research Hypotheses

Based on a measurable methodological formulation designed to account for the limitations of a study without a control group, the hypotheses are formulated as follows:

H₀: There is no significant difference in the mean *psychological well-being* scores of older adults before and after receiving the *healthpreneurship-based Mental Health Box* intervention.

H₁: There is a significant difference in the *psychological well-being* scores of older adults before and after receiving the *healthpreneurship-based Mental Health Box* intervention.

LITERATURE REVIEW

Theoretical Framework of Psychological Well-Being in Older Adults

Psychological well-being (PWB) is a positive psychology construct that assesses the fulfillment of personal potential, meaning in life, and optimal psychological functioning (*eudaimonic well-being*). Based on Carol Ryff's multidimensional model, PWB is assessed across six main dimensions:

- **Autonomy:** Independence in thinking and the ability to resist social pressures.
- **Environmental Mastery:** The ability to effectively manage and utilize environmental conditions.
- **Personal Growth:** A sense of continued development and openness to new experiences.
- **Positive Relations with Others:** Warm, empathetic, and mutually trusting interpersonal relationships.
- **Purpose in Life:** Having direction, daily goals, and a belief that life has meaning.
- **Self-Acceptance:** A positive attitude toward oneself and acceptance of one's past experiences.

Active Aging and Productive Aging Theories

The *Successful Aging* theory proposed by Rowe and Kahn emphasizes that successful aging is not determined solely by the absence of physical disease but also by the maintenance of high levels of cognitive and physical functioning and active engagement in life. In line with this perspective, the concept of *Productive Aging* redefines older adults as resources capable of generating social, cultural, and microeconomic value. Structured productive activities can provide a sense of mastery and strengthen entrepreneurial self-efficacy among older adults.

The Concept of Healthpreneurship through Interactive Media (Mental Health Box)

Healthpreneurship among older adults combines health education, crafting activities, and micro-entrepreneurship principles as instruments for psychosocial empowerment. The *Mental Health Box* facilitates three simultaneous pathways of stimulation:

- **Sensory and Cognitive Stimulation:** Preparing herbal tea, producing aromatherapy products, and completing *mindfulness journaling* activities stimulate motor coordination and executive functioning.
- **Psychological and Affirmative Stimulation:** The use of daily positive affirmation cards supports optimistic cognitive restructuring among older adults.
- **Social and Microeconomic Stimulation:** Packaging, labeling, and exhibiting products at Posyandu Lansia provide opportunities for social validation and expanded social interaction.

Synthesis of Recent Empirical Studies (2020–2026) and Research Gap

A synthesis of recent empirical studies that provides the foundation for this study is presented in Table 2.

Table 2. Synthesis Matrix of Recent Empirical Studies

Researchers & Year	Method & Sample	Intervention Focus	Main Findings & Relevance
<i>Frontiers in Public Health</i> (2024)	Empirical action-oriented study $N = 1.250$	Arts and crafts (<i>crafting</i>)	<i>Crafting</i> was associated with improvements in eudaimonic well-being and self-efficacy among older adults.
Prieto-Moreno et al. (2023)	Clinical trial $N = 86$ older adults in residential care)	Group-based occupational therapy involving productive projects	Significantly improved emotional well-being and self-efficacy among older adults ($p < 0,001$).
Keyte et al. (2025)	Mixed quantitative-qualitative study ($N = 112$)	Physical crafting (<i>artisan crafting</i>)	Reduced daily depressive symptoms and strengthened <i>environmental mastery</i> and <i>purpose in life</i> .
Setyowati & Suryani (2020)	Quasi-experimental study ($N = 35$)	Micro-health entrepreneurship empowerment	Effective in reducing loneliness and

			increasing productivity among older adults.
Widarjo & Rahmawati (2021)	Pre-posttest design (N = 48)	Interactive stimulation kits and educational media for older adults	Improved cognitive functioning and mental health among older adults.
Lumoscience (2026)	Multidimensional <i>Productive Aging</i> study	Engagement in micro-productive activities	Structured productive engagement was positively associated with psychological resilience.

