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Health-Promoting Lifestyle Outcomes of the Golden STEPS Program among Senior Citizens: A Quasi-Experimental Pre-Post Evaluation

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Abstract

Population ageing requires community-based interventions that support functional ability, self-management, and health-promoting behaviors among older adults. This study evaluated changes in health-promoting lifestyle outcomes among senior citizens who participated in the Golden STEPS Program, a barangay-based holistic wellness initiative in Calamba City. A quasi-experimental single-group pretest-posttest design was employed among 32 barangay senior citizen presidents who completed both assessments after uniform program exposure. Health-promoting lifestyle practices were measured using a 12-item short-form HPLP-II-based instrument covering physical activity, nutrition, stress management, and spiritual growth, while health-related knowledge was assessed using a 10-item researcher-developed questionnaire aligned with the program modules. Descriptive statistics, paired-samples t-tests, Wilcoxon signed-rank tests, Cohen's dz, and Cronbach's alpha were used for analysis. Results showed a significant improvement in overall health-promoting lifestyle scores from pretest to posttest, with the strongest gains observed in physical activity and nutrition, followed by a smaller but significant improvement in stress management. Spiritual growth showed no significant change, likely reflecting high baseline engagement. Knowledge scores were already high at baseline and did not significantly increase, suggesting a ceiling effect. The findings indicate that Golden STEPS was associated with improved daily lifestyle practices among senior citizen leaders, although the absence of a comparison group limits causal inference.

Keywords: *active ageing; barangay-based health promotion; community-based intervention; Golden STEPS Program; health-promoting lifestyle; senior citizens*

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1. Introduction

Population ageing has become a major public health concern because longer life expectancy does not automatically translate into healthier, more functional, or more independent later-life years. As the proportion of older adults continues to rise, health systems are increasingly required to move beyond episodic treatment and toward preventive, community-based strategies that sustain functional ability, self-management, psychosocial well-being, and quality of life among senior citizens. This concern is especially relevant in low- and middle-income settings, where access to specialized geriatric services may be limited and where local community structures often serve as the first line of support for older adults.

Health-promoting lifestyle behaviors are central to healthy ageing because they influence older adults' capacity to manage chronic conditions, maintain physical mobility, reduce preventable health risks, and remain socially engaged. Prior studies have shown that health-promoting lifestyle patterns among older adults are associated with self-care agency, better symptom management, and improved quality-of-life outcomes, especially among those

living with chronic conditions such as hypertension and related illnesses (Du et al., 2022). In addition, lifestyle practices among older adults are shaped not only by individual knowledge but also by social support, family relationships, socioeconomic conditions, and health-related quality of life (Zheng et al., 2022).

In the Philippine context, population ageing occurs alongside the continuing burden of noncommunicable diseases, financial vulnerability, fragmented geriatric support, and uneven access to organized wellness programs. Although national and local policy frameworks emphasize active ageing and senior citizen welfare, many community-based programs remain activity-oriented rather than outcome-oriented. Local interventions often consist of periodic health talks, benefit distribution, social gatherings, or fragmented wellness activities, with limited empirical documentation of whether these efforts produce measurable changes in daily health-promoting behaviors. This creates a practical and scholarly gap in evaluating whether barangay-based senior wellness programs can improve lifestyle practices in real-world community settings. These local concerns also intersect with broader Philippine health-system capacity and long-term care pressures. Atento, Quinto, and Espelita (2025) identify caregiver demand, domestic shortage risks, and competency alignment as structural concerns for ageing-related service delivery.

Community-based interventions are particularly relevant because older adults' health behaviors are often sustained through routine, social reinforcement, peer participation, and local leadership. Evidence from intervention studies suggests that walking programs, co-exercise activities, guided self-management strategies, and peer-supported health promotion activities can improve movement-related and health-promoting lifestyle behaviors among older adults (Chia et al., 2023; Huang et al., 2022). Reviews of community-based physical activity and nutrition interventions also indicate that such programs can improve fruit and vegetable consumption, physical activity, physical function, and nutrition-related knowledge among older adults when interventions are structured and locally accessible (Bernard et al., 2025). These findings support the value of barangay-level delivery models, particularly in communities where older adults are already organized through senior citizen associations and local leadership structures.

