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Aging and Urban Mobility in Bandar Sunway: A Holistic Approach

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Aging and Urban Mobility in Bandar Sunway: A Holistic Approach

(Full Paper)

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ABSTRACT

Human longevity is constantly changing the demographic outlook of the world's population and older people are projected to double in the next 30 years from 11% to 22% of the world's population. Malaysia is no exception and, like most western and developing nations, the number of Malaysians aged 60 years and above has been gradually rising from the 1970s onwards and is currently estimated to represent 10% of its population. This has created an urgent need to develop age-friendly cities, so that older individuals living in urban areas can have an improved life. It is important that the aging population continues to lead healthy and productive lives as far as possible. In this project, which is a work in progress, we surveyed a suburban community, aged 50 years and above, residing in Bandar Sunway and its vicinity in the state of Selangor Darul Ehsan, Malaysia. The aim was to assess their health and perceptions on mobility through targeted questionnaires, in-depth interviews and focus groups and identify the factors associated with healthy aging in a holistic manner. The overall goal is to promote a healthy mind in a healthy body despite the advancing years. In the preliminary phase we surveyed 73 participants aged between 52 – 85 years and compared responses and clinical parameters for individuals below (N = 36) and ≥ 65 years (N = 37) in age. Based on their Body Mass Index (BMI), the participants were generally healthy with a normal BMI (45%) or slightly overweight (41%) with a higher BMI and blood lipid levels. There were no significant differences in the cognitive assessments between the two age groups (p = 0.945). A majority (70%) of the participants were satisfied with their lives in Bandar Sunway, but some reported several health related issues and chronic diseases. However, this was not a factor that hindered their quality of life. Older adults in Bandar Sunway still preferred driving their own vehicles instead of taking public transports. This was due to several shortfalls in the transportation systems: pricing, schedules of transport, safety, and cleanliness. Preliminary results have identified several aspects of public transportation in urban areas that can be improved to better serve the aging community. In doing so, we anticipate the findings and recommendations will be applicable to a much wider community in Malaysia and other parts of the world. The project is aligned with the theme of improving health and well-being and will provide a model for understanding and dealing with aging in the local community.

Keywords: Gerontechnology, aging population, mobility, age-friendly city, health, Malaysia

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INTRODUCTION

Population aging has been actively changing the world's demography. With the rapid advancements in medicine and technology, life expectancy has significantly increased and is projected to continue to rise. Coupled with the declining fertility rates and the aging of the "baby boom" generation, the older population is estimated to double in numbers from 11% to 22% by 2050 (Bloom *et al.*, 2011).

Malaysia, like the rest of the world, is rapidly facing an aging population. It has been estimated that there are about 3.5 million (10.7%) individuals aged 60 and above in the country in 2020 (Department of Statistics Malaysia, 2020). It is essential to ensure that the individuals in this age group continue to lead a healthy, productive, and comfortable life. Therefore, this study aimed to examine factors affecting urban mobility and healthy aging in the adult population aged 50 years and above. Healthy aging is defined as a dynamic process that facilitates wellbeing in old age, considering functional capacity as one of the core components in the health of older dwellers. Preservation, development, and rehabilitation of the functional capacity of aging people will assure them of the comfort of their daily life and routine, allowing them to live independently, even in the presence of health complications (Fogal *et al.*, 2019).

Older adults are prone to a multitude of health conditions in their lives, which comes with age and general lifestyle. Some common ailments include sensory changes like the loss of eyesight, hearing and cognitive decline. They also tend to experience loss of muscle strength and frailty. This is further enhanced if there is a lack of exercise or mobility. Chronic conditions such as cardiovascular diseases, hypertension, cancer, arthritis, and diabetes are also prevalent in older adults (Jaul and Barron 2017). Most older adults with a lack of physical activity and unhealthy lifestyle were found to be diabetic, which increases the risk factor for other somatic conditions, primarily cardiovascular diseases, and osteoarthritis (Kirkman *et al.*, 2012; Odden *et al.*, 2014). In previous studies other conditions, such as urinary incontinence, dementia and depression were found to be frequently diagnosed in older adults (Collerton *et al.*, 2010).

