International Journal of Gerontology Special Issue (2019) S56–S61
https://doi.org/10.6890/IJGE.201910/SP.0009

International Journal of Gerontology

journal homepage: http://www.sgecm.org.tw/ijge/

Special Issue

Remaining Healthy and Independent by Age Group among a Florida Village Sample – A Convergent Mixed Methods Study

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ARTICLE INFO

Accepted 6 July 2019

Keywords:
Village-to-Village (VtV),
aging-in-community,
remain independent at own home,
healthier life,
older adults

SUMMARY

Background: Community-based models providing social programs have the potential to facilitate older adults aging in place. Village programs, started in 2001, is an emerging consumer-driven grassroots network that aims to promote aging-in-community through a combination of social engagement, member-to-member support, and collective bargaining for services in their neighborhood communities. This study examines perceived abilities to remain independent and living a healthier lifestyle by age group among a Florida village older adult sample.
Methods: A mixed-method convergent study design was used. Validated measurements on remaining independent (RI) and healthier lifestyle (Faith, Food, Fitness, Focus, and Friends) were used. Data were analyzed by age: pre-old (< 64; 23%), "young old" (65–74; 41%), "old" (75–84; 29%), and the "oldest-old" (85+; 7%). Qualitative data on aging-in-place related barriers and services recommended were analyzed via open, axial, and selective coding.
Result: Ninety-six older adults from two Florida villages participated; with 79% females, 91% whites, 86% had college education, and 46% living alone. Reliabilities of the RI (alpha = .81) and healthier lifestyle profile scales (alphas ranged .76 to .92) were both satisfactory. The "young old" scored higher on RI than the "old" (p = .009) and the "oldest-old" (p = .009). The "young old" also scored higher on FAITH than the pre-olds (p = .029). Qualitative findings showed barriers varied by age, yet participants regardless of age desired social connections.
Conclusion: The study's quantitative and qualitative data provide compliment insights. More village studies and larger study samples are recommended. Study provides evidence of the potential positive impact village programs have among their members.

1. Background

1.1. The graying population & desires to aging-in-community

The U.S. current older adult population (age 65 and over) has increased to over 14% making American an "aged society." The older adult population is estimated to grow to over 21% in 2040, which will make American a "super-aged society".[1] Data show that over 90% of the older adults prefer aging with quality of life via continue staying in their own homes as long as possible.[2] Centers for Disease Control and Prevention defines age in place as "the ability to live in one's own home and community safely, independently, and comfortably, regardless of age, income, or ability level".[3]

1.2. Village model as a promising approach promoting aging in place and community

Community-based models providing social and supportive programs have the potential to improve older adults remaining independent and social connections as they aging in place. Some of these community-based models include modern cohousing and livable communities, which mainly focus on planning efforts to change community's physical and social infrastructures.[4] Modern cohousing provides a form of collaborative housing to build social contact among community members while preserving and respecting individual privacy.[5] A livable community provides affordable and appropriate housing and transportation options, and offers supportive community features and services. These resources intend to enhance personal independence, social engagement and allow residents to age in place or community.[6] (AARP, n.d.).

Besides these intentional government or community-initiated program efforts, village programs, started in 2001, is an emerging consumer-driven grassroots network that aims to promote aging-in-community through a combination of social engagement, member-to-member support, and collective bargaining for services in their neighborhood communities.[7] Aiming to promote aging in place among older adults,[8] villages provide trained volunteers and paid staff to connect members with free, low cost, or discounted services as needed, as well as coordinate village-wide programs and activities.[7] Village model is a promising aging-in-community option

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especially for middle-income older adults who are often not qualified for public or government-supported programs.[8] Maintaining independence at own home has been found as one of the core components of successful aging.[9] Meaningful social interactions are also critical in the lives of older adults to prevent isolation as they aging in place or community.[10] A survey conducted among 282 active village members found that one half of the respondents reporting that the village improved their quality of life, and they are happier, healthier, talked to more people and feel less lonely.[9] Such village programs may provide alternative AIP solution giving the increasing government financial challenges caused by the increasing aging population.[1]

1.3. The age factor

Older adults are diverse in many ways. In recognizing the diversity within the older adult population, the current study classified older adults into the "young old" (65–74 years), the"old" (75–84 years), and the "oldest-old" (85+ years).[11] Indeed, age factor is among one of the most significant factors influencing older adult's likelihood to aging in community.[12] Although village programs have been shown effective at supporting aging in place through improving people's quality of life, reducing social isolation, improving ability to live independently, little is known about how remaining independent or healthier life might differ as one aging in place. Currently there is lack of studies examining how older adults in different age groups perceive their ability to remaining independently at own home or community, or their overall lifestyle in old age from a holistic perspective.