The Golden STEPS Program was developed as a community-based holistic wellness initiative for senior citizens in Calamba City. The program integrates physical health, mental and emotional well-being, spiritual growth, and basic financial wellness through lectures, group activities, guided exercises, and peer-supported engagement. Its program pillars emphasize movement, disease prevention, stress reduction, purpose, faith, budgeting, savings, and scam awareness. In the present study, the program was evaluated among barangay senior citizen presidents who had uniform exposure to the intervention and completed both pretest and posttest assessments.

The empirical gap addressed by this study lies in the limited local evidence on whether integrated, barangay-based senior wellness programs can produce measurable pretest-posttest improvements in health-promoting lifestyle practices. While prior literature supports the importance of lifestyle behavior, social support, and structured community intervention among older adults, fewer studies have documented these outcomes in Philippine barangay settings using a multidomain lifestyle measure. This study therefore contributes to public health practice by evaluating whether the Golden STEPS Program is associated with improvements in daily lifestyle behaviors among senior citizen leaders, while also examining whether knowledge outcomes changed following program participation.

This study aimed to evaluate the health-promoting lifestyle outcomes of the Golden STEPS Program among senior citizens using a quasi-experimental pretest-posttest design. Specifically, it sought to: (1) describe the demographic, functional, and baseline health characteristics of the senior citizens who participated in the evaluation; (2) determine whether overall health-promoting lifestyle scores changed significantly from pretest to posttest following participation in the Golden STEPS Program; (3) assess pretest-posttest changes in specific lifestyle domains, particularly physical activity, nutrition, stress management, and spiritual growth; (4) identify the lifestyle items or behaviors that demonstrated the greatest magnitude of improvement after program exposure; and (5) examine whether health-related knowledge scores changed from pretest to posttest following participation in the program.

2. Review of Related Literature

2.1 Population Ageing and the Need for Health-Promoting Lifestyle Interventions

Population ageing has intensified the need for public health strategies that extend beyond clinical treatment and address the daily behaviors that sustain health, independence, and quality of life among older adults. The World Health Organization (2020) emphasized healthy ageing as a long-term public health priority, particularly because older populations are expanding rapidly in many low- and middle-income countries. This demographic shift places pressure on local health systems to develop preventive and community-based interventions that can support older adults before functional decline becomes severe.

Health-promoting lifestyle behaviors are particularly important in ageing populations because they are associated with better management of chronic conditions and improved quality-of-life outcomes. Du et al. (2022) found that health-promoting lifestyle was associated with self-care agency and health-related quality of life among older adults with hypertension. These findings are relevant in community settings where older adults commonly experience hypertension, diabetes, joint pain, and other noncommunicable or age-related conditions. Lifestyle practices such as physical activity, proper nutrition, stress management, and spiritual well-being therefore serve as practical mechanisms through which older adults may preserve functioning and manage health risks.

Social and environmental conditions also influence lifestyle behaviors among senior citizens. Zheng et al. (2022) reported that social support was a major factor associated with health-promoting lifestyles among older adults, alongside socioeconomic conditions, family relationships, and health-related quality of life. This reinforces the importance of organized community programs, particularly in barangay settings where senior citizens are already connected through local associations and leadership structures.

2.2 Health-Promoting Lifestyle Measurement and the HPLP-II Framework

The Health-Promoting Lifestyle Profile II provides a useful framework for measuring lifestyle behaviors because it conceptualizes health promotion as a multidimensional pattern of daily practices. The original Health-Promoting Lifestyle Profile developed by Walker, Sechrist, and Pender (1987) assessed health-promoting behaviors across domains such as health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management. Although the present study used a shortened HPLP-II-based measure rather than the full scale, the framework remains relevant because it supports the assessment of specific behavioral domains aligned with senior wellness interventions.

Recent applications of the HPLP-II indicate that it remains a widely used instrument for evaluating health-promoting behaviors across adult populations. Rathnayake et al. (2020) provided evidence on the applicability of the HPLP-II in assessing health-promoting behaviors among postmenopausal women, while Zambrano Bermeo et al. (2024) reported acceptable reliability and validity of the Spanish version of the HPLP-II. These studies support the continued use of HPLP-II-derived measures in health promotion research, provided that adaptation, shortening, or domain selection is clearly described.

