



PARTICIPATION, BARRIERS AND PREFERENCES OF SENIOR CITIZENS ON PHYSICAL ACTIVITIES



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ABSTRACT

Article History

Received: 20 July 2018

Revised: 28 August 2018

Accepted: 5 October 2018

Published: 2 November 2018

Keywords:

Barriers

Participation

Physical activities

Preferences

Senior citizens.

This study was conducted with senior citizens in the municipality of Siniloan, Laguna, Philippines. The purposes of this study were to determine the level of participation, barriers and preferences of senior citizens on physical activities as basis in developing comprehensive fitness program designed for them. The study utilized descriptive survey design using stratified and random sampling techniques. The study revealed that only 35% of the respondents achieve the minimum recommended physical activity as prescribed by World Health Organization. Results also show that lack of time is the main concern in physical activity participation and other important concerns were social influence, lack of energy, lack of willpower, and fear of injury. Fitness walking, running, jogging and zumba were the most preferred activities of senior citizens. This study suggests that walking, running, jogging and Zumba become part of the physical fitness program for senior citizens in Siniloan, Laguna.

Contribution/ Originality: This study documents the participation, barriers and preferences of senior citizens on physical activities to develop physical fitness suitable to them. The developed physical fitness for senior citizens may help them to engage in different physical activities for a healthy living.

1. INTRODUCTION

Studies have shown the numerous benefits of engaging in physical activities including prevention of age-related diseases (Reiner *et al.*, 2013) improvement of quality of life and mood (Penedo and Dahn, 2005) and protection against stress-related diseases (Rimmele *et al.*, 2007). For older adults, engagement in physical activities is all the more important as this can greatly improve their overall physical health especially in terms of maintaining their muscle mass and physical performance (Nelson *et al.*, 2007).

On the other hand, lack of engagement in sufficient levels of physical activity has been linked to the development of chronic health problems such as chronic musculoskeletal complaints which is common among the working especially office workers. Musculoskeletal symptoms in the working population can result to reduced effectiveness at work and to increased absence at work. Moreover, as has been mentioned earlier, stress may negatively affect people who do not regularly engage in physical activities which can also affect their quality of work.

In view of the recognized benefits of engaging in physical activities, it is recommended that older adults should engage in sufficient levels of physical activities. One way to encourage them to engage in physical activities is to develop community-level physical activity programs especially designed for adults aged 60 years and older. Engaging in group activities may be more motivating for them instead of exercising on their own (Cyarto *et al.*, 2008). Furthermore, it has been established that social support is an important factor in reducing stress (Dela Cruz and Urbiztondo, 2008) thus, participating in group exercises can benefit the older adults' social well-being since they are able to interact with other participants.

To be able to design effective community-level physical activity programs, it is important to study the participants' motivation perspectives, such as level of participation and perceived barriers (Ferrand *et al.*, 2014). However, there is an apparent lack of studies on the perceived barriers and levels of physical activities of older adults in the Philippines. Thus, this study aims to assess the current level of physical activity participation and the perceived barriers to physical activity of older adults living in Siniloan, Laguna in order to develop a fitness program for them.

1.1. Objectives

This study aims to determine the current level of physical activity participation, perceived barriers to physical activity and the preferences of senior citizens living in Siniloan, Laguna to develop a fitness program for them.

Specifically, the objectives of the program are to:

1. Determine the participants' current level of physical activity participation in terms of the types of physical activities they participate in;
2. Determine the respondents' perceived barriers to participating in physical activities;
3. Determine the respondents' physical activity preferences; and
4. Develop a physical fitness program for senior citizens living in Siniloan, Laguna.

2. LITERATURE REVIEW

There have been several studies assessing the level of physical activity of various groups ranging from young children to employees to older adults (Madanat and Merrill, 2006; Marilag and Rola, 2012; Ceria-Ulep *et al.*, 2013; Cramm and Lee, 2014). In the US, the Center for Disease Control and Prevention (CDC) regularly collects and analyses data related to physical activity. According to the latest report published on their website, less than half of the Americans achieve the recommended physical activity participation level (Prevention., 2014). Determining the physical activity preferences of a specific age group is important as it has been shown that different age groups prefer different types of activities.