Mobility is important to health, even more so in older people. Moving even short distances at high frequencies daily were found to positively benefit the health of older individuals (Corran *et al.*, 2018). Mobility disability has been correlated with the possibility of experiencing a fall. In older adults, falls occur in about 30-40% of older adults each year and are a major cause of morbidity (He *et al.*, 2014). Urban environments present new challenges in mobility and safety for the older adults and this requires the implementation of novel measures to reduce the incidents of accidents and falls. In previous studies it has been highlighted that gender, employment status, lack of access to personal vehicles, lack of public transportations and disabilities were some of the key factors that influenced travel among older adults (Corran *et al.*, 2018; Koh *et al.*, 2015).

One of the ways of enhancing the lives of an aging population would be to build a city that would be friendly to them. This concept was highlighted by the World Health Organisation in 2006, to improve liveability of cities for an aging population as well as residents of all ages. This initiative is a 'place-based policy' and its interpretation varies from place to place but essentially, with the same goal (Murray, 2014). Our current study was localised to residents aged 50 and above living in Bandar Sunway (Sunway City), a suburban area in the Petaling District of Selangor Darul Ehsan state in Peninsular Malaysia. The study aimed to investigate the key issues faced by the older dwellers living in this city, and its vicinity, in relation to the urban mobility, and assess the health and wellbeing of the older dwellers to help develop a better understanding on the gap in the current urban mobility.

METHODS

Study area

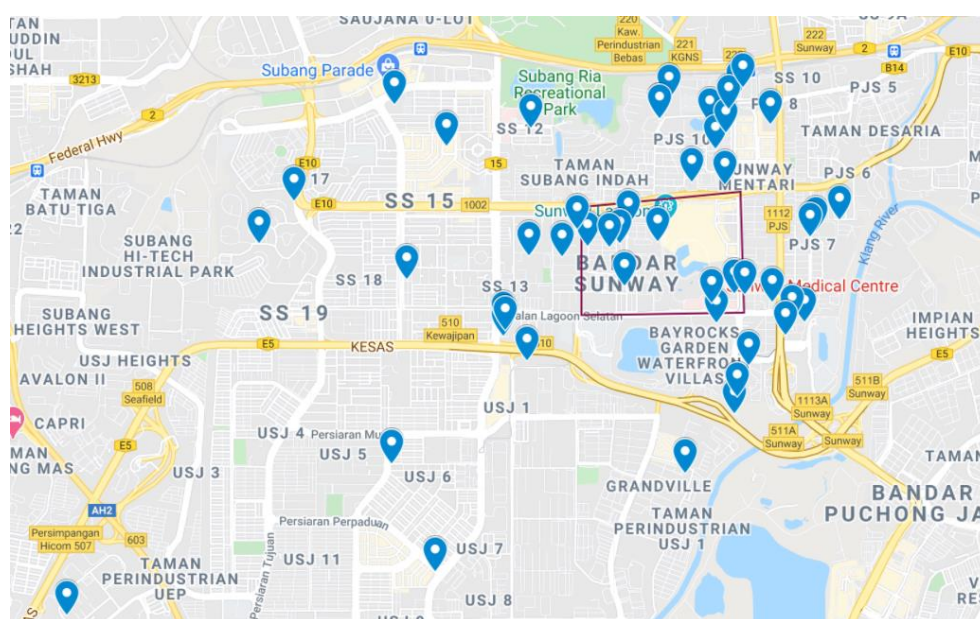


Figure 1: Map depicting Bandar Sunway (in red box) and its surrounding area with markers indicating the participant's residence

Residents living in Bandar Sunway or its vicinity were surveyed over a three-day period in December 2019 (Figure 1). The location is Malaysia's first integrated township located in the Klang Valley in the state of Selangor Darul Ehsan and was transformed from abandoned tin mining land. The area covers approximately 800 acres and includes a population of 200,000. The study was approved by the Monash University Human Research Ethics Committee (Ref #: 2020-19083-41584).

