A QUALITATIVE APPROACH TO UNDERSTANDING THE NEIGHBORHOOD ENVIRONMENTAL INFLUENCES ON ACTIVE AGING

Hanan Elsawahli¹, Faizah Ahmad², Azlan Shah Ali³

Faculty of Built Environment; University of Malaya; Kuala Lumpur; Wilayah Persekutuan 50603, Malaysia.

E-mails: hanan_mhe@hotmail.com , faiz@um.edu.my, asafab@um.edu.my

ABSTRACT

Numerous researches mainly in western countries have found that active aging is associated with a wide range of health benefits for older adults. Although research related to active aging has gained considerable interest, in Malaysia, older adults' active aging is still in its infancy. The crucial role of neighborhood characteristics as promoting active aging has led the WHO to adopt more comprehensive approaches by introducing 'Age-Friendly Cities' program. This study used a qualitative approach to explore the experience of older adults' active aging as influenced by neighborhood characteristics. The data explication centered on concept of active aging. Main themes emerged were: physical activity, facilitators to physical activity, and barriers to physical activity, accessibility, social interaction, and safety. The results show that older adults are sensitive with respect to perceived falling hazards due to poor lighting and poor walkway conditions. Regular maintenance is required to avoid restrictions upon their physical activity.

Keywords: Active Aging, Neighborhood Characteristics, Older Adults, Physical Activity, Qualitative Approach

1. INTRODUCTION

Active aging is mainly determined by lifestyle choices made by individuals. Physical activity & social interaction contribute to active & successful aging (Bengston, Silverstein, Putney, & Gans, 2009). Physical activity is essential for the prevention of chronic diseases such as diabetes, hypertension & heart disease. Moreover, it delays loss of independence & functional limitations (Hardy & Grogan, 2014). On the other hand, social interaction among older adults compensate a deteriorating mental health at an older age (Dill et al., 2010). Despite these benefits, the most sedentary age group in Malaysia remain the older adults aged 50^+ years (World Health Organization (WHO)- Malaysia, 2008).

The increasing number of older adults, with the high demands of social & health care has led to the global interest in the promotion & enhancement of active aging. The crucial role of

neighborhood characteristics as promoting active aging has led the WHO to adopt a more comprehensive approach by introducing 'Age-Friendly Cities' program (WHO, 2007). However, few studies in Malaysia focused on this topic. Given that aging is a global concern and that there is a need for a multi-disciplinary and international approach on the topic, this qualitative study aims to pursue a comprehensive perspective and to include lived experience pertaining to the essence of active aging in old age, in order to contribute to deepening the knowledge about what makes up active aging in old age in another part of the world. The qualitative research was designed to assess older adults' perception of their neighborhood environmental variables including opportunities for physical activity, through an in depth interview. Total expenditure on health by the public sector is 44.14% and 55.86% by private sector (M. WHO, 2008). Findings of this study may promote active aging and thus reduce both public and private sectors expenditure on medical care for the elderly and other age groups.

Increasing research showed the important role of the neighborhood environmental variables in explaining active aging (Alfonzo, Marlon, Day, McMillan, & Anderson, 2008). This qualitative study is based on the concept that the relationships between person and environment are important components of older adults' active aging (Walker & Mollenkopf, 2007). Therefore, this study describes the structure of the lived experience of active aging by older adults as outcomes of the physical-spatial environment. The physical spatial environment refers mainly to issues related to mobility and transportation of older adults in their neighborhood (Crombie et al., 2004). Many planning concepts have emerged to address issues of physical activity and social interaction as main variables contributing to active aging (Bengston et al., 2009), for example, co-housing, independent living communities, active adults community, and leisure oriented retirement communities (Durrett, 2009).

A large body of research explored the association of neighborhood design with physical activity among older adults (Fisher, Li, Michael, & Cleveland, 2004; Michael, Beard, Choi, Farquhar, & Carlson, 2006b; Michael, Green, & Farquhar, 2006a; Rasinaho, Hirvensalo, Leinonen, Lintunen, & Rantanen, 2006). The literature showed that juxtaposition of various types of land use and activities in the neighborhood (Handy, Boarnet, Ewing, & Killingsworth, 2002), proximity to destinations (Cummins, Macintyre, & Davidson, 2005), and adequate transportation system that connect individuals to places and activities (Handy et al., 2002) influence physical activity levels among older adults.