1.4. Purpose

The purpose of this research study examines how perceived abilities to remain independent (RI) at own home and live a healthier lifestyle differ by age groups among members living in communities with village program supports. Healthier lifestyle is examined from five comprehensive dimensions including Faith, Food, Fitness, Focus, and Friends to provide a holistic understanding.[13] This study pilot tested this easy-to-use lifestyle profile with evidence-based research data to help future researchers and practitioners examine essential dimensions key to a healthier lifestyle for healthy aging.

Researchers can gain more in-depth understanding of how RI changes as one aging, as well as how the five important dimensions towards healthier lifestyle for healthy aging vary in different age-group for age-tailored services and program development. Social and health professionals working with older adults can be better prepared to serve the rapidly growing and aging older adult population as they seek to healthy aging in community. Policy makers can make more informed decision on age-tailored policy and services to facilitate independence and healthy aging. Finally, the 24-item validated scale on healthier lifestyle can serve as an easy to implement tool to assess and evaluate the five critical dimensions key to quality and healthy aging.

2. Methods

2.1. Sample

The current study invited members and volunteers from two Florida villages, both were members of the Village-to-Village Network (VtVN), to participate in the study survey. Coordinators from each village program helped spread the words about the study and also help members with survey completion as needed. A total of 96 members voluntarily participated in this 30 min. survey (about 80% response rate). This study was approved by the PI's institutional human subject review board.

2.2. Measures

This study examined the level of perceived abilities to remain independent at own home and five-dimension towards a healthier lifestyle among members living in two Florida village program supported communities. In addition, qualitative questions were used to explore deeper on barriers, services used, and services recommended for healthy aging in place among community-dwelling older adults.

2.2.1. Remain independent (RI) at own home scale

RI was a 3-item research tested scale used in a recent village study (range 4–12, Cronbach's alpha = .660).[9] The scale was calculated by summing scores to participants' agreement level with three statements: "I have an easier time taking care of myself than I used to," "I have an easier time taking care of my home than I used to," and "I am more likely to be able to stay in my own home as I get older".[9,14]

2.2.2. Healthy Lifestyle Profile Daniel Plan (DP-5)

A 24-item scale measuring five-dimension essential to healthy lifestyle, Faith, Food, Fitness, Focus, and Friends, adapted from a faith-based healthier life program DP-5, was used as lifestyle profile measure (DP-5). In the current study. Items were measured using 5-point Likert scales, with 5 items in each dimension except Friends dimension which had 4 items (see Table 1 for detailed item description). Due to a significant portion of the study participant lived alone or were widowed, the item originally was included in the Friend dimension, "relationship with my significant other" was excluded in the current study. The DP-5 measurement is first research tested in the current study among a village older adult sample. All the five healthier life dimensions showed satisfactory reliabilities, with Cronbach's alphas ranged .78 to .92, Corrected Item-Total Correlation (CITC) ranged .405~.886 from the current village participants.

2.2.3. Qualitative measures

Three qualitative open-ended questions were also asked in the survey to gain deeper understanding of factors related to aging-in-community among village program members. The qualitative questions asked: (1) "What are some of the barriers you have towards healthy aging in your current house?" (2) "What are some of the services or programs you are currently using to help you healthy aging in your current house? (e.g. personal care / housekeeping / transportation / shopping & errands / financial management / medication management / etc.)" and (3) "What are some of the services or program you would like to see to help you healthy aging in your current house? Please describe."