Study subjects and design

A total of 73 participants were recruited for this study using several means. These included placing posters at places frequented by the target group, approaching potential participants and organising a recruitment event on campus. The volunteers were then subjected to various tasks evaluating their physical health, cognition and other lifestyle aspects. These tasks were grouped into three work packages, discussed below.

Work package 1 - General survey questions: Participants were required to fill in a questionnaire with several sections encompassing different aspects of this study. The first part of the questionnaire consisted of demographic information, health status of participants and their mobility and modes of travelling in the city. The second part of the questionnaire aimed to understand the kind of lighting conditions that older residents are exposed to and prefer. The last part of the questionnaire was a psychometric analysis, consisting of a six-question scale measuring anxiety, the State-Trait Anxiety Inventory (STAI-6) and a 5-item scale measuring life satisfaction, the Satisfaction of Life Scale (SWLS) (Diener *et al.*, 1985; Tluczek *et al.*, 2009).

Work package 2 - Clinical laboratory testing and genetic analysis: Peripheral venous blood samples (5 ml) were collected by a certified phlebotomist after obtaining informed consent from each participant for lipid screening as well as vitamin B₁₂ quantification. The blood profiling was carried out at Sunway Medical Centre. Preliminary clinical results are presented here and detailed genomic analysis of genetic variation at selected loci on the Dopamine Receptor D4 (*DRD4*) and Apolipoprotein E (*APOE*) genes are in progress. These loci were selected based on their association with cognition and sensory perception.

Work package 3 - Cognitive assessment: Cognitive assessment of the participants was based on their ability to complete two tasks that are described below:

- **Task 1: Word recall test:** Participants were verbally presented a list of 16 words, read aloud one at a time (with a 1 second interval in between word presentations) by the experimenter. The protocol used for this stage was modified from a previous study (Nieuwenhuis-Mark *et al.*, 2009). Their task was to memorize these words as best as they could, to be verbally recalled by them in any order at a later point in time. The first time point in which they were instructed to recall the words was immediately after the presentation of the list of 16 words, as described previously. The second time point is after the completion of Task 2, as described below.
- **Task 2: Tower of London:** In this task, three wooden pegs of different lengths mounted on a piece of wood and three coloured balls (red, blue, green) were used as manipulation pieces, for the purpose of measuring decision making and planning ability. Participants manipulated these three balls (known as a 'move') on the three pegs from an initial arrangement (known as the 'start state') to a desired outcome arrangement (known as the 'goal state'). There are several rules that defined how a 'move' could be made, which were adhered to by the participants (Kaller *et al.*, 2012).

For each trial, participants were verbally informed on the number of ideal 'moves', in which they were tasked to complete the trial (manipulating the coloured balls from the start state to the end state) within a given number of moves. There were a total of 16 trials, with 2 minutes given for each trial to be solved. Participants were also instructed on the importance of mentally planning the solution, before performing the execution of the series of moves. Lastly, they were informed and consented to be video recorded, for the purpose of collecting reaction time data and other parameters.

Data analysis

Statistical analysis was carried out using SPSS, version 26 to compare differences between two cohort groups, those below the age of 65 and those aged 65 and above

RESULTS

In the preliminary phase a total of 73 participants aged between 52 – 85 years were recruited in this study after obtaining informed consent. The main demographic data of the participants are described in Table 1. Participant mean age was estimated to be 65.04 ± 6.63 (SD) years and so subsequent analysis was done comparing individuals below and above 65 years in age (Figure 2).