On the other hand, (King, 2008; Strath, 2007; Weiss, Maantay, & Marianne Fahs, 2010), argued that open spaces, street furniture and walkways encouraged social interaction among older adults. Also, (Ewing & Handy, 2009), suggested that access to recreational facilities, safe crossing at intersections, street connectivity, and shorter distances to destinations facilitated physical activity among older adults. Whereas, lack of adequate transport, lack of curb cuts, lack of ramps and presence of cul-de-sacs deterred physical activity among older adults (Crombie et al., 2004). Accessibility, also addresses issues of

way finding, and ease of navigation through the neighborhood for older adults (Aspinall P A et al., 2010). Furthermore, convenience refers to the older adults' general satisfaction with their neighborhood physical environment (Strath JS et al., 2012). Older adults perceive convenience which is the level of satisfaction with local services, adequate transport system, and neighborhood aesthetics to affect physical activity (David X. Marquez et al., 2014; Gauvin et al., 2008). Safety, is also an essential perquisite of the neighborhood physical environment for older adults (Strath, 2007; Weiss et al., 2010). Such literature has led to new terminologies in describing neighborhoods, for example, high-walkable neighborhoods and low-walkable neighborhoods (Saelens & Handy, 2008).

To date, the majority of research conducted on active aging has been in developed countries, mainly western countries which have different cultural, social and physical environmental characteristics that might influence older adults' active aging. In developing countries. particularly, Malaysia, there have been few qualitative studies exploring older adults perceptions 'neighborhood environmental physical activity behavior. pertaining to Furthermore, understanding these perceptions strengthen the perceived person-environment relationship for this age group. Such qualitative approaches represent a vital step to examine associations between physical activity and neighborhood environment, and allows for the perceptions contextual exploration.

Based on the above discussion, the main objective of this qualitative study is:

To explore perceptions of neighborhood environmental facilitators and barriers to physical activity among older adults.

Accordingly, the study investigated the following questions:

- 1. What are the lived experiences of older adults regarding active aging?
- 2. How can planners use these findings to develop aged-friendly neighborhoods?

2. METHODS

Accordingly, the researcher interviewed total of 12 participants (TTDI=7 and Taman Meru=5), as

more interviews added no more knowledge and insights. 66.7% of the participants were male: N=8, ranged in age from 62-74 years, 33.3% were female: N=4, ranged in age from 60-66 years.

To be included in the study, participants were required to meet the following criteria:

- 1. Participants had to be aged 60^{+} Years.
- 2. Be neighborhood dwellers.
- 3. Choose freely to participate in the study and share their experience.
- 4. Be able to communicate in English.

2.1 PARTICIPANTS' SELECTION PROCEDURE

(Polkinghorne, 1989) suggested 5-25 participants to develop experience possibilities. On the other hand, (Boyd, 2001; Cresswell, Hanson, Vicki, Plano, & Alejandro, 2007; Cresswell, Polano Clark, Gutmann, & Hanson, 2003) recommended a 10 participant sample size for a qualitative approach. (Saunders, Lewis, & Thornhill, 2009), argued that generalization in qualitative research represent individuals rather than theories, thus, interviews should be conducted till saturation of data is reached.

Participants were known to the researcher prior to the study from a questionnaire survey (N=365) on Determinants of Aged-Friendly Neighborhoods in Malaysia, and therefore, were purposively selected as they showed more knowledge and understanding on active aging during the survey. Participants were selected neighborhoods of highest elderly from population according to the last Malaysian census in 2010, namely: Taman Tun Dr Ismail (TTDI) in Kuala Lumpur, and Taman Meru in Ipoh. Interview data were obtained about older adults' active aging and their perceptions about their neighborhood environmental variables as facilitating or obstructing active aging. Face-toface interviews were conducted in the participants' home or community hall from March 2012 to June 2012. The researcher did not pay the participants for their participation in the study.

2.2 MATERIALS AND INTERVIEW QUESTIONS

The researcher briefed each participant on the study and outlined the requirement of successful

interviews, such as staying relevant to the topic. The questions for the participants were informed from relevant evidence from the questionnaire survey on Determinants of Aged-Friendly Neighborhoods in Malaysia and from previous research. Therefore, from the literature review the researcher could extract the following questions that could be used in both approaches:

- 1. What are the benefits of active aging?
- 2. What are the facilitators and barriers to physical activity? Does your neighborhood physical environment support physical activity?
- 3. Does your neighborhood provide programs that help you stay both physically and socially active?
- 4. What is your opinion about the physical and social aspects of aging?
- 5. Do you feel that physical activity and social interaction are less important as you age?
- 6. Do you possess any concerns about safety in your neighborhood?
- 7. Are you afraid to fall if you go out for a walk due to deteriorated walkways?
- 8. Do you possess fear of potential victimization?