In older-adult populations, the HPLP-II framework is especially relevant because it allows researchers to distinguish among different forms of health behavior rather than treating lifestyle as a single undifferentiated construct. For example, physical activity and nutrition may respond differently to an intervention than spiritual growth or stress management. This supports the use of domain-specific analysis when evaluating programs such as Golden STEPS.

2.3 Community-Based Interventions for Older Adults

Community-based interventions have become increasingly important in promoting healthy ageing because they are delivered within the social environments where older adults live, interact, and sustain daily routines. Unlike clinic-based interventions that may focus primarily on disease management, community programs can reinforce practical lifestyle behaviors through peer participation, routine formation, and local accountability. Chia et al. (2023)

found that walking and health-behavior interventions can positively affect health behaviors and encourage health-promoting lifestyles among older adults.

Physical activity and nutrition are among the most responsive domains in community-based older-adult interventions. Huang et al. (2022) reported that physical activity combined with social support can help promote health-promoting lifestyles among older adults. Bernard et al. (2025) similarly found that community-based physical activity and nutrition interventions in low-income or rural older adult populations demonstrated positive outcomes, including improvements in fruit and vegetable consumption, physical activity levels, physical function, and nutrition knowledge. These findings suggest that movement-related and diet-related behaviors improve when older adults are given organized opportunities, practical strategies, and supportive social environments.

Community programs may also need to address the broader conditions that shape older adults' capacity to practice healthy lifestyles. Financial vulnerability can influence access to medication, food choices, health-seeking behavior, stress, and overall well-being. Frimpong et al. (2022) highlighted the connection between financial vulnerability, health outcomes, and well-being among older adults during the COVID-19 pandemic. This supports the inclusion of financial wellness content in senior citizen interventions, particularly when programs are implemented among older adults with limited income and chronic health needs. Although focused on students rather than older adults, Philippine financial-literacy evidence also suggests that awareness and perceptions may relate to saving and investment behaviors more strongly than to routine spending, supporting the need to assess financial wellness as a behavioral rather than purely cognitive domain (Espelita et al., 2025).

2.4 Synthesis and Literature Gaps

The reviewed literature shows that health-promoting lifestyle behaviors are important determinants of healthy ageing, particularly among older adults who face chronic disease risk, functional vulnerability, and psychosocial challenges (Du et al., 2022; Zheng et al., 2022). The HPLP-II framework offers a multidimensional basis for measuring these behaviors, while contemporary validation studies support its continued use and adaptation in health promotion research (Rathnayake et al., 2020; Walker et al., 1987; Zambrano Bermeo et al., 2024). Evidence from intervention studies further suggests that community-based programs can improve physical activity, nutrition, and broader lifestyle outcomes among older adults when they are structured, socially supported, and locally accessible (Bernard et al., 2025; Chia et al., 2023; Huang et al., 2022).

However, several gaps remain. First, much of the available evidence comes from international contexts, while local Philippine barangay-based evaluations remain limited. Second, many senior citizen programs are implemented as community activities without systematic pretest-posttest outcome assessment. Third, integrated wellness programs that combine physical, mental, spiritual, and financial dimensions are less frequently evaluated using multidomain lifestyle measures. Finally, limited evidence is available on whether older adults with already high baseline knowledge still show measurable improvements in lifestyle practice after structured program exposure. The present study responds to these gaps by evaluating the Golden STEPS Program as a barangay-based, implementation-informed senior wellness intervention using pretest-posttest measures of health-promoting lifestyle practices and health-related knowledge.

3. Methodology

3.1 Research Design

This study employed a quasi-experimental single-group pretest-posttest design to evaluate changes in health-promoting lifestyle practices and health-related knowledge among senior citizens who participated in the Golden STEPS Program. This design was appropriate because the program was implemented in a real-world barangay setting where random assignment and a separate control group were not feasible. The design allowed the study to compare respondents' baseline and post-intervention scores after uniform exposure to the program.

3.2 Participants and Sampling Technique

The Golden STEPS Program was implemented among senior citizens in selected barangays of Calamba City. Although approximately 400 senior citizens attended the program launching, the evaluation focused on 32 barangay senior citizen presidents who completed both the pretest and posttest assessments.