2.3. Data analyses

Descriptive statistics were used to describe the study sample. Cronbach's alpha was calculated to measure its internal consistency of the RI and PD-5 scales. In addition, ANOVA analyses were used to compare RI and DP-5 among the different age groups. Bonferroni procedure was then used for post-hoc correction multiple-comparisons between groups if ANOVA statistics showed significant differences among groups. Mean plots were also used to help view visually how RI and DP-5 were different by age groups. Qualitative data on AIP related barriers and services recommended were ana-

lyzed via open, axial, and selective coding among participants enrolled in the two village programs to gain deeper insights on AIP related issues. Results were interpreted via considering both the quantitative statistics along with qualitative code / themes identified. All data were de-identified before analyses.

3. Results

A total of 96 village members and volunteers participated. About 79% were females, 91% were whites, 56% were married, 86% had college education, and 46% living alone. Mean age was 70.7 (SD = 10.10) years, with 25.5% in pre-old age, 38.3% in young old, 28.7% in old old, and 7.4% in the oldest old age groups.

The RI scale showed satisfactory reliability (Cronbach's alpha of .81; CITC ranged .447~.811). Majority of the participants rated neutral on RI (scale item mean of 3.35 on a 5-point Likert scale). All the five healthier life dimensions showed satisfactory reliabilities, with Cronbach's alphas ranged .76 to .92 (CITC ranged .423~.877). Overall participants scored high on FAITH, FOOD, FOCUS, and FRIEND, with scale item means of 3.92, 3.87, 4.20, and 4.19, respectively. FITNESS was scored lower with scale item mean of 3.46 (Table 1).

Results showed RI were significantly varied by age groups (p = .002). Bonferroni post-hoc tests found that the "young old" scored higher on RI than the "old" (12.20 vs. 8.94; p = .009) and the "oldest-old" (12.20 vs. 9.00; p = .009). Among the five essential dimensions lifestyle profile, FAITH or perceived relationship with God was the only dimension that showed statistically significant (p = .011). Bonferroni post-hoc tests showed that "young old" also scored significantly higher on FAITH, compared with the pre-olds (20.62 vs. 17.59; p = .029). Although RI was significantly decreased as one age, the other four essentials of lifestyle dimensions (FOOD, FITNESS, FOCUS, and FRIENDS) did not show statistically significant by age group (Table 2 & Figure 1).

Qualitative data were also analyzed to gain deeper understanding on barriers towards aging in community faced by older adults in different age group to help shed light on the quantitative findings. Overall results showed that pre-olds were still active and needed very few services. The "young old" started having some mobility issues but still maintained social activities. The "old" voiced difficulty to keep up with property management and housekeeping chores, more concerns about mobility/mental health and not able to aging-in-place, yet still desired social activities. The "oldest-old" had most concerns about health issues (wheelchair bound, poor eyesight, memory) and cost of caregivers, needed most personal care, companionship, and meal services, and still want to stay socially connected. Overall, fall prevention and social opportunities were suggested to help healthy aging. There were also some significant concerns with the quality of government supported elder meal programs and the work ethics of paid home health workers. Participants voiced strong needs for dependable caregivers or home aids. Overall members appreciate how the village program kept them connected, and provided help and services when needed. Participants overall also showed strong desire to stay engaged and connected across different age group.

Table 1
Reliabilities of the RI and DP-5 Scales (FAITH, FOOD, FITNESS, FOCUS, & FRIENDS) (n = 96).