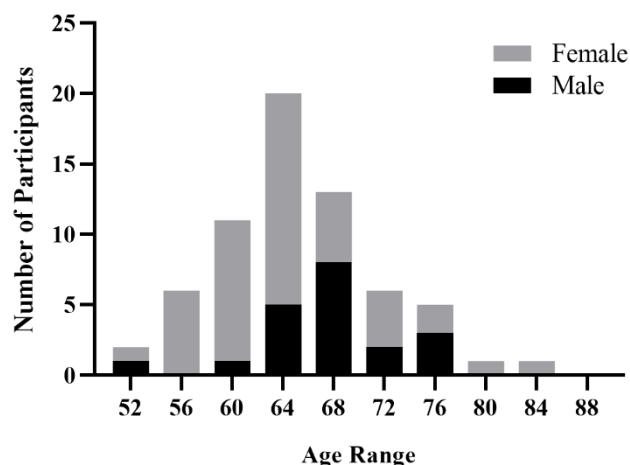


Figure 2: Age distribution of participants of this study, stratified by gender

Physical health and general wellbeing

The Body Mass Index (BMI) of the participants was calculated using the weight (kg) and height (m) data of the participants. Generally, a BMI between 19-23 is accepted as a normal range, with values below the range being underweight and above the range being overweight. Most participants were within the normal range ($N = 33$; 45%) (Table 2) and a similar proportion of them were overweight ($N = 30$; 41.1%). This was a concern as with increasing weight, especially in old age, there will be higher risks of developing certain somatic and physical conditions. Interestingly, 71.2% of participants described their health to be good, very good or excellent indicating that they have a rather positive outlook on their fitness but they did report that they were under medication for several conditions, notably hypertension, high cholesterol and diabetes (Figure 3).

Participants were also prompted to comment on their hearing, eyesight, and urinary incontinence. A total of 86.3% of participant's wear glasses for reading or distance vision with 92% of participants having had their eyesight examined in the last 5 years. On the other hand, only 28.8% of participants have had their hearing tested. About half the participants also reported that in the last week they had to frequently rush to the toilet to urinate during the course of the day, with 23 (36.5%) of them having had urine leak before getting to a toilet.

Table 1: Demographic data of the study participants.

Variable	Category	N = 73	%
Gender	Male	24	32.9
	Female	49	67.1
Marital Status	Not Married	11	15.1
	Married	51	69.9
	Widowed	9	12.3
	Divorced	1	1.4
	Living with a partner	1	1.4
	Highest Education	Primary and below	12
	Secondary	29	39.7
	Diploma/ Pre-University	14	19.2
	Bachelor's degree/ Professional Qualification	11	15.1
	Postgraduate	7	9.6
Ethnicity	Malay	2	2.7
	Chinese	57	78.1
	Indian	13	17.8
	Others	1	1.4
Employment Status	Employed, working full time	13	17.8
	Employed, working part time	6	8.2
	Unemployed	6	8.2
	Retired	41	56.2
	Disabled, not able to work	2	2.7
	Others	5	6.8

Health Perception	Excellent	4	5.5
	Very Good	17	23.3
	Good	28	38.4
	Fair	19	26.0
	Poor	3	4.1
	Don't Know	1	1.4
	Prefer not to answer	1	1.4

Table 2: Age group and Body Mass Index of the study participants.

Variable	Category	Age Group		Total
		Below 65	Above 65	
Body Mass Index (BMI) (weight in kg) / (height in m)²	<19	3	4	7
	19 - 21	7	6	13
	21 - 23	11	9	20
	>23	14	16	30
Total		35	35	70

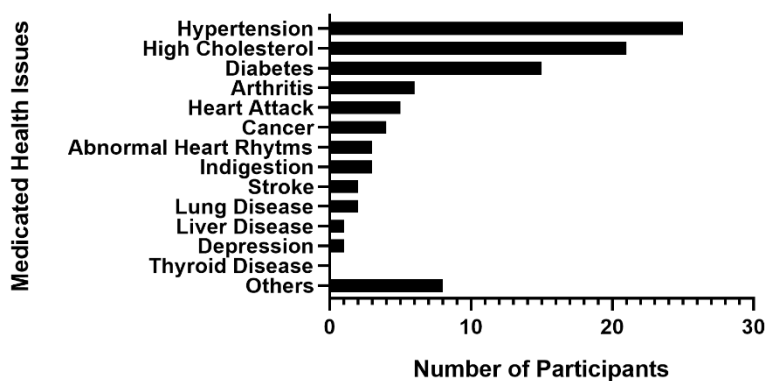


Figure 3: Health conditions that the participants take prescribed medication for.