2.3 THE STUDY

The researcher used a voice recorder to record each interview. The recorded data were transferred to the laptop to enable transcription. The participants were informed that they will be sent a final copy of the transcribed interview and thus, were encouraged to participate.

The corresponding author, who was doing the research as part of a research on "Determinants of Aged-Friendly Neighborhoods in Malaysia", conducted the interviews. The interviews were conducted during lunch time or after a community social meeting in the community hall. This gave it a more friendly and informal atmosphere and made the participants more relaxed in answering the questions. The researcher read out the interview questions after briefing them on the study and informed them of their right to withdraw at any time and at any point. The interview lasted on average about 45 minutes. After the interview ended, the participants were given a chance to comment before switching off the recorder. All the taperecorded 12 interviews were ready for transcription.

2.4 DATA EXPLICATION

The researcher transcribed all the interview data using participants' pseudonyms. The researcher analyzed the transcripts using thematic analysis (Cresswell et al., 2007). Each theme represented a different dimension of active aging as influenced by the neighborhood environmental variables. A list of significant statements was developed and presuppositions were bracketed while the researcher stayed true to active aging phenomenon as possible. The next step involved identifying themes that connected the various significant statements. The emerging themes were questioned and revised constantly. The researcher did not use any software for the data analysis. The first stage involved coding the transcript codes into thematic clusters. In the first stage, the researcher could identify12 themes from the quotes, for example, "exercise self and community benefits". The second stage focused on significant statements extracted from units of general meaning in order to redefine the constructs. This resulted in the emergence of more themes pertaining to physical activity and their neighborhood environment, such as, "easy to walk to the park for some physical activity". In the last stage, the researcher used selective coding, while constantly revising the significant statements identified in stage 2. This resulted in the emergence of more specific themes, for example, "I keep fit and maintain good health" and "I do physical exercise". Table 1 shows the themes identified at the three stages and significant statements are provided. The six themes identified in the 3^{rd} stage were eventually translated into a model of physical activity among older adults as influenced by the neighborhood environmental variables. All identified themes at the 3 stages were further checked by 5 coders to ensure their presence in the data. All the coders presented positive reports.

Themes/Stages	Example Quotes	Significant Statements	
1 st Stage: Data coding and reduction			
		D C 1 11 1	
Active aging	Active aging means that I exercise to benefit my health	Benefit health and	
	and involve in social activities to benefit my community	community	
Exercise	I care to exercise daily, and go out and have coffee with	Exercise daily, have	
	friends	coffee with friends	
Sedentary Life	I go out, meet friends, walking is good for maintain	Social engagement and	
	good health as I age, otherwise I will stay at home and	healthy aging	
	watch TV		
Attitude about social	When I have time I visit my neighbors and have tea	Visit neighbors, have	
interaction	together, I trust them	tea and trust	
Attitude about	I enjoy cycling every day to nearby destinations	Enjoy, cycling	
physical activity		Enjöj, öjönng	
Neighborhood	I can do my shopping at local shops, the park and	Shopping, park and	
motivations	worship facilities are also within walking distance	worship facility	
Neighborhood safety	The crime rate in my neighborhood is low, I feel safe	Low crime rate	
	walking	Low ennie rate	
Walkways safety	I have concern about falling, some walkways are either	Narrow & in poor	
	narrow or in poor conditions	conditions walkways	
Neighborhood accessibility	I can go to many places from my home, it is accessible	accessible	
		accessible	
Neighborhood	I can navigate quite easily through my neighborhood, it	Permeable	
permeability	is quite permeable	renneable	
Neighborhood	My neighborhood has no litter but the walkways have	No litter, cracked and	
maintenance	cracks and not even	uneven walkways	
Neighborhood	There are trees along the streets, parks, worship	Trees, park and worship	
aesthetics	facilities and other attractive buildings	facilities	
2 nd Stage: Delineating units of general meanings			