In 2002, Fromel, Formankova, and Sallis studies the physical activity preferences of children aged 10 to 14 years old in the Czech Republic. One hundred eighteen (118) girls and one hundred twenty-seven (127) boys were examined over a period of five (5) years beginning when the subjects were ten (10) years old. Results of this study showed that girls and boys have differing physical activity preferences. Girls generally preferred activities with aesthetic orientation or activities that require aesthetic performances through movement expression with music such as dancing and skating. Boys, on the other hand, prefer fitness activities with emphasis on development of strength, endurance and speed such as sports games, hiking and cycling. However, it was found out that both girls and boys prefer swimming as a form of physical activity. The authors believe that studying children's physical activity preferences, especially gender-specific differences in preferences, is important in the development of physical education curricula in schools (Frömel *et al.*, 2002).

Johnson and Bungum (2008) examined the physical activity preferences of the so-called "baby-boomers". The study involved two methods – survey and interviews. For the survey, the author distributed the survey to the respondents mainly through email. The survey-questionnaire was developed and pilot-tested by the author which

includes 33 items, and took 20 minutes to complete. It included questions on the demographic profile of the respondents, the perceived past, present and future levels of participation and interest of the respondents in participating in physical activity, and the perceived barriers to participating in physical activities. For the interview, among the 16 scholars contacted, 5 agreed to participate for the interview. Results showed that most of the respondents prefer or currently participate in walking and traveling as physical activities. When asked on the items that hinder them in participating in activities, most of the respondents indicated time management as a frequent barrier (Johnson and Bungum, 2008).

In Belza *et al.* (2004) assessed the perspectives of 71 older adults from different cultures including American Indian/Alaska Native, African American, Filipino, Chinese, Latino, Korean, and Vietnamese through focus groups conducted in the participants' native language. Results showed that older adults believe that physical activity programs should foster relationships among participants; provide culture-specific exercises; and involve older adults in the program development among others (Belza *et al.*, 2004).

In the Philippines, however, similar surveys are not conducted regularly though there are some studies that assessed physical activity levels of various groups. In 2012, Marilag and Rola surveyed 261 older adults living in Los Baños, Laguna using the International Physical Activity Questionnaire (IPAQ) and the short form of the Rand Medical Outcome Study Health Survey to determine the levels of physical activity engagement. Results showed that their level of physical activity is moderate to low with only 13% perceived to have a high level of physical activity (Marilag and Rola, 2012).

3. MATERIALS AND METHODS

3.1. Research Design

As per the Office of the Senior Citizens Affairs (OSCA) in Siniloan, Laguna, there are 3,500 registered senior citizens in the province distributed among its 20 barangays (Table 1).

Table-1. Distribution of registered senior citizens and respondents per Barangay in Siniloan, Laguna.

Barangay	Population	Sample	Per cent Sampled
Acevida	160	23	14%
Bagong Pag-asa	105	15	14%
Bagumbarangay	70	6	9%
Buhay	124	17	14%
Burgos	262	37	14%
G. Redor	87	12	14%
Gen. Luna	206	31	15%
Halayhayin	400	62	16%
I. Mendiola	473	49	10%
JP Rizal	104	2	2%
Kapatalan	159	0	0%
Laguio	51	9	18%
Liyang	59	0	0%
Llavac	115	8	7%
Macatad	164	7	4%
Magsaysay	118	15	13%
Mayatba	41	0	0%
Pandeno	307	39	13%
Salubungan	219	31	14%
Wawa	276	35	13%
TOTAL	3500	398	11%

Source: (OSCA, 2018)

To compensate for the variation in senior citizen population size per barangay, a stratified cluster sampling approach was used. However, three (3) of these barangays – Liyang, Mayatba, and Kapatalan – are in upland areas where transport is more difficult. Thus, only the barangays with the easiest road access were included in the survey.

A listing of all the senior citizens living in these barangays was obtained. The respondents were randomly selected systematically from this listing. A total of 398 questionnaires were analysed.

3.2. Instrument

The study used a three-part questionnaire. The first part of the questionnaire contains the short version of the International Physical Activity Questionnaire (IPAQ) to assess the level of physical activity engagement of the participants. The IPAQ contains seven (7) questions pertaining to the number of days and minutes the respondents engage in light-, moderate-, and vigorous intensity activities as well as the number of days and minutes they spend sitting. The IPAQ guidelines for data processing prescribed three levels of physical activity – health-enhancing physical activity (HEPA) active, minimally active, and insufficiently active. Table shows the proposed criteria for each level.

Table-2. Levels of physical activity (IPAQ, 1999).