Clinical laboratory testing

We also compared the lipid profile variation of the participants based on their age, gender, ethnicity, weekly activity, and BMI. The lipid profiles were generally similar between these variables and there were no significant differences observed with a multivariate analysis. However, on average participants had higher than normal levels of total cholesterol (6.56 ± 2.01 mmol/L), triglycerides (2.77 ± 1.52 mmol/L) and low-density lipoproteins (LDL) (3.94 ± 1.51 mmol/L) and low levels of high-density lipoproteins (HDL) (1.29 ± 0.37 mmol/L). The profile also indicated on average, a high risk of developing cardiovascular complications with a cholesterol ratio (5.22 ± 1.53 mmol/L). Out of the 52 participants who had very high total cholesterol levels, only 21 of them were under medication for high cholesterol (Figure 3).

Quality of life measurements

A majority (74%) of the participants described themselves as retired or not working. Despite that, participants from both age groups primarily reported themselves satisfied with their lives, being in good spirits, happy and full of energy. They were also still keen on their favourite activities and interests and very inclined to leave their homes to do outdoor activities. The responses between the two age groups in their self-reported quality of life assessments were synonymous. The responses to these questions were then compared between male and female participants, and for the question “are you afraid something bad is going to happen to you?”, female participants scored ‘yes’ significantly more often than the male participants ($(X^2(1) > 5.554, p = 0.018)$).

Question	Responses							
	Below 65				Above 65			
	Yes	%	No	%	Yes	%	No	%
Are you basically satisfied with your life?	34	94.4	2	5.6	35	94.6	2	5.4
Have you dropped many of your activities and interests?	9	25.0	27	75.0	13	35.1	24	64.9
Do you feel that your life is empty?	8	22.2	28	77.8	3	8.1	34	91.9
Do you often get bored?	8	22.2	28	77.8	7	18.9	30	81.1
Are you in good spirits most of the time?	33	91.7	3	8.3	33	89.2	3	8.1
Are you afraid that something bad is going to happen to you?	15	41.7	21	58.3	34	94.4	28	75.7
Do you feel happy most of the time?	34	94.4	2	5.6	32	86.5	4	10.8
Do you often feel helpless?	5	13.9	31	86.1	5	13.5	31	83.8
Do you prefer to stay at home, rather than going out and doing new things?	12	33.3	24	66.7	14	37.8	22	59.5
Do you feel you have more problems with memory than most?	11	30.6	25	69.4	9	24.3	27	73.0
Do you think it is wonderful to be alive now?	34	94.4	2	5.6	36	97.3	1	2.7
Do you feel pretty worthless the way you are now?	5	13.9	31	86.1	4	10.8	32	86.5
Do you feel full of energy?	29	80.6	7	19.4	29	78.4	8	21.6
Do you feel that your situation is hopeless?	2	5.6	34	94.4	1	2.7	36	97.3
Do you think that most people are better off than you are?	9	25.0	27	75.0	5	13.5	32	86.5

Table 3: Participant quality of life assessment.

Mental health and mental aging

Memory performance of the participants was assessed using the free recall task. There were two parts to this task: short-term delay recall (SDRGA) and long-term delay recall (LDRGA). It was found that the SDRGA was significantly positively correlated with the LDRGA ($r = 0.541$, $p < .05$) when this pair was compared (Table 4). There was also a significant average difference between performance in SDRGA and LDRGA ($t_{69} = 6.913$, $p < .05$). (Table 5)

Table 4: Paired Sample Correlation output for the SDRGA and LDRGA data.