Item description	Mean (SD)	CITC	Alpha if deleted
(RI-1) I have an easier time taking care of myself than I used to.	3.23 (.964)	.811	.576
(RI-2) I have an easier time taking care of my home than I used to.	3.12 (1.087)	.737	.635
(RI-3) I'm more likely to be able to stay in my own home as I get older.	3.70 (1.101)	.447	.940
Remain Independence (RI) Scale (3-item)	**Item mean = 3.35**	**Cronbach's alpha = .811**	
How satisfied are you regarding the following life areas:			
(FAITH-1) Relationship with God.	3.80 (.979)	.738	.870
(FAITH-2) Sense of meaning & purpose in life.	4.07 (.889)	.669	.885
(FAITH-3) Spiritual practice (prayer / worship / meditation).	3.70 (1.070)	.821	.851
(FAITH-4) Spiritual growth.	3.75 (1.026)	.877	.836
(FAITH-5) Giving to others.	4.28 (.798)	.603	.898
FAITH Scale (5-item)	**Item mean = 3.92**	**Cronbach's alpha = .892**	
(FOOD-1) I fill (& eat) at least half of my plate with a variety of F&V.	3.90 (.900)	.591	.693
(FOOD-2) I eat lean protein with every meal.	3.73 (.946)	.525	.714
(FOOD-3) I drink at least 8–10 glasses of fluid a day.	3.66 (1.143)	.423	.758
(FOOD-4) I choose healthy fats (veg oils, nuts, avocados, & fish).	4.02 (.960)	.551	.705
(FOOD-5) I eat a healthy nutritious breakfast daily.	4.02 (1.005)	.561	.700
FOOD Scale (5-item)	**Item mean = 3.87**	**Cronbach's alpha = .764**	
(FITNESS-1) My body (appearance / weight).	3.34 (1.147)	.664	.923
(FITNESS-2) My cardiovascular endurance.	3.52 (1.119)	.844	.886
(FITNESS-3) My strength.	3.47 (1.148)	.853	.884
(FITNESS-4) My flexibility.	3.30 (1.140)	.877	.879
(FITNESS-5) My health.	3.68 (1.042)	.701	.914
FITNESS Scale (5-item)	**Item mean = 3.46**	**Cronbach's alpha = .916**	
(FOCUS-1) Mental attitude.	4.29 (.753)	.743	.836
(FOCUS-2) Achievement of personal goals.	4.07 (.776)	.708	.845
(FOCUS-3) Peace of mind.	4.01 (.868)	.793	.823
(FOCUS-4) Gratitude and thankfulness.	4.50 (.623)	.541	.881
(FOCUS-5) Ability to handle mistakes or failures.	4.13 (.767)	.731	.839
FOCUS Scale (5-item)	**Item mean = 4.20**	**Cronbach's alpha = .871**	
(FRIENDS-1) Relationships with my family.	4.18 (.943)	.652	.787
(FRIENDS-2) Relationship with my friends.	4.26 (.728)	.767	.723
(FRIENDS-3) Relationship with others (neighbors or co-workers).	4.04 (.763)	.654	.772
(FRIENDS-4) My communication skills.	4.28 (.636)	.557	.816
FRIENDS Scale (4-item)	**Item mean = 4.19**	**Cronbach's alpha = .829**	

Notes: RI = Remain independent; DP-5 = Daniel Plan (5-domains); SD = standard deviation; CITC = Corrected Item-Total Correlation; F&V = Fruits & Vegetables.

Table 2
One-way ANOVA analyses on RI and DP-5 by age groups.

Scale name (scale mean / SD)	Pre-old (≤ 64 yrs)	Young old (65–74 yrs)	Old old (75–84yrs)	The oldest (85+ yrs)	p-values
RI-3 (mean = 10.07; SD = 2.696)	9.81 (2.228)	12.20 (2.178)	8.94 (2.363)	9.00 (3.266)	.002*
FAITH-5 (mean = 19.60; SD = 4.008)	17.59 (3.750)	20.62 (3.822)	20.44 (3.856)	17.33 (3.882)	.011*
FOOD-5 (mean = 19.33; SD = 3.541)	18.35 (3.712)	19.71 (3.331)	19.56 (3.755)	20.00 (3.082)	.487
FITNESS-5 (mean = 17.31; SD = 4.850)	15.70 (4.695)	18.74 (4.686)	17.04 (4.792)	16.71 (5.438)	.127
FOCUS-5 (mean = 21.00; SD = 3.101)	20.70 (3.154)	21.40 (3.345)	20.78 (3.042)	20.80 (1.304)	.815
FRIENDS-4 (mean = 16.76; SD = 2.505)	16.13 (2.768)	16.97 (2.781)	16.74 (1.913)	18.20 (1.643)	.344

* Remain Independent (RI) - "Young old" scored higher on RI than the "Old" and the "Oldest-old"; FAITH-5: "Young old" scored significantly higher compared with the Pre-olds.
* $p < .05$.