Purposive sampling was used. Respondents were selected because they were officially designated barangay senior citizen presidents, were aged 60 years and above, attended the Golden STEPS sessions, completed both assessments, and provided informed consent. This sampling strategy was appropriate for an implementation-informed evaluation because the respondents were local senior citizen leaders who could provide complete paired data and were directly involved in senior citizen activities within their barangays.

3.3 Intervention Description

The Golden STEPS Program was a half-day holistic wellness intervention for senior citizens. It was organized around four program pillars: Golden Body, Orderly Finances, Light Mind, and Deep Faith. These corresponded to physical health, financial health, mental and emotional health, and spiritual health.

The program included lectures, guided movement activities, practical demonstrations, group exercises, financial literacy activities, stress-management practices, prayer or reflection activities, and post-session evaluation. The implementation was conducted in phases: registration and pretest, orientation, core sessions on physical health, financial health, mental and emotional health, and spiritual health, followed by posttest administration and closing activities.

3.4 Research Instruments

Two instruments were used in the study. First, health-promoting lifestyle practices were measured using a 12-item short-form HPLP-II-based instrument. The items were selected from domains aligned with the Golden STEPS Program, particularly physical activity, nutrition, stress management, and spiritual growth. Respondents rated each item using a four-point frequency scale: Never, Sometimes, Often, and Routinely. The lifestyle score was computed as the mean of the 12 items.

Second, health-related knowledge was measured using a 10-item researcher-developed questionnaire based on the Golden STEPS seminar modules. The questionnaire covered physical health, mental and emotional health, financial health, and spiritual health. It consisted of multiple-choice items administered during both the pretest and posttest.

The knowledge questionnaire was developed to match the content of the program. The original study reports that it underwent expert content validation by public health and gerontology experts and was pilot tested among older adults to ensure clarity, relevance, and age-appropriateness. The 12-item lifestyle scale demonstrated acceptable internal consistency at pretest and good internal consistency at posttest.

3.5 Data Gathering Procedure

Data collection was conducted in person during scheduled program meetings. Before data collection, permission was obtained from program coordinators and barangay representatives. Respondents were informed about the purpose of the study, the procedures, the voluntary nature of participation, and the confidentiality of their responses.

The pretest was administered before the implementation of the Golden STEPS sessions. Respondents completed the health knowledge questionnaire and the 12-item lifestyle instrument. The posttest was administered after program participation using the same instruments. The same participant codes were used for the pretest and posttest to allow paired analysis while maintaining confidentiality.

3.6 Data Analysis

Data were analyzed using JAMOVI. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' demographic, functional, and health characteristics.

Paired-samples t-tests were used to examine pretest-posttest changes in health knowledge scores, overall lifestyle scores, and domain-specific lifestyle scores. Wilcoxon signed-rank tests were also conducted as sensitivity analyses because of the small sample size and the ordinal nature of the Likert-type responses. Cohen's dz was used to estimate effect size for pretest-posttest changes. Cronbach's alpha was computed to assess the internal consistency reliability of the 12-item lifestyle scale. Statistical significance was set at $p < .05$.

3.7 Ethical Considerations

The study followed ethical principles for community-based research involving human participants. Participation was voluntary, and respondents were informed that they could withdraw from the study without penalty. Confidentiality was maintained through participant coding and secure handling of data. The procedures were aligned with ethical standards for research involving human participants, including respect for informed consent, privacy, and non-maleficence.

4. Results and Discussion

4.1 Participant Characteristics

Thirty-two senior citizens participated in the pretest-posttest evaluation of the Golden STEPS Program. The respondents were predominantly female, with 26 women representing 81.3% of the sample, while six respondents, or 18.8%, were male. The largest age group was 75-79 years old, comprising 15 respondents or 46.9% of the sample. This was followed by those aged 70-74 years old, with eight respondents or 25.0%. Most respondents were either widowed or married, and nearly half had completed college or vocational education.

In terms of living arrangement, more than half of the respondents lived with a child or grandchild, while others lived with a spouse, lived alone, or lived with other relatives. Pension was the most common primary income source, followed by support from children or family members. Most respondents reported a monthly household income below PHP 5,000, suggesting that financial vulnerability was an important contextual condition among the participants. Functionally, nearly all respondents could walk independently, although one respondent reported using a cane or walker. Regarding health conditions, hypertension was the most frequently reported doctor-diagnosed condition, followed by arthritis or joint pain, diabetes, kidney problems, and heart disease.