Paired Samples	SDRGA Outliers and LDRGA Outliers	N	Correlation	Sig.
		70	0.541	0.000*

Paired Samples	SDRGA Outliers and LDRGA Outliers	95% Confidence Interval of the Difference							
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2 tailed)
		0.123	0.149	0.018	0.088	0.159	6.913	69	0.000*

Table 5: Paired Sample T-Test for the SDRGA and LDRGA data.

Participants were also required to complete the Tower of London assessment which functions to analyse the ability to plan. There were no significant differences between the age groups (above and below 65) in the Tower of London General Accuracy measure ($t_{70} = -.069$, $p = .945$). Vitamin B12 levels of the participants were also not significantly associated with the free recall task data and the Tower of London data.

As the last step of the questionnaire, participants filled in two sets of scales, measuring anxiety and satisfaction with life respectively. In the State-Trait Anxiety Inventory (STAI-6) scale analysis, there were no significant variance in participant responses between the two groups. The mean score for the below and above 65 groups were 11.77 and 10.97, respectively

(Table 6). This represents medium anxiety. On the other hand, the Satisfaction of Life Scale (SWLS) analysis also did not display any significant variances between the age groups. 66.67% of the participants below the age of 65 and 77.78% aged above 65 were satisfied with the life they are living (Table 7).

Table 6: State-Trait Anxiety Inventory (STAI-6) scale analysis data compared between the age groups; below and above 65

Age Group	Mean Score	Frequency					
		High anxiety	%	Medium Anxiety	%	No anxiety	%
Below 65	11.77	8	22.22	13	36.11	15	41.67
Above 65	10.97	6	16.22	20	54.05	11	29.73

Table 7: Satisfaction of Life Scale (SWLS) analysis data compared between the age groups; below and above 65

Scoring	Age Group			
	Below 65		Above 65	
	N	%	N	%
Extremely Satisfied	5	13.89	5	13.89
Satisfied	9	25.00	10	27.78
Slightly Satisfied	10	27.78	13	36.11
Neutral	3	8.33	1	2.78
Slightly Dissatisfied	6	16.67	5	13.89
Dissatisfied	3	8.33	2	5.56
Extremely Dissatisfied	0	0.00	0	0.00

Mobility

Mobility of older individuals are fairly influenced by their social and household environments. In our survey most participants (90.4%) lived with other adults in their homes, either a spouse, children, siblings, relatives, housemates, or domestic helpers with at least 57.6% of the participants living with 2 or 3 other adults. A majority (76.7%) of the participants also reported living in single or double story terrace houses. Most of the older adults also had either a car (79.5%) or a motorcycle license (13.7%) with 91.8% of them having at least one car in their household.

When travelling in Bandar Sunway, some participants reported that they were dissatisfied with the quantity of parking spaces (38.9%) and location of parking spaces (36.6%). They felt positively regarding the on-foot accessibility to parking places (38%), public transport stops accessibility (39.4%), quality of seating in public transports (37.6%) and quality of sidewalks (47.1%).

These participants were also not avid users of public transportation with most choosing to drive themselves to their destinations. The type of public transport and their usage frequency is depicted in Figure 4. Participants reported that they refrained from using public transport due to it being too expensive (9.6%), dirty (4.1%), not comfortable (15.1%), not safe (5.5%), information on transport schedule not easily available (16.4%), unreliable (12.3%), the transport not being frequent (19.2%), long waiting times (19.2%) and lack of knowledge (5.5%). The most common used public transport ticket among the participants was the Touch and Go card (49.3%) followed by MyRapid concession card (27.4%) (Figure 4)