Table 1: The 3 StagesThemes

Feeling independent	Active aging means that I am busy doing something, for example I like to be independent and always go for my daily needs by myself and I cycle to everywhere, this physical activity keeps me active	Independent, cycle, and physical activity		
Positive experience of physical activity	Active aging means stay healthy; I enjoy cycling and going out talking to friends and people	Stay healthy, enjoy cycling		
Positive experience of social relations	I live in quite a strong community and I build up very good relations with neighbours,	Strong community, good relations		
Street connectivity	No walkways, falling while walking is a real concern that why I go to the park for walking or jogging	No walkways, park, walking or jogging		
Neighborhood programs	The community centre is always arranging programs both physical and social	Community center, programs, physical, social		
Neighborhood maintenance	The park facilitates physical activity but lack of maintenance and services are real barriers	Physical activity, lack of maintenance and services, barriers		
Neighborhood amenities	I cycle to get my daily needs I do not have shops or groceries nearby	Cycle, do not have shops or groceries nearby		
3 rd Stage: clustering ur	3 rd Stage: clustering units to form themes			
Active Aging	Active aging means that I keep fit and maintain good health and also have a social life not staying alone.	Keep fit, maintain good health and social life.		
Physical Activity	Physical activity has lots of benefits to my health, my heart, no high blood pressure or diabetes	Physical activity, health benefits		
Facilitators and barriers to physical activity	I think the park encourages people to go for a walk also the area is safe and no heavy traffic. Barriers are poor walkway condition or walkway is too narrow, lack of street benches discourage physical activity	Park, safety, and no heavy traffic. Poor walkway condition narrow walkways, and lack of street benches		
Accessibility	I can go from place to place quite easy and I have no problem to find my way	Easy going from to place & way finding		
Social Interaction	I do not visit each other regularly but we meet every day down the road while walking or in community hall and we always have a chat	Meet while walking, community hall and have a chat		
Safety	Safe, there are some house breaks and street snatches but the crime rate is relatively low in the neighbourhood. I usually go for a walk in the park and the park is very safe. No safety concerns while walking except of fall	Safe, low crime rate, safety concerns about fall		

ACTIVE AGING

Active aging was a strong influence, in describing active aging, the themes of physical activity and social activity appeared throughout as main factors in the older adults' experience of active aging. Participant 1 captured this when he stated:

'I care very much to exercise every day, I walk/jog and I always like to go to the cafe to meet my friends'

All participants talked in detail about the benefits of physical activity and social activity. According to their experience those who are physically active often become socially active leading to the concept of active aging.Participant 1 also recognized the importance of staying active at an older age:

'Active aging means that I keep fit and maintain good health and also have a social life not staying alone.'

Furthermore, participants who had functioning problems that limited their daily physical activity engaged in light physical exercise and enjoyed doing things they liked such as carving which could be incidentally physically active hobbies, and also participated in social activity. Participant 4 stated: 'After Morning Prayer I go back home and rest and then go and have breakfast with my friends, and then I go back home and spend most of my time carving. Because of my knee problem I cannot go for a walk or jog every day; I sometimes go for a walk with my wife. I drive to the area park then walk there because there are some seats if I get tired I can sit down. Sometimes I also help in some house maintenance.'

Consequently, the notion of active aging for these older adults was related to issues of physical activity that lead also to social activity. Although, participant 4 did not participate in daily physical activity, he was physically active within his physical limits, and this reflects his awareness to engage in physical activity behaviour as an important need of remaining active at an old age.

PHYSICAL ACTIVITY

Almost all participants had a routine physical activity attitude. The main concern in performing physical activity was maintaining good health that eventually lead to active aging. Participants were aware that physical activity lead to the decrease of serious chronic diseases that might be threatening their health and functioning, therefore, they were more likely to exercise daily. Participant 3 perfectly captured this by stating:

'Active aging means I stay healthy; physical activity has lots of benefits to my health, my heart, no high blood pressure or diabetes'.

Participant 3 also recognized the benefits of physical activity:

'Physical activity keeps me fit and enables me maintain good health, I cycle every day; although I have my son and daughter staying with me, I always perform all tasks by myself.'

Some of the participants attended structured exercise sessions, such as Tai-chi group, participant six was proud to be a member of the group, she stated:

'I am a member of the Tai-chi group, I enjoy going there, I feel so good and it keeps me active' Although the majority of the older adults did not attend structured exercise sessions, they enjoyed general physical activity such as cycling, walking to worship centres or to the shops and gardening. Participant 3 stated:

'Physical activity is good for my health and my heart, being engaged in daily physical activity gives me pleasure. I walk every day, cycle to get my daily needs; I also do the gardening and all house maintenance. My day is normally busy and I enjoy it.'