HEPA Active	Minimally Active	Insufficiently Active	No reported physical activity
3 or more reported days of vigorous-intensity activity with a minimum of 1500 MET-minutes/week; or 7 or more reported days of any combination of walking, moderate-intensity activity, and/or vigorous-intensity activity with a minimum of 3000 MET-minutes/week.	3 or more reported days of vigorous-intensity activity of at least 20 minutes per day; or 5 or more reported days of moderate-intensity activity or walking for at least 30 minutes per day; or 5 or more reported days of any combination of walking, moderate-intensity, and/or vigorous-intensity activity with a minimum of 600 MET - minutes/week.	Those who did not meet any of the above criteria but reported to have participated in at least one of the levels of physical activity.	Those who did not report any physical activity.

Source: (IPAQ, 1999)

The second part of the questionnaire is the Perceived Barrier to Physical Activity Questionnaire consisting of 21 questions adopted from the CDC survey. The respondents were asked the level of their attitude towards each statement by means of a 4-point Likert scale consisting of the following responses: 0 – Very unlikely, 1 – Somewhat unlikely, 2 – Somewhat likely, 3 – Very likely (Center for Disease Control and Prevention, 1999). Each statement falls into one of seven categories: lack of time, social influence, lack of energy, lack of willpower, fear of injury, lack of skill, and lack of resources or facilities. Responses to statement falling under the same category were totalled and then averaged. A mean score of below 2.0 indicates a “positive” response, meaning that they are unlikely to feel that the statement is a perceived barrier for them. On the other hand, a mean score of at least 2.0 and above indicates a “negative” response, meaning that they are likely to perceive that the statement is a barrier. A score of 5 or above in any category means that this is an important barrier for the respondents to overcome (CDC, 1999).

The IPAQ and CDC questionnaires were selected as these were already validated. The questionnaires were distributed to the participants and were retrieved by the enumerator. The data were then being encoded, tabulated, and analyzed. The third part of the questionnaire deals with the respondents’ physical activity preferences including questions on the types of physical activities they currently participate in and the physical activities they prefer to include in a physical fitness program for them. Their physical activity preferences were measured using a 5-point Likert rating scale as shown below.

Rating	Range	Verbal Interpretation
5	4.50 – 5.00	Strongly Agree
4	3.50 – 4.49	Agree
3	2.50 – 3.49	Neutral
2	1.50 – 2.49	Disagree
1	1.00 – 1.49	Strongly Disagree

Results from the questionnaire were used as input in developing a physical fitness program for senior citizens in Siniloan, Laguna.

4. RESULTS AND DISCUSSION

Out of the 398 respondents, 227 are female and 171 are male. Results show that 69% of the respondents engage in physical activity. This shows that majority of the senior citizens in Siniloan, Laguna are still physically active even though they are in their senior years.

Table-3. Distribution of Respondents' Levels of Physical Activity per Type.

Type of Activity	Male	Female	Total
Vigorous Activities	65	69	134
Moderate Activities	75	77	152
Walking	109	157	266
No Physical Activity	56	66	122

Source: Survey Result

Only 34% (134 out of 398) engage in vigorous-intensity activities such as heavy lifting, aerobics, digging, or fast bicycling and only 38% (152 out of 398) engage in moderate-intensity physical activities such as carrying light loads or bicycling at a regular pace. On the other hand, more than half of the respondents (67% or 266 out of 398) walk for at least 10 minutes at a time. This indicates that most prefer walking over the more strenuous activities due to their age. Moreover, 31% (122 out of 398) did not report any physical activity at all.