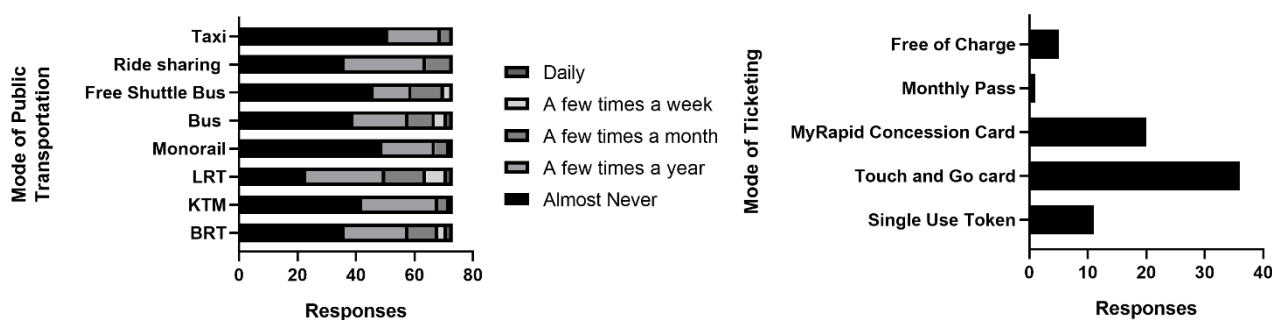


Figure 4: Usage frequency of different public transportations in Bandar Sunway (left) and types of transport tickets favoured by the participants (right).

Some aspects that the participants found were very important in choosing their mode of public transport included real-time updates on transport routes, punctuality of public transport, accessibility of the stops and stations, safety and security while in the transport. Other aspects that were of importance included cleanliness, availability of seats, comfort while waiting for the transport and while in the transport, ticket prices and simple ticketing.

Participants also reported on their frequency of walking around their housing area as well as in Bandar Sunway. Around 60% of the participants reported walking around their area at least a few times a week. The rest of the participants mentioned that they do not walk around their area due to there being too few sidewalks, sidewalks not being maintained, fear of personal attacks, lack of signposting directions and the canopy walk not being well-lit. Participants were also concerned about experiencing a fall, with 25% of them having had a fall in the past year. Among these individuals, 83.3% reported to have a fear of falling again.

Lighting study

We were also interested in examining lighting conditions that participants were exposed to regularly and preferred, and if they had any eyesight disorders. The most common eyesight disorder among both age groups was near-sightedness, far-sightedness, or a combination of both. However, even with these conditions, 64.4% of the participants reported that they did not have any issues with navigating around their homes and around 19.2% reported having some difficulty.

On the lighting study, the cohort from both age groups did not vary significantly on their responses and 86.2% of the participants reported that they generally were exposed to fluorescent or LED lights daily and preferentially use these kinds of lights in their homes. They also preferred to use bright lights in their homes (74%) but were interested in utilising ambient lighting in the future (53%). Most of the participants in this study enjoyed being outdoors and 86.1% of them reported to be exposed to at least 4 hours of sunlight each day. In terms of quality of sleep, 93.2% of them reported to sleep well, with 91.8% of them preferring to sleep with lights off. Additional data analysis is in progress.

DISCUSSION

This study was designed to understand the daily life of the older generation living in Bandar Sunway and on the issues they faced in terms of mobility within the city. We also identified the physiological and mental health of the participants as a holistic way in creating the ideal aging-friendly city. Preliminary analysis indicates that in general the participants are positive and happy with their lives and have a high interest in going out and socialising. They were also independent in their daily lives and were able to maintain their homes, cook meals, groom themselves and take their medications on their own. In the quality of life analysis, participants in both age groups were generally satisfied with their lives and were positive in responses. These responses could also probably be attributed to the participants not being isolated from others. Loneliness was found to be a key contributor in depressive states and a lower quality of life in older adults, in a study conducted in Singapore (Lim & Kua, 2011). However, for the question on if participants were anxious about something bad happening to them, female participants significantly said yes. This finding correlates to previous studies describing older females to be three times more likely to display signs of anxiety than their male counterparts (Vasiliadis *et al.*, 2020). The STAI-6 scale data also indicated that older individuals living in Bandar Sunway, do have mild anxiety but were still generally content with their life; 72.23% on the SWLS Scale.