Participant 5 further captures this when he stated:

'Physical activity makes me stay healthy; I enjoy cycling and going out'

Positive perceptions about physical activity and its importance to their health elevated their mood and encouraged them to adhere to physical activity as much as they could even with some health and functioning limitations.

FACILITATORS AND BARRIERS TO PHYSICAL ACTIVITY

The neighborhood environmental variables had influences on physical activity among older Participants indicated that adults. the neighborhood park, the ease of way finding and safety motivated them to perform physical activity. Participants also indicated that poor walkway conditions, lack of street furniture and poor lighting discouraged them from going out. The participants agreed that provision of walkways, good Lighting and enhancing conditions of parks are among facilitators to walking. Conversely, lack of walkways, poor Lighting and bad conditions of parks deters physical activity. Participant 7 stated:

'I think if I have walkways in good conditions I will be encouraged to walk; poor Lighting and lack of shading path could be barriers'

Participant 9 also added:

'The Park facilitates walking but lack of maintenance and services are real barriers'

Participant 10 further stated:

'No heavy traffic and safety facilitates walking but lack of walkways, benches and shading are barriers.' The participants showed awareness of the neighbourhood environmental variables that facilitated /obstructed their physical activity and that they would become less active if barriers are not eliminated.

Participants were also asked if there were some programs in their neighbourhood that help them stay active? They reported that they have both physical (sports groups, sports competitions) and social (voluntary community work) neighbourhood programs that help them stay active. Participant 11 stated:

'Yes the community centre arranges for different events and arranges sports competitions.'

Participant 5 also stated:

'Yes there are always different programs to join both physical and social.'

However, these community activities do not include structured exercise sessions; rather they are normally carried out during certain events and include all community age groups not only older adults.

ACCESSIBILITY

Neighbourhood Location and environmental variables were major sources of physical activity through influencing destinations and providing facilities. The participants were asked about their neighbourhood accessibility and how easy would they navigate in their area? All the participants stated that it was quite easy for them to move around their neighbourhoods. Participant 12 stated:

'It is easy to walk around; I have no problem in finding my way.'

They related this to specific neighbourhood elements such as shorter distances to destinations and well-connected streets.

Participant 10 stated:

'Quite easy I can go anywhere from my place. I can go to meet daily needs within a reasonable distance'

Participant 8 added:

'My neighbourhood is quite accessible, I can go everywhere within few minutes.'

Physical activity was facilitated by the fact that the neighbourhoods provided the necessary facilities and all their needs were nearby. Therefore, accessibility is an important facilitator to physical accessibility because participants stated that being near to facilities and services motivated them to go out.

SOCIAL INTERACTION

Participants positively defined their active aging as being socially active. The theme of social interaction appeared throughout as main factor in their experience of physical activity. Participant 11 stated:

'I usually walk up early go to morning prayer then go to the park for a walk after that I meet my friends for breakfast and then I go back home if there is no voluntary work in the community centre.'

Participants felt that physical activity promoted social interaction with like-minded peers, and attributed this physical activity to reducing not only physical health problems but also to reducing mental problems. Participant 4 stated:

'Physical activity keeps me healthy both in my body and mind because when I go for a walk I often have the chance to meet friends and neighbours and have a chat.'

The presence of friends assured them that they are not alone and there are peers who are likeminded around to share experience and reduce some anxiety regarding aging. Participant 6 stated:

'Physical activity has benefits to my health, and provides an opportunity to social life which is also important especially in our age I like to share history and experiences.'

Participant 2 added:

'I walk for one hour everyday if it is not raining; and I participate involuntary work in the community centre, I do not want to stay alone.'

This social support kept them going out and enhanced their physical activity as they felt comfortable and confident meeting and socializing with like-minded peers.

SAFETY

Participants were also asked regarding concerns about leaving home (safety): How they viewed their neighbourhood safety? Did they feel safe to go out at any time? Most of the participants viewed their neighbourhood as quite safe apart from some petty crimes. Participant 3 stated:

'Well everywhere there are opportunity offenders but the area is relatively safe. The time I go for a walk around 5:00pm the streets are normally safe because you can find many people going for a walk or jogging, so I feel safe.'