This profile indicates that the respondents represented an older adult leadership group with high community involvement but also with common later-life health risks. Their chronic disease profile supports the relevance of evaluating a community-based program focused on movement, nutrition, stress management, and wellness routines.

4.2 Health Knowledge and Overall Health-Promoting Lifestyle Outcomes

Table 1 presents the pretest and posttest comparison of health knowledge and overall health-promoting lifestyle scores. Health knowledge was already high at baseline, with a pretest mean of 9.13 out of 10. The posttest mean increased slightly to 9.34, but the change was not statistically significant. The paired t-test result, $t(31) = 1.56$, $p = .129$, and the Wilcoxon signed-rank result, $p = .124$, both indicate that the observed increase in knowledge was small and not statistically meaningful. The effect size was also small, $dz = 0.28$.

By contrast, the overall health-promoting lifestyle score increased from 2.80 to 3.05 on a four-point scale. This improvement was statistically significant, $t(31) = 3.00$, $p = .005$, and was confirmed by the Wilcoxon signed-rank test, $p = .008$. The effect size was moderate, $dz = 0.53$. These results suggest that participation in the Golden STEPS Program was associated with measurable improvement in overall lifestyle practices, even though knowledge scores did not significantly increase.

Table 1. Pretest and Posttest Comparison of Health Knowledge and Overall Health-Promoting Lifestyle Scores

Outcome	Pretest Mean (SD)	Posttest Mean (SD)	Mean Change	Test	p-value	Effect Size
Knowledge score, 0-10	9.13 (0.94)	9.34 (1.00)	+0.22	Paired t-test / Wilcoxon	.129 / .124	dz = 0.28
Lifestyle mean, 1-4	2.80 (0.42)	3.05 (0.49)	+0.26	Paired t-test / Wilcoxon	.005 / .008	dz = 0.53

Note. Lifestyle mean was computed as the average of 12 frequency items using a four-point scale: 1 = Never, 2 = Sometimes, 3 = Often, and 4 = Routinely.

The contrast between knowledge and lifestyle outcomes is important. The absence of a significant knowledge gain does not necessarily indicate program weakness. Rather, it suggests that respondents may have already possessed substantial baseline knowledge before the assessed session. Since the respondents were senior citizen presidents and had prior exposure to wellness-related activities, the high pretest knowledge score may have created a ceiling effect. The more important finding is that lifestyle practices improved despite limited knowledge gain, suggesting that the program may have helped translate existing awareness into more consistent daily behavior.

4.3 Domain-Specific Health-Promoting Lifestyle Changes

Table 2 shows the pretest and posttest comparison across the four lifestyle domains included in the shortened HPLP-II-based measure. Physical activity demonstrated the largest improvement, increasing from 2.47 to 2.85, with a mean change of +0.39. This change was statistically significant at $p < .001$ and had the largest effect size, $dz = 0.69$.

Nutrition also improved significantly, increasing from 2.43 to 2.78, with a mean change of +0.35, $p = .012$, and $dz = 0.47$. Stress management increased from 2.98 to 3.23, with a smaller but still statistically significant change, $p = .045$, and $dz = 0.37$. Spiritual growth showed almost no change, increasing only from 3.31 to 3.34, $p = .759$, with a negligible effect size, $dz = 0.05$.

Table 2. Pretest and Posttest Comparison of Health-Promoting Lifestyle Domains

Domain	Pretest Mean	Posttest Mean	Mean Change	p-value	Effect Size, dz
Physical activity	2.47	2.85	+0.39	< .001	0.69
Nutrition	2.43	2.78	+0.35	.012	0.47
Stress management	2.98	3.23	+0.25	.045	0.37
Spiritual growth	3.31	3.34	+0.03	.759	0.05

Note. Domain scores represent mean frequency ratings on a 1-4 scale. Paired-samples t-tests were used for the primary analysis.

The domain-level results indicate that the Golden STEPS Program was most responsive in the behavioral domains that were concrete, routine-based, and action-oriented. Physical activity and nutrition are practices that can be immediately reinforced through demonstration, group activity, and practical reminders. Stress management also improved, although to a lesser degree. Spiritual growth did not significantly improve, but this is likely due to the high baseline score rather than the irrelevance of the spiritual component. Among older Filipino adults, spiritual

belief and practice may already be strongly embedded in daily life, leaving limited room for measurable short-term change.