Although most participants scored themselves as healthy, their BMI and lipid profiles indicated otherwise. High levels of body fat have a direct association with the presence of cardiovascular diseases and other comorbidities, such as diabetes and hypertension (de Souza *et al.*, 2015). Only a small fraction of the participants who had high risk lipid profiles were on medication for their condition. This presents an important area for improvement in the future, where yearly general health screening should be easily available to and recommended to older people.

Most participants reported to be bespectacled and some had hearing issues. Future planning for city upgrades should consider the physical disabilities of these individuals including having a larger font size in signboards and sound cues with vision cues at crossings. About half the participants also reported that they had to frequently urinate during the entire day. This could be a hindrance in quality of life, especially in individuals experiencing incontinence. They would be very limited in terms of their activity range and travel durations and distances. It would be important for these individuals to have access to a toilet when they need it.

In the Free Recall Task, we observed the expected difference between the SDRGA and LDRGA. Older participants were found to have difficulty in mentally 'going back in time' to when the words were recited to them, to recall the list, after some time has passed, unless they make significant emotional association with the words compared to recalling the word list in a short duration (Nieuwenhuis-Mark *et al.*, 2009). Tower of London analysis is a good indicator for the ability of individuals to visualise a problem and on planning to solve it. We did not find any significant differences between the age groups in this analysis, contrary to what we expected. We then compared the data from both the tasks with the participant's vitamin B₁₂ data, but it was not statistically significant. Vitamin B₁₂ plays an important role in neurological development, especially in older adults where a deficiency leads to an age-related cognitive decline (Stover, 2010). We expected participants who performed poorly in the tasks to also exhibit lowered vitamin B₁₂ levels, but this was not the case.

Mobility and physical activity in older adults are extremely important to their wellbeing, as it has a direct influence on the rate of decline in functional capacity (Fogal *et al.*, 2019). One of the major goals in creating an aging-friendly city is to facilitate an environment where older people will not feel reluctant to go about their daily lives. Most participants preferred driving to their destinations and occasionally used public transportation, even though they faced a lot of parking difficulties in the city. A key method to improving the public transportation structure to be attractive to older adults is to have a more straightforward system. Many of them refrained from using public transportation due to the lack of knowledge on the routes, schedules, frequency of service and ticket prices. These, along with comfort and safety are rated as factors that are important to older adults.

It was found in a previous study that the surrounding environment plays an important role in the functional capacity of older adults. Older people living in places that were more walkable had less functional disability as well as were healthier (lower cardiovascular risks) (Fogal *et al.*, 2019). In this study, most participants maintained a good level of physical activity with most of them walking at least 30 minutes, on average 5 times a week and moderate physical activities for 30 minutes on average 3 times a week. Several problems were brought to attention regarding the lack of walking paths and signposts, lighting, and physical safety. In future development projects, attention should be made to improving the sidewalks to better facilitate walking as well as maintaining it. The guarded canopy walk could also be improved with better lighting measures, utilising high-brightness LED lights to ensure comfort when navigating, especially in older people with eyesight disorders (White *et al.*, 2013). This will allow older people to be able to walk even at night in safety and avoid walking on pavements which can be unsafe in late hours.

Based on these findings there are some improvements that can be made in Bandar Sunway regarding enhancing the quality of life and mobility of older adults. However, the findings of this study have to be interpreted with caution due to some limitations. First, the sample analyzed is relatively small (N = 73) and future studies should collect more data including longitudinal data. Second, the sample was collected in a single country (i.e., Malaysia) and predominantly from a Chinese community in Malaysia and these insights might not be generalizable to other cities and ethnicities in the developed and developing countries. It would be essential to consider the general health and disabilities of the older people, while also not excluding people of other ages when making improvements in the city. It would be more beneficial to deliberate an age-friendly city rather than just an aging-friendly city, when planning the ultimate urban utopia for all. We encourage future research to investigate aging and urban mobility in other cities across the world.

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