The participants were also asked about their concerns about neighbourhood conditions (safety from falling) and whether they possessed any fear of falling due to bad walkways conditions. Most of the participants reported that they do not really walk around their neighbourhood and they normally go to the area's park for walking or for performing other types of physical activity. However, they stated that walkways conditions in some areas were poor and the lighting needs improvement. Participant 4 stated:

'Actually the neighbourhood walkways are in poor conditions, however, I usually walk in the park.'

Participant 4 added:

'The walkways are either too narrow, or not well maintained or full of plant pots. Anyhow I usually take my car to the park to walk there.'

But some participants stated that walkway conditions did not really deter them from walking as their area is fairly quiet and no fear of speedy traffic. Participant 3 stated:

'Well the area is fairly quiet you can walk in the middle of the street no heavy or speedy traffic; However, I go to park for a walk more fresh air and beautiful scene.'

The importance of having a park for the young elderly to engage in both physical and social activities emerged almost throughout the themes. Generally, all the participants showed little concerns about traffic and crime deterring their physical activity.

3. SUMMARY

The participants seemed to be physically active, even those with some health and performance problems, they wanted to prevent further health problems and remain as active as possible. Social support motivated them to engage regularly in physical activity. The participants reported that they enjoy having a strong community and that the strength of this community was a key facilitator to physical activity.

In general participants were satisfied with their physical activity forms (walking, cycling, gardening, carving, etc.). They described their experience of physical activity and focused on its importance in maintaining independence over long periods of time. Almost all of them had a regular routine physical activity. They showed awareness of the importance of good health at an older age.

4. DISCUSSION

The research questions have been evaluated via detailed transcripts' analysis. The emerged final themes provided interesting insights into the motivations of the older adults to perform physical activity. The results suggest that preventing further health decline at an older aged was a strong influence on physical activity among the older adults. This supports prior qualitative research findings pertaining to the role of physical activity in maintaining healthy/active aging (Jonine M Jancey, Ann Clarke, Peter Howat, and, & Lee, 2009). The overall results support previous findings of qualitative research, for example, the increased perception of social support as enhancing physical activity. For instance, (Hardy & Grogan, 2014), using a grounded theory approach, found that social support promoted physical exercise among older adults. Furthermore, (Alfonzo et al., 2008) argued that social interaction can influence the desire for physical activity. On the other hand, (du Toit, Ester Cerin, Evie Leslie, & Owenet, 2007), reported that the relationship between the physical activity and social interaction is not influenced by the physical features of the neighborhood, but is more associated with the assumption that people who are sociallyoriented, choose the neighborhood type that fits their social needs, rather than the neighborhood design inhibiting their need for social interaction.

The results also suggest that older adults perceived that neighborhood environmental variables can either facilitate or obstruct physical activity. Key facilitators to physical activity well-maintained sidewalks, included street furniture. accessibility (proximity to destinations), and safe crossing. Another theme, that have emerged was the neighborhood aesthetics, although not often mentioned, but the participants indicated that pleasant neighborhood environments increased their likelihood to engage in physical activity. Neighborhood environmental barriers to physical activity included safety pertained to crime risks, speeding traffic and falling hazards. Crime risks pertained to potential victimization, speedy traffic pertained to safe crossing and busy intersections, falling hazards pertained to walkway poor conditions and poor lighting. Participants identified barriers to physical activity that included unpaved walkways and poor lighting, as increasing falling risk. These identified barriers can be particularly problematic for older adults with some performance or health problems and physical disability. Safety from potential victimization was not a concern, as felt participants fairly safety in their neighborhoods.

The identified neighborhood environmental barriers to physical activity supported other research findings. For example, (Sandra Mahecha Matsudo et al., 2004), illustrated how neighborhood characteristics influenced physical activity among older adults. Barriers and facilitators included facilities and services, traffic and pedestrian infrastructure, neighborhood aesthetics, and adequate public transport. Their findings are consistent with this study's findings, although this study did not discuss public transport.

Another interesting finding from this study showed that there were no significant differences between the older adults physical activity in the two different urban setting. The pattern of routine daily physical activity, community-based activities and other relevant social activities were almost the same. Since most of the participants were Malay, the finding is consistent with (Diez-Roux, 2004), who suggested that culture and ethnicity influence levels of physical and social activities.