4.4 Item-Level Changes in Lifestyle Practices

Table 3 presents the item-level changes ranked by magnitude of improvement. The largest gains were observed in planned exercise, exercise through daily activities, low-fat or low-cholesterol food choices, vegetable intake, and daily relaxation. These item-level results further clarify the domain-level findings by showing that the greatest improvements occurred in specific practices that could be directly influenced by the program's physical health, nutrition, and stress-management activities.

Table 3. Item-Level Pretest and Posttest Mean Scores Ranked by Magnitude of Change

Lifestyle Practice	Domain	Pretest Mean	Posttest Mean	Mean Change
Planned exercise or scheduled activity	Physical activity	2.56	3.06	+0.50
Exercise through daily activities	Physical activity	2.50	2.97	+0.47
Chooses low-fat or low-cholesterol food	Nutrition	2.38	2.84	+0.47
Eats vegetables	Nutrition	2.47	2.91	+0.44
Practices daily relaxation	Stress management	2.63	3.03	+0.41
Participates in light to moderate exercise	Physical activity	2.34	2.72	+0.38
Limits sweets or sugar intake	Nutrition	2.59	2.78	+0.19
Manages stress through coping strategies	Stress management	3.06	3.25	+0.19
Maintains positive outlook when stressed	Stress management	3.25	3.41	+0.16
Feels life has purpose or meaning	Spiritual growth	3.34	3.34	+0.00
Engages in faith or spiritual practice	Spiritual growth	3.28	3.31	+0.03
Maintains inner peace or reflection	Spiritual growth	3.31	3.38	+0.06

The largest item-level change was observed in planned exercise, followed by exercise through daily activities. These findings are consistent with the intervention design because the program included warm-up activities, movement demonstrations, and practical suggestions for incorporating physical activity into daily routines. Improvements in low-fat food choices and vegetable intake also reflect the nutrition-related content of the program. The increase in daily relaxation suggests that even brief mental and emotional health activities may influence stress-management routines among older adults.

4.5 Internal Consistency Reliability

The 12-item lifestyle scale demonstrated acceptable internal consistency at pretest and good internal consistency at posttest. As shown in Table 4, Cronbach's alpha increased from .785 at pretest to .856 at posttest. These values indicate that the shortened lifestyle measure had adequate reliability for assessing overall health-promoting lifestyle practices in this sample.

Table 4. Internal Consistency Reliability of the Health-Promoting Lifestyle Scale

Administration	Number of Items	Cronbach's Alpha	Interpretation

Pretest	12	.785	Acceptable
Posttest	12	.856	Good

Note. Cronbach's alpha values of .70 and above are generally interpreted as acceptable for internal consistency.

The reliability results support the use of the 12-item measure as a compact outcome indicator for the present evaluation. However, because the instrument was a shortened HPLP-II-based measure rather than the full HPLP-II, the findings should be interpreted as evidence of selected lifestyle practice changes rather than as a complete assessment of all HPLP-II domains.

4.6 Discussion

The findings indicate that the Golden STEPS Program was associated with significant improvement in health-promoting lifestyle practices among barangay senior citizen leaders. The improvement in overall lifestyle score, supported by both paired t-test and Wilcoxon signed-rank results, suggests that the program may have strengthened the consistency of daily health behaviors. This is meaningful because the respondents were older adults with common chronic disease risks, including hypertension, arthritis or joint pain, and diabetes. For this population, even moderate improvements in movement, nutrition, and stress management may have practical value for maintaining function and supporting self-management.

The strongest improvements were found in physical activity and nutrition. This pattern is consistent with prior intervention literature showing that community-based programs often produce stronger effects in concrete behavior domains such as walking, exercise, food choice, and dietary routines (Bernard et al., 2025; Chia et al., 2023; Huang et al., 2022). These domains are easier to operationalize because they involve visible and actionable practices. In the Golden STEPS Program, physical activity was reinforced through movement activities and practical examples, while nutrition was addressed through concrete guidance on healthier food choices. The item-level results confirm that respondents improved most in planned exercise, exercise through daily activities, low-fat food choices, vegetable intake, and relaxation.