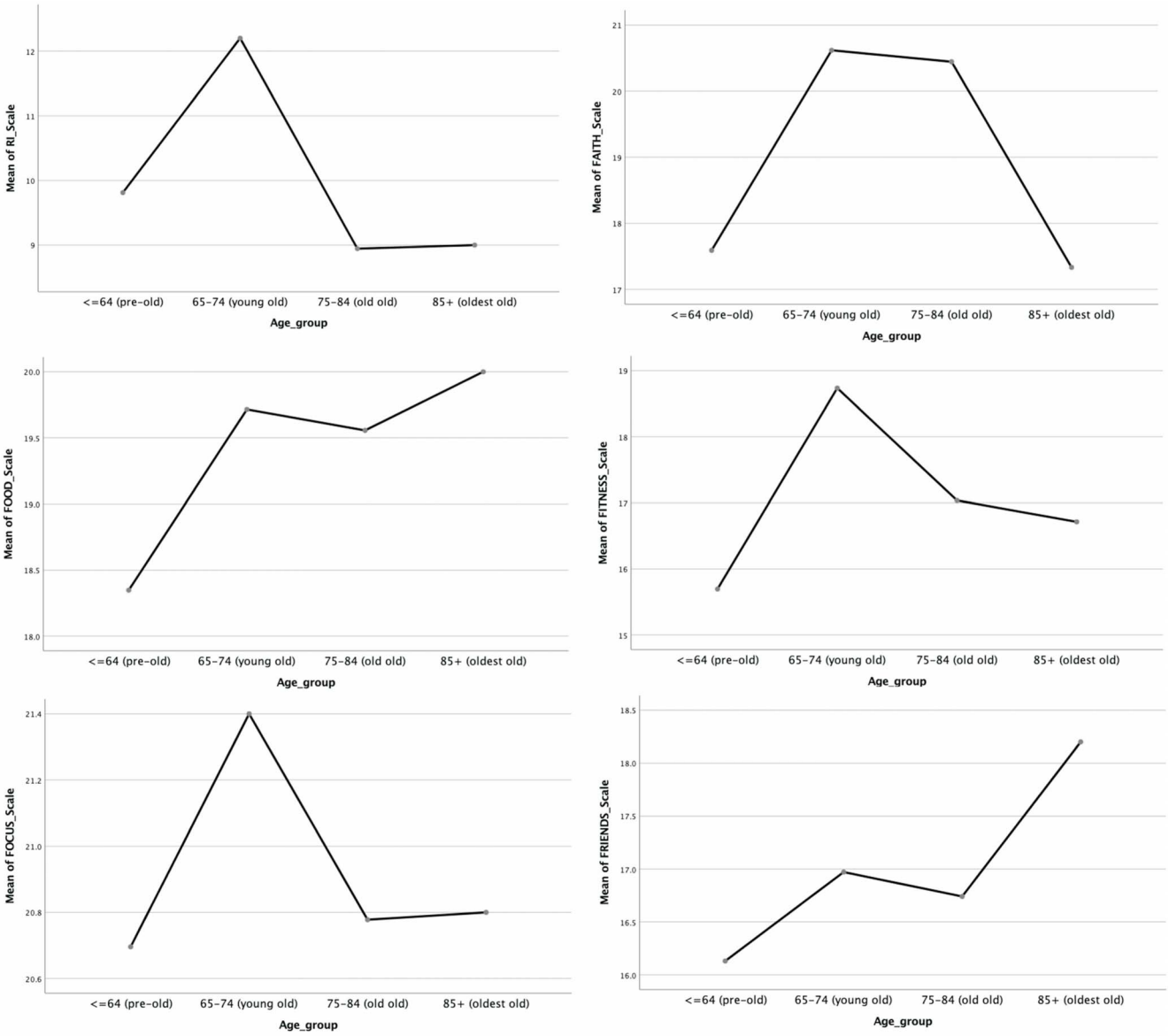

Figure 1. Mean plots of RI and DP-5 by age groups among village members (n = 96).

4. Discussion

Participants in this study were majority white, female, and had a college education. These demographic characteristics were similar to previous village studies.[9,15] Majority of the study participants rated neutral on RI (scale item mean of 3.35 on a 5-point Likert scale). In Graham's village study which also measured RI, data showed their sample's RI scale item mean score was 2.46 (7.38/3),[9] somewhat lower than our current study sample. One potential reason could due to participants were older in Graham's study with 41.5% in the "old" (75–84 years) and 30.1% in the "oldest-old" groups (85+ years).[9] Current sample also found that the "young old" scored higher on RI than the "old" (12.20 vs. 8.94; p = .009) and the "oldest-old" (12.20 vs. 9.00; p = .009). These findings were consistent with the United States of Aging Survey indicating reported independency declines as one getting older.[16] Furthermore, the current

preliminary qualitative findings support our quantitative results showing that the "young old" are still active and independent at home than the "old" who showed more needs related to housekeeping and management; and the "oldest-old" who may suffer multiple health issues.