Research Gap Analysis

Most previous studies have examined passive psychological therapy and productive activities separately. In addition, few studies have provided an integrated physical *all-in-one box kit* specifically adapted to the sensory and motor limitations of older adults.

Conceptual Framework

This study adopts an Input-Process-Output framework:

- **INPUT:** The initial condition of older adults with varying levels of *psychological well-being*, including low autonomy, perceived helplessness, and a lack of daily purpose.
- **PROCESS:** Implementation of the *healthpreneurship-based Mental Health Box* intervention, including relaxation activities, *mindfulness journaling*, herbal tea and aromatherapy *crafting*, product labeling, and product exhibitions.
- **OUTPUT:** An increase in older adults' *psychological well-being* scores at the posttest, reflecting improvements across Ryff's six dimensions of psychological well-being.

METHODOLOGY

Research Design

This study employed a pre-experimental design using a One-Group Pretest-Posttest Design (Psychological well-being was measured before the intervention, followed by the implementation of the healthpreneurship-based Mental Health Box intervention for four weeks, and concluded with a post-intervention measurement).

Population, Sample, and Sampling Technique

The study population consisted of all older adults residing at the research site. A total of 40 older adults who met the inclusion criteria participated as respondents. The sampling technique used was *total sampling*.

Research Instrument and Operationalization of the Intervention Mechanism

PWB was measured using an interval-scale questionnaire, with higher scores indicating better levels of psychological well-being. To strengthen the assessment of the intervention mechanism, the recommended operationalization of standardized instruments is presented in Table 3.

Table 3. Operationalization of the Intervention Mechanism and Standardized Measurement Instruments

Mechanism Dimension	Operational Indicators in Older Adults	Recommended Standardized Measurement Instruments
Cognitive	Executive functioning, working memory, attentional focus, and instruction processing.	MoCA-Ina (Montreal Cognitive Assessment–Indonesian Version)/CFQ (Cognitive Failures Questionnaire).
Sensory	Somatosensory awareness, olfactory stimulation (aroma), and tactile processing.	MAIA-2 (Multidimensional Assessment of Interoceptive Awareness-2).
Fine Motor	Finger dexterity and hand-eye coordination during product preparation and packaging.	NHPT (Nine-Hole Peg Test) / JTHFT (Jebsen-Taylor Hand Function Test) Small Objects Subtest.
Self-Efficacy	Older adults' confidence in completing productive tasks and managing life circumstances.	GSES (General Self-Efficacy Scale) / ESE (Entrepreneurial Self-Efficacy Scale).
Empowerment & meaning	Shifts in social roles toward productive agency, meaning in life, and autonomy.	PES (Psychological Empowerment Scale) / MLQ (Meaning in Life Questionnaire).

Intervention Procedure

The intervention was conducted regularly in a group-based support setting over a period of four weeks. Older adults were provided with a *Mental Health Box* containing large-print *mindfulness journaling* sheets, affirmation cards, herbal tea and aromatherapy materials, as well as micro-scale packaging supplies.

Data Analysis Techniques

Quantitative data were analyzed using SPSS:

- Descriptive Analysis: Frequencies, percentages, mean, standard deviation (SD), minimum, and maximum values were calculated.
- Normality Test: The Shapiro-Wilk test was used because ($n = 40 < 50$).
- Hypothesis Testing: A Paired Samples t-test was conducted at a significance level of ($\alpha = 0,05$).

Effect Size Analysis: Cohen's d_z and the 95% Confidence Interval (CI) were calculated to assess the magnitude of change.

RESULTS AND DISCUSSION

Respondent Characteristics

The distribution of the characteristics of the 40 older adult respondents based on sex and age group is presented in Table 4.