Stress management also improved significantly, although the effect size was smaller than those observed for physical activity and nutrition. This may reflect the nature of stress-management behavior, which is partly behavioral but also emotional and psychological. Activities such as deep breathing, relaxation, gratitude, and social sharing may produce immediate benefits, but more sustained practice may be required before stronger measurable changes emerge. The result nevertheless suggests that brief community-based wellness interventions can influence stress-related routines among older adults.

Spiritual growth did not significantly change. This finding should not be interpreted as evidence that the spiritual component was ineffective. Rather, the baseline spiritual growth score was already high, indicating that respondents likely entered the program with established spiritual beliefs and practices. In strongly religious or faith-oriented older adult communities, spiritual practices may already be part of everyday life, making additional short-term statistical improvement difficult to detect. This is consistent with the possibility of a ceiling effect.

The nonsignificant change in knowledge scores also requires careful interpretation. Respondents scored very high at pretest, with an average of 9.13 out of 10. Because the respondents were senior citizen presidents and had prior exposure to Golden STEPS sessions, they may have already possessed the knowledge measured by the questionnaire. The small and nonsignificant posttest increase is therefore not surprising. More importantly, lifestyle scores improved despite minimal knowledge gain. This supports the view that the program functioned less as a knowledge-transmission activity and more as a behavioral reinforcement intervention. In health promotion, knowledge alone is often insufficient to produce behavioral change. Older adults may already know what should be done, but structured activities, peer support, and routine reinforcement may help convert knowledge into practice.

This interpretation is consistent with local community health evidence showing that awareness alone may have only weak associations with preventive practice, while preventive attitudes may be more strongly linked with actual health behavior (Temporada et al., 2025).

The findings have community-level relevance because the respondents were barangay senior citizen presidents. As local leaders, they may serve as carriers of health-promoting routines within their respective barangays. This leadership-centered feature strengthens the implementation value of the program, although it also limits generalizability to ordinary senior citizen members who may differ in motivation, availability, health status, or social engagement.

The study has methodological limitations. The absence of a control group prevents strong causal claims. The sample was small and purposively selected, which limits external validity. The use of a shortened HPLP-II-based measure allowed practical data collection among older adults but did not capture the full HPLP-II structure. In addition, the financial health component was included in the program and knowledge questionnaire but was not part of the 12-item lifestyle outcome scale, which means that behavioral change in financial wellness was not directly assessed as a primary lifestyle outcome. These limitations should be addressed in future evaluations through larger samples, comparison groups, longer follow-up periods, and more complete measurement of all program pillars.

Despite these limitations, the study provides useful implementation-informed evidence. It shows that a barangay-based senior wellness program can be evaluated using a practical pretest-posttest design and that measurable gains may be observed in daily lifestyle practices even when knowledge is already high. The major contribution of the study is its demonstration that Golden STEPS may help transform existing senior health awareness into more consistent health-promoting behaviors, particularly in physical activity, nutrition, and stress management.

5. Conclusions, Recommendations, and Implications

5.1 Conclusions

This study evaluated the health-promoting lifestyle outcomes of the Golden STEPS Program among senior citizens using a quasi-experimental single-group pretest-posttest design. Based on the findings, the program was associated with significant improvement in overall health-promoting lifestyle practices among the participating barangay senior citizen leaders. The increase in overall lifestyle score from pretest to posttest indicates that the program may have strengthened the respondents' consistency in practicing selected health-promoting behaviors, particularly those related to daily movement, planned exercise, healthier food choices, and relaxation.

The strongest improvement was observed in physical activity, followed by nutrition and stress management. These results suggest that the most responsive areas of the program were the concrete and practice-oriented domains where participants could immediately apply the lessons through routine actions. The item-level results further support this conclusion, as the largest improvements were found in planned exercise, exercise through daily activities, low-fat or low-cholesterol food choices, vegetable intake, and daily relaxation.

Spiritual growth did not show significant change. This finding is best interpreted in relation to the high baseline spiritual growth scores of the respondents. Since many older adults in the sample already reported strong spiritual orientation before the posttest, the limited change may reflect a ceiling effect rather than the absence of value in the spiritual component of the program.