The current quantitative data also showed faith or relationship with God was an important dimension to exam further by age group. Our data showed that the "young old" scored significantly higher on FAITH, compared with the pre-olds (20.62 vs. 17.59; p = .029). Although all five essentials are important to healthier lifestyle, Faith and Friends in particular, have been pointed out as two key elements which make participants benefit more.[13] Consistent with current data, although from a modest sample, our significant quantitative findings on faith and similarity on needs to be connected (friends) across different age group provide some evidence-based data to support continued future research. To our knowledge, this is the first study using DP-5 essentials to exam lifestyle profiles from a holistic perspective among community-dwelling older adults. Data showed satisfactory internal consistencies of the subscales as well as new insights on how these essentials differ or similar by age groups. Future studies and larger samples are recommended to continue exam these essential lifestyle profile and confirm study finding.

The mean plots of the healthier lifestyle essentials showed that overall FOOD remained high across age group. FITNESS decreased as one age, but not significant. FOCUS seemed highest in the "young old." Yet, the "old" and the "oldest-old" scored similar as pre-old. And although not statistically significant, the oldest olds scored FRIENDS the highest, indicating the potential impact village program and services might produce which warrants further investigation. Current data showed members in the village programs scored similar high on FOOD, FOCUS, FITNESS, and FRIENDS point to the potential positive impact of the supports and services provided among village members. Larger village studies are encouraged to confirm these findings.

The current study is limited to a convenience cross-sectional sample of two Florida villages with relatively homogeneous demographics (majority white and college education). In addition, additional variables beyond the age factor might influence the RI and lifestyle profiles, which were beyond the scope of the current study and warrant future investigations. In addition to barriers overall, future research might also consider adding prompts to specifically explore the five essential dimensions of lifestyle towards healthy aging, to better understand quality of life needs among community-dwelling older adults in different age group as they aging in place.

To sum, this study provide data on remaining independent at own home (RI) and lifestyle profile from five essential dimensions among community-dwelling older adults by different age group. Data showed the "young old" maybe the prime age group enjoying RI and benefits of village program, while the "old" and the "oldest-old" may need further attention. In addition, the "young old" also had higher FAITH scores indicating closer relationships with God comparing with pre-old. Village program coordinators might consider encouraging deeper social engagement among the "young old" members, while providing more housekeeping and maintenance related services options among the "old", and pay special attention on the healthcare or personal care services referrals among the "oldest-old". Companionship for older age members and additional home help including meal services are critical. To address the significant concerns of the quality and ethics of some of the government-subside home helpers or healthcare workers, village program may extend their list of resources on alternative, affordable, and dependable caregivers or home aids. Age-tailored social activities and services for older adults in different age group while also considering their overall healthier lifestyle profile and ability to remain independence needs continued research. This is the first study measuring and examining RI and the healthier lifestyle profile (DP-5) among village older adults. This easy to administer and validated DP-5 provides a new way to measure older adults' lifestyle profile from a holistic perspective. These validated measures have implications on evaluating older adult health promotion programs, as well as longitudinally monitoring Village members' healthy lifestyle status as they aging-in-community. Continued attention is also needed for adapting and addressing the changing needs as members aging in the community. The study's quantitative and qualitative data provide compliment insights to the research issues. More village studies and larger study samples are recommended. Study provides promising evidence of the potential positive impact village programs and services have among their members. Continued efforts are needed to study and demonstrate the impact of village programs and services comparing with older adults in alternative community-based programs or among non-village members.

Conflict of interest

There is no conflict of interest.

Acknowledgements

This study is funded by the faculty PI's research grant from the University of Central Florida, Orlando, FL. The author appreciates the strong support from the executive director Gloria Niec from the Celebration Foundation, Thriving-in-Place program manager May Pat Rosenthal, and Annette Kelly Chairperson, Board of Directors from the Neighbors Network for their help with data collection coordination. The author is in debts to all the study participants for their time and input on this study.

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