Table 4. Distribution of Respondent Characteristics ($n = 40$)

Characteristic	Frequency (f)	Percentage (%)
Sex		
Male	14	35.0
Female	26	65.0
Age Group		
60–64 years	15	37.5
65–69 years	14	35.0
70–74 years	8	20.0
≥ 75 tahun	3	7.5
Total	40	100.0

Based on Table 4.1, the majority of respondents were female, with 26 participants (65.0%), while 14 participants (35.0%) were male. In terms of age groups, most respondents were aged 60–64 years, with 15 participants (37.5%), followed by those aged 65–69 years, with 14 participants (35.0%).

Description of Psychological Well-Being Before and After the Intervention

The descriptive statistics of respondents' PWB scores at the pretest and posttest stages are presented in Table 4.

Table 5. Distribution of Psychological Well-Being Scores among Older Adults Before and After the Intervention $n = 40$

Measurement	Mean	SD	Minimum	Maximum
Pretest	62.40	6.80	49	75
Posttest	76.90	7.10	62	90

Table 5. shows that before the intervention (*pretest*), the mean PWB score among older adults was 62.40 (), with scores ranging from 49 to 75. After the intervention (*posttest*), the mean PWB score increased to 76.90, with scores ranging from 62 to 90. Overall, the mean PWB score increased by 14.50 points.

Data Normality Test

The results of the *Shapiro-Wilk* normality test for the PWB variable are presented in Table 6

Table 6 Shapiro-Wilk Normality Test Results for Psychological Well-Being

Variable	Shapiro-Wilk Statistic	p-value	Interpretation
PWB Pretest	0.972	0.420	Normal ($p > 0.05$)
PWB Posttest	0.965	0.250	Normal ($p > 0.05$)

Based on Table 6, the p -values for the *pretest* (0.420) and *posttest* (0.250) were both greater than 0.05. This indicates that the PWB data were normally distributed, thereby satisfying the assumption for parametric analysis.

Analysis of Differences in Psychological Well-Being Before and After the Intervention

The results of the *Paired Samples t-test* are presented in Table 7.

Table 7. Results of the Paired Samples t-test for Psychological Well-Being among Older Adults

Measurement	Mean	SD	Mean Difference	t	df	p-value	Cohen's dz	95% CI
Pretest	62.40	6.80	14.50	15.53	39	<0.001	4.94	[13.61; 15.49]
Posttest	76.90	7.10	—	—	—	—	—	—

The *Paired Samples t-test* yielded a t -value of 15.53 with $df = 39$ and $p < 0.001$. Because $p < 0.05$, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was supported. These results indicate a statistically significant difference in the mean psychological well-being scores of older adults before and after the *healthpreneurship-based Mental Health Box* intervention. The *Cohen's dz* value of 4.94 and the 95% confidence interval [13.61; 15.49] indicate a very large effect size.

Interpretation of the Main Findings

The significant increase in older adults' *psychological well-being* scores ($t = 15.53$; $p < 0.001$), with a mean difference of 14.50 points, indicates a positive change in PWB following the implementation of the *healthpreneurship-based Mental Health Box*. This finding suggests that the psychological well-being of older adults may be supported through structured stimulation delivered using interactive media.

The observed improvement may be related to the characteristics of the *Mental Health Box*, which not only provides passive relaxation but also combines guided psychological activities with productive activities involving health-oriented micro-entrepreneurship.

Analysis of the Multidimensional Intervention Mechanisms

The positive changes observed following the intervention can be explained through several simultaneous mechanisms:

1. **Cognitive and Sensory Mechanisms:** Reading large-print instructions, completing *mindfulness journaling*, and engaging with aromatherapy involve *multisensory engagement*. Olfactory and tactile stimulation combined with cognitive tasks may engage working memory and executive functioning, potentially supporting cognitive functioning among older adults.
2. **Fine Motor Skills Mechanism:** Sorting tea leaves, assembling aromatherapy pouches, and packaging products involve repeated and meaningful fine-motor activities. These activities may help maintain finger dexterity and hand-eye coordination among older adults.
3. **Self-Efficacy Mechanism:** According to Bandura's Social Cognitive Theory, successful experiences (*enactive mastery experiences*) represent an important source of self-efficacy. The successful completion of *healthpreneurship* products by older adults may strengthen micro-entrepreneurial self-efficacy and reduce perceptions of helplessness.
4. **Empowerment and Meaning in Life Mechanism:** The intervention may facilitate a shift in the role of older adults from *passive care recipients* to *active contributors* who participate in value-creating activities. Social recognition (*social validation*) when products are exhibited or shared may contribute to a stronger sense of meaning and usefulness in later life.