Health-related knowledge scores were also high at baseline and did not significantly increase after the program. This suggests that the respondents already possessed substantial knowledge related to physical, mental, spiritual, and financial health before the assessed session. The more important finding is that lifestyle practices improved even when knowledge scores remained relatively stable. This indicates that Golden STEPS may have functioned more as a behavioral reinforcement program than as a purely educational intervention.

Overall, the findings support the usefulness of Golden STEPS as a barangay-based senior wellness program that can encourage selected health-promoting lifestyle practices among senior citizen leaders. However, because the study did not include a control group and used a purposively selected sample, the findings should be interpreted as evidence of pretest-posttest improvement associated with program participation, not as definitive causal proof of program effectiveness.

5.2 Recommendations

Local government units, barangay health offices, and senior citizen organizations may consider continuing and refining the Golden STEPS Program as a structured wellness intervention for older adults. The program appears especially useful in promoting physical activity, nutrition-related practices, and stress-management routines. These components should be retained and strengthened through repeated sessions, guided demonstrations, peer monitoring, and simple home-based practice plans.

The physical activity component should be expanded into regular barangay-based movement routines. Since planned exercise and daily activity showed the largest improvements, senior citizen groups may benefit from scheduled walking groups, seated exercise sessions, stretching routines, or low-impact movement activities adapted to older adults with mobility limitations.

The nutrition component should be translated into practical food planning activities. Instead of relying only on lectures, future sessions may include sample meal planning, low-salt and low-fat food demonstrations, affordable vegetable-based meal options, and family-oriented nutrition reminders. This is important because many respondents reported low household income, which may affect their capacity to follow ideal dietary recommendations.

The stress-management component should be maintained but reinforced over a longer period. Short activities such as breathing exercises, gratitude sharing, relaxation practice, music, prayer, and peer conversation may be integrated into regular senior citizen meetings to support emotional well-being.

The spiritual component should not be removed even though it did not show significant statistical improvement. Since baseline spiritual growth was already high, future evaluations may treat spirituality not only as an outcome but also as a support mechanism that helps sustain motivation, hope, social connection, and resilience among older adults.

Future versions of the program should include a more direct behavioral measure of financial wellness. The current intervention included financial health content and the knowledge questionnaire assessed budgeting, saving, and scam awareness, but the primary lifestyle outcome measure did not directly capture financial behavior change. Future evaluation tools should include practical financial behavior indicators such as budgeting practice, emergency savings behavior, scam avoidance actions, and medication-budget prioritization.

For research improvement, future studies should include a larger and more diverse sample of senior citizens, not only barangay senior citizen presidents. A comparison group should be added when feasible to strengthen causal inference. Longer follow-up periods may also be used to determine whether the observed lifestyle improvements are sustained after the program. Future studies may also examine whether age, sex, income, living arrangement, chronic disease status, and medication adherence predict responsiveness to the program.

5.3 Implications of the Study

The study has practical implications for community-based public health programming. It shows that senior citizen programs may become more useful when they move beyond one-time health lectures and incorporate structured, activity-based, and socially reinforced lifestyle practices. The findings suggest that older adults may already know many health principles, but they still benefit from organized opportunities to convert knowledge into routine behavior.

The study also has implications for barangay-level senior citizen services. Since the participants were senior citizen presidents, the program may have leadership-diffusion value. Training senior citizen leaders may help spread health-promoting routines to the broader senior citizen membership in their respective barangays. This makes the program potentially useful not only as an individual wellness activity but also as a community mobilization strategy.

The findings have methodological implications for local program evaluation. They demonstrate that a simple pretest-posttest design, a short lifestyle measure, and basic inferential statistics can generate useful evidence for community-based interventions. However, the study also shows the need for stronger future designs, especially comparison groups, longer follow-up periods, and fuller measurement of all intervention domains. The evaluation therefore also aligns with integrated health analytics thinking, which frames data integration, analytics capability, and decision quality as linked mechanisms for converting health-service evidence into organizational and public-service outcomes (Atento, Quinto, Espelita, & Castaneda, 2025).

The study also contributes to the local literature on active ageing by providing evidence from a Philippine barangay context. It supports the idea that integrated wellness programs for older adults should address not only physical health but also emotional, spiritual, and financial dimensions. At the same time, it shows that the measurable behavioral gains may be strongest in domains that are concrete, routine-based, and immediately actionable.

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