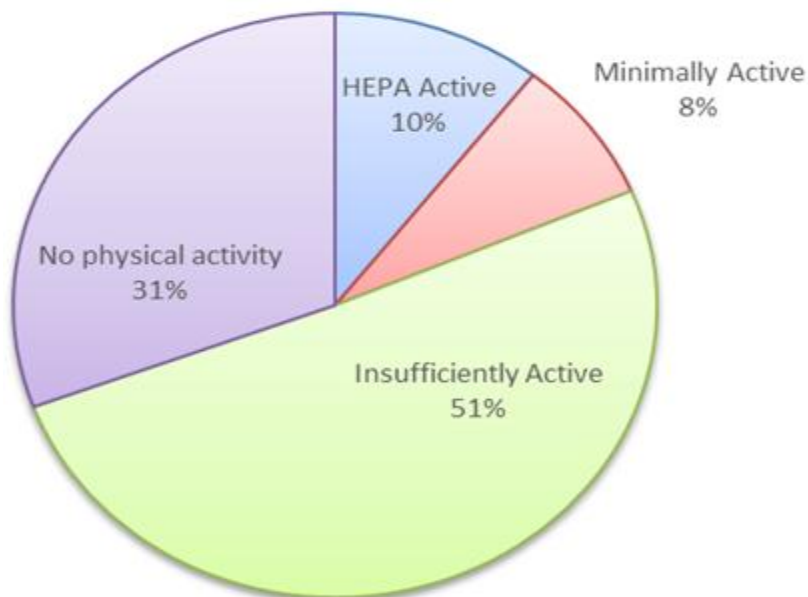


Figure-1. Respondents' levels of physical activity

Source: Survey Result

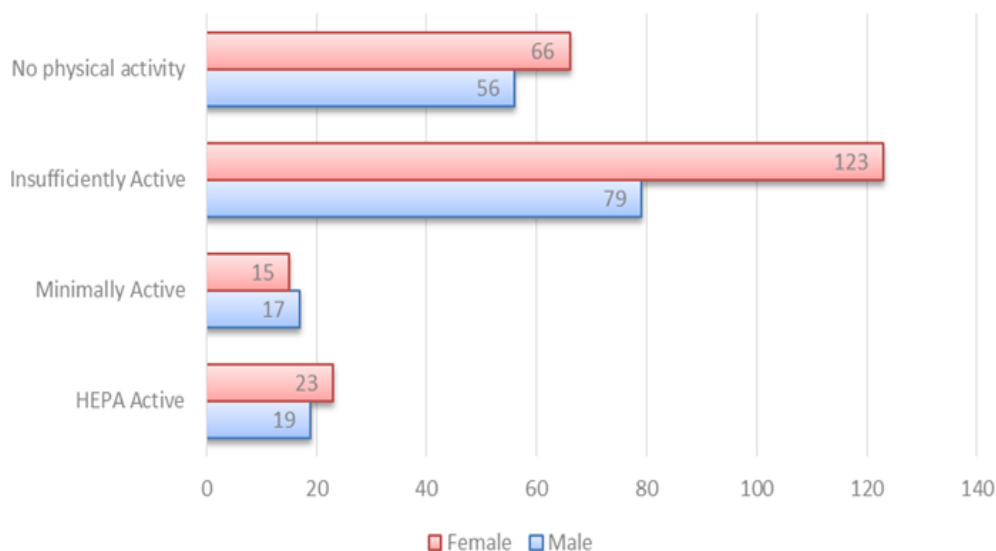


Figure-2. Respondents' levels of physical activity according to sex

Source: Survey Result

Figure 1 shows that more than half (51%) of the respondents are considered insufficiently active. According to the [World Health Organization \(2009\)](#) senior citizens should engage in at least 30 minutes of moderate-intensity physical activities five (5) days per week for a physical activity to have an impact to their overall health. Results indicate that though most of the respondents engage in physical activity their engagement does not reach the minimum public health physical activity recommendations and thus, does not contribute much to the improvement of their physical health.

Of the 398 respondents, only 10% are HEPA active and only 8% are minimally active. Thus, only 18% of the respondents achieve the minimum recommended physical activity as prescribed by WHO. This means that only 35% of the respondents achieve the minimum recommended physical activity as prescribed by WHO. Based on the results, there is higher percentage of physically active female respondents (40%) than male (29%).

In general, respondents reported an average of 4.35 days per week with 133.32 minutes per day doing vigorous-intensity activities, 4.12 days per week with 114.80 minutes per day doing moderate-intensity activities, and 4.95 days per week with 62.72 minutes per day walking. Meanwhile, respondents reported an average of 101.18 minutes per day sitting.

4.1. Perceived Barriers to Physical Activity

Although respondents scored low (less than 2) in all the barriers' survey, they, however, answered majority (20 out of 21) of the statements in a negative light. Results also show that the lack of time (with an average score of 5.04) is considered as the respondents' most important concern when it comes to participation in physical activities. Other important concerns are social influence (4.98), lack of energy (4.91), lack of willpower (4.98), and fear of injury (4.98) with average scores close to 5.0.

Male respondents scored more than 5.0 in all categories (see Table 4). This indicates that they perceive all these categories as barriers to their physical activity participation. Female respondents, on the other hand, scored less than 5.0 in all categories though all their scores are close to 5.0 with fear of injury (4.77) and lack of time (4.72) as their top concerns.

Table-4. Summary of responses on the senior citizen's perceived barriers to engaging in physical activity.