Relationship to Ryff's Theory and Successful Aging

The findings are consistent with the six dimensions of PWB proposed by Carol Ryff. *Healthpreneurship* activities may facilitate *Purpose in Life* by providing new daily goals, *Personal Growth* through the acquisition of micro-entrepreneurial skills, and *Environmental Mastery* through activities involving the preparation and utilization of herbal materials.

These findings are also consistent with the *Successful Aging* perspective proposed by Rowe and Kahn and with the concept of *Productive Aging*, which emphasizes the importance of active engagement in meaningful and productive activities during later life.

Methodological Limitations

To maintain methodological rigor, several limitations of this study should be considered:

- **Pre-Experimental Design without a Control Group:** This study employed a *One-Group Pretest-Posttest Design* without a comparison or control group. Therefore, the observed increase in PWB scores cannot be attributed exclusively or conclusively to the intervention.
- **Potential Confounding Variables:** The observed improvement may have been influenced by potential confounding factors, including the *Hawthorne effect* (changes in behavior resulting from participants' awareness of receiving special attention), social interaction among participants during group sessions, and family support.

Generalizability: The findings provide preliminary evidence and should be further examined using more rigorous experimental designs, such as a *Randomized Controlled Trial* (RCT), involving a larger and more diverse sample.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the data analysis and discussion, it can be concluded that the implementation of the *healthpreneurship*-based *Mental Health Box* intervention was significantly associated with an increase in *psychological well-being* scores among the older adult participants in this study ($t = 15,53$; $p < 0,001$; Mean difference = 14,50). The integration of guided psychoeducation with small-scale health entrepreneurship activities may contribute positively to supporting self-efficacy, meaning in life, and autonomy among older adults. Nevertheless, the interpretation of the intervention's effectiveness should take into account the limitations of the pre-experimental design.

Practical and Policy Implications

- **For Elderly Health Posts and Nursing Homes:** The *Mental Health Box* may be considered as a weekly non-pharmacological empowerment program to promote independence and productive engagement among older adults.
- **For Healthcare Professionals and Caregivers:** The *healthpreneurship* approach may be utilized as a community-based occupational therapy and psychosocial empowerment strategy.

Recommendations for Future Research

1. **Methodology:** Future studies are recommended to employ a *Randomized Controlled Trial* (RCT) design involving a control group and to conduct follow-up assessments to evaluate the sustainability of the intervention effects over the long term.

Multidimensional Assessment: Future research should integrate cognitive (MoCA-Ina), sensory (MAIA-2), and motor (NHPT) assessment instruments to examine the psychophysical mechanisms underlying the intervention more precisely.

FURTHER STUDY

Further Study should employ a more rigorous research design, particularly a randomized controlled trial or quasi-experimental design with a control or comparison group, to determine the effectiveness of the *healthpreneurship*-based *Mental Health Box* more conclusively. Future studies should also involve larger and more diverse samples from different community settings and nursing homes to improve the generalizability of the findings. In addition to psychological well-being, subsequent research is recommended to assess the intervention's multidimensional mechanisms using standardized instruments measuring cognitive function, sensory awareness, fine motor skills, self-efficacy, psychological empowerment, and meaning in life. Long-term

follow-up assessments are also needed to examine whether improvements in psychological well-being are sustained after the intervention ends. Furthermore, future research could evaluate the feasibility, acceptability, cost-effectiveness, and potential economic value of the healthpreneurship component to determine whether older adults can sustainably participate in small-scale productive activities through community-based elderly health programs.

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