

## A STUDY OF QUALITY OF LIFE AMONG ELDERLY AND ITS RELATIONSHIP WITH PHYSICAL AND MENTAL ACTIVITY

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### ABSTRACT

**Background:** Aging will cause loss of physical and mental function, loss of family and also loss of spouse. These type of losses gradually affect quality of life among elderly. Therefore, it is important to increase awareness among people in the community to understand about the benefits of doing physical activities regularly.

**Materials and Methods:** The aim of study is to assess whether physical and mental activity may improve the quality of life among elderly. A cross sectional study using a convenience sampling was conducted on 380 elderly aged 60 years and above in Kuantan, Pahang. The instruments used in this study were WHOQOL-BREF and GPAQ. The descriptive analysis and Mann Whitney test were carried out.

**Result:** There is zero number of respondents classified under high level of physical activity. A total number of 23 respondents were group among medium level and the rest were having low level of physical activity. There was no association between psychological health; social relationship and environment domain as p-value for the test were  $\geq 0.05$  while the p-value for physical domain was  $\leq 0.05$ . There was also no association between the mental activity and quality of life. It also identified no association between physical activity or mental activity and quality of life.

**Conclusion:** Majority of the elderly had low level of physical activity, however those engaged in medium level of physical activity has a significantly higher level of quality of life. We identify the findings benefits to inform health care providers in emphasizing their health advice towards keeping the elderly physically active to maintain an optimal quality of life and healthy aging.

**Keywords:** Quality of Life, Physical Activity, Mental