Perceived Barriers	Male	Female	Overall
Lack of time	5.47	4.72	5.04
Social Influence	5.40	4.67	4.98
Lack of energy	5.29	4.62	4.91
Lack of willpower	5.35	4.70	4.98
Fear of injury	5.25	4.77	4.98
Lack of skills	5.07	4.56	4.78
Lack of resources/facilities	5.04	4.44	4.69

Source: Survey Result

4.2. Physical Activity Preferences

In general, more than half of the respondents (87%) reported that the current physical activity they participate in is walking. This is followed by running/jogging and weight lifting. For female respondents, however, one of their top current exercises is Zumba. Meanwhile, results show that the respondents' top 3 most preferred exercise are walking, running/jogging, and Zumba. Most of the respondents (52%) answered that they get the right amount of exercise.

Table-5. Distribution of the physical activities that respondents currently participate in.

Exercise	Frequency	Percent	Rank
Weight lifting	74	18.59%	3
Walking	347	87.19%	1
Running/Jogging	86	21.61%	2
Swimming	36	9.05%	6
Dancing	51	12.81%	5
Aerobics	15	3.77%	7
Zumba	71	17.84%	4
Playing Team Sport	5	1.26%	8

Source: Survey Result

Table-6. Amount of exercise per week the respondents perceive they are getting.

Amount of Exercise	Frequency	Percent	Rank
Too little	173	43.47%	2
About right	207	52.01%	1
Too much	18	4.52%	3

Source: Survey Result

Table-7. Respondents' preferred exercise.

Preferred Exercise	Weighted Mean	Rank
Weight Lifting	2.46	5
Walking for Fitness	3.79	1
Running/Jogging	3.18	2
Swimming	2.70	4
Aerobics	2.38	6
Zumba	2.70	3

Source: Survey Result

5. SUMMARY OF FINDINGS

Based on the data gathered from the questionnaire, below are the answers to the objectives set.

1. Most of the respondents (57%) are female.
2. Only 35% of the respondents achieve the minimum recommended physical activity as prescribed by WHO. Based on the results, there is a higher percentage of physically active female respondents (40%) than male (29%).

3. Most of the respondents reported that walking is the exercise they currently participate in. This is followed by running/jogging and weight lifting. For females, however, one of their top current exercises is Zumba.
4. Although respondents scored low in all the barriers' survey, they, however, answered majority of the statements in a negative light. Results also show that the lack of time is considered as the respondents' most important concern when it comes to participation in physical activities. Other important concerns are social influence, lack of energy, lack of willpower, and fear of injury.
5. The top 3 most preferred exercise walking, running/jogging, and Zumba.

6. CONCLUSIONS

Based on the results from the survey, the researchers thus, proposed walking, running/jogging and Zumba as part of the physical fitness program for senior citizens in Siniloan, Laguna. To address the participants concern on time, the researchers developed the fitness program starting from light exercises and gradually levelling up to moderate to heavy exercises so the participants wouldn't feel an abrupt change in their regular schedules and routines.

Aside from the apparent general interest of the respondents to these physical activities, these also do not require additional facilities and/or resources to be implemented.

7. RECOMMENDATIONS

The researchers recommend the implementation of the Proposed Fitness Development Program for senior citizens of Siniloan, Laguna upon approval from the concerned officials/offices of the municipality.

The researchers based the design of the proposed Fitness Development Program on the three most preferred exercises from the survey-questionnaire – walking for fitness, running/jogging, and Zumba. Aside from the apparent general interest of the respondents to these physical activities, these also do not require additional facilities and/or resources for successful implementation.

Following is a brief outline of the proposed physical fitness program:

Program 1. Fitness Walking

- There are many benefits to walking. This includes reduced blood pressure and improved cardiovascular function. This also helps build muscle strength, endurance, and maintenance of healthier bones and joints.

Program 2. Running for Fitness

- This fitness guide is designed to get the participant to the point that can run 60 minutes at a slow, relaxed pace. This program is developed in a progressive manner wherein the participant begins with more walking than running and gradually evolves into more running than walking.

Program 3. Zumba Fitness

- Zumba is a great way to burn calories and lower your stress levels. To some extent, the dance workout even provides some toning benefits as well. The Latin infused dance burns between 300 and 650 calories per hour. With most classes being between 60 and 90 minutes long, it's easy to see that taking a class a few times a week can quickly add up to a significant calorie deficit and weight loss.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Contributors/Acknowledgement: Both authors contributed equally to the conception and design of the study.

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