Although interesting findings were obtained by analyzing the perceived neighborhood

environmental variables that facilitate or act as barriers to physical activity among older adults using a qualitative approach, this study was subject to certain limitations. The relatively small sample was mainly male Malay. As such, to generalize with confidence is limited. The participants were also older adults aged 60-75 years, and are mainly categorized as young olds, rather than old-olds aged 75⁺ years. Therefore, Future research is recommended to use ethnic distribution and gender that reflect the general population, and access different age groups.

5. CONCLUSION

This qualitative study contributed to the understanding of the neighborhood environmental variables influencing physical activity and extended a literature on neighborhood facilitators and barriers to physical activity among older adults. Overall identified themes were consistent with previous literature related to active aging. Findings showed that the older adults are aware of the importance of physical activity to active aging and health. They also believe that their neighborhood physical attributes influence physical activity irrespective of different urban settings However, future researchers are recommended to answer the following questions:

- 1- How does ethnicity influence elderly experiences with active aging?
- 2- How do experiences with active aging differ among elderly residing in different localities (rural versus urban)?

ACKNOWLEDGEMENT

This research was supported by the IPPP Grant (PV100-2012A), University of Malaya.

REFERENCES

- Alfonzo, M., Marlon, G. B., Day, K., McMillan, T., & Anderson, C. (2008). The Relationship of Neighbourhood Built Environment Features and Adult Parents' Walking. Journal of Urban Design, 13(1), 29-51.
- Aspinall, P.A., Ward Thompson, C., Alves, S., Sugiyama, T., Brice, R., & Vickers, A., (2010). Preference and relative importance for environment attributes of neighbourhood open space in older

people. Environment and Planning B: Planning and Design, 37(6), 1022-1039.

- Bengston, V., L., Silverstein, M., Putney, N.M., & Gans, D. (2009). Handbook of Theories of Aging
- Boyd, C. O. (2001). Philosophical Foundation of Qualitative Research, In Munhall, P.L. (Ed) (2001) Nursing Research: a qualitative perspective (pp, 65-89). Sudbury, Mass: Jones and Bartlett.
- Cresswell, J.W., Hanson, W.E., Vicki, L., Plano, C., & Alejandro, M. (2007). *Qualitative Research Design : Selection and Implementation*. The Counselling Psychologist, 35(2), 236-260.
- Cresswell, J.W., Polano Clark, V., Gutmann, L., & Hanson, W.E. (2003). Advances in Mixed Methods Design. In Tashakori, A., Teddlie, C. (Eds), handbook in mixed methods design in social & behavioural research. Thousands Oaks: Sage Publications Inc.
- Crombie, I.K., Irvine, L., Williams, B., Mcginnis, A.R., Slane, P.W., Alder, E., M., & Mcmurdo, M.E.T. (2004). Why older people do not participate in leisure time physical activity: a survey of activity levels, beliefs and deterrents. Age and Ageing 33(3), 287-292. doi: 10.1093/ageing/afh089
- Cummins, S., Macintyre, S., & Davidson, S. (2005). Measuring neighbourhood social and physical context: generation and interpretation of ecological data from routine and non-routine sources. Health & Place, 11, 249-260.
- David X.M., Susan A., Jeanine C., Eve C.P., Eduardo E.B., & Hernandez, A.R. (2014). A Qualitative Exploration of Factors Associated With Walking and Physical Activity in Community-Dwelling Older Latino Adults. Journal of Applied Gerontology(1-14). doi: 10.1177/0733464814533819
- Diez-Roux, A.V. (2004). Estimating neighbourhood health effects: variables and fallcies in multilevel analysis. American Journal of Public health, 88(2), 216-222.
- Dill, J., Neal, M., Shandas, V., Luhur, G., Adkins, A., & Lund, D. (2010). Demonstrating the benefits of green Streets for Active Aging: Final Report to EPA. Portland: Centre of Urban Studies, Portland State University.

- Du, T.L., Ester, C.E., Evie, L., & Owenet, N. (2007). Does Walking in the Neighbourhood Enhance Local sociability? Urban Studies, 44(9), 1677-1695.doi: 10.1080/00420980701426665
- Durrett, C. (2009). *The Senior Cohousing Handbook: A community Approach to Independent Living*. Canada: New Society Publishers Gabriola.
- Ewing, R., & Handy, S. (2009). Measuring the Unmeasurable: Urban Design and Qualities Related to walkability. Jounal of Urban Design, 14(1), 1677-1695.
- Fisher, J., Li, F., Michael, Y., & Cleveland, M. (2004).Neighbourhood-Level influences on physical activity among older adults: A multi-variate analysis. Journal of Aging and Physical Activity, 11, 45-63.
 - Gauvin, L., Riva, M., Barnett, T., Craig, C., Spivock, M., Laforest, S., Gane, S. (2008). Association between Neighbourhood Quality of Life study. American Journal of Epidemiology, 167, 944-953.
 - Handy, S., Boarnet, M., Ewing, R., & Killingsworth, R. (2002). How the Built environment affects physical activity: views from urban planning. American Journal of Preventive medicine, 23(2), 64-73.
 - Hardy, S., & Grogan, S. (2014). Preventing Disability through Exercise Investigating Older Adults' Influences and Motivations to Engage in Physical Activity. Journal of Health Psychology, 14(7), 1036 – 1046. doi: 10.1177/1359105309342298
- Jonine, M.J., Ann, C., Peter, H., and, B. M., & Lee, A.H. (2009). *Perceptions of physical activity by older adults: A qualitative study.* Health Education Journal, 68(3), 196-206. doi: 10.1177/0017896909339531
- King, D. (2008). Neighbourhood and individual factors in activity in older adults: Results from the neighbourhood & senior health study. Journal of Aging and Physical Activit, 16(2), 144-170.
- Michael, Y., Beard, T., Choi, D., Farquhar, S., & Carlson, N. (2006b). *Measuring the Influence of Built neighbourhood Environments on Walking in Older Adults.* Journal of Aging and Physical Activit, 14(3), 302-312.
- Michael, Y. L., Green, M. K., & Farquhar, S. A. (2006). *Neighborhood design and active aging*. Health & Place, 12(4), 734-740.

doi:<u>http://dx.doi.org/10.1016/j.healthplace</u> .2005.08.002

- Polkinghorne, D.E. (1989). Phenomenological research methods. In R. S. Valle & S. Halling (Eds), Existential phenomenological perspectives in psychology (pp. 41-60). New York, Plenum.
- Rasinaho, M., Hirvensalo, M., Leinonen, R., Lintunen, T., & Rantanen, T. (2006). Motives for and Barriers to Physical Activity Among Older Adults With Mobility Limitations. Journal of Aging and Physical Activit, 15(90-102).
- Saelens, B., & Handy, S. (2008). *Built Environment Correlates of Walking: a review*. Medicine and science in sports and excercise, 40(7 suppl: ssso).
- Sandra, M.M., Victor, R.M., Douglas, R.A., Timóteo, L.A., Erinaldo, A., Luis, d. Oliveira, a., & Braggion, G. (2004). Physical Activity Promotion: Experiences and Evaluation of the Agita São Paulo ProgramUsing the Ecological Mobile Model. Journal of Physical Activity and Health, 1, 81-97.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Essex: FT Printice Hall, Pearson Education Limited.
- Strath, J.S., Michael, J.G., Raymond, I., Teresa, L.H., Elizabeth, K.L., Christopher, J. D.,

& Swartz, A.M. (2012). Measured and percieved environmental characteristics are related to accelerometer defined physical activity in older adults. International Journal of Behavioral Nutrition and Physical Activity, 9:40.

- Strath, S. (2007). Operationalizing Environmental Indicators for Physical activity in Older Adults. Journal of Aging Phys Act, 15(4), 412-424.
- Walker, A., & Mollenkopf, H. (2007). *QUALITY* OF LIFE IN OLD AGE
- International and Multi-Disciplinary Perspectives. In H. M. & A. Walker (Eds.), (Vol. 31, pp. 101-122). *The Netherlands: Springer.*
- Weiss, R., L., Maantay, J., A., & Marianne, F.F. (2010). Promoting Active Urban Aging: A Measurement Approach to Neighborhood Walkability for Older Adults. Cities and the Environment, 3(1).
- WHO-Malaysia. (2008). Clinical Practice Guidelines: Management of Hypertension. (MOH/P/PAK/156.08 (GU)).
- WHO. (2007). Global-Age Friendly Cities, A Guide.
- World Health Organization (WHO)- Malaysia, C. C. S.-. (2008). *Clinical Practice Guidelines: Management of Hypertension.* (MOH/P/PAK/156.08 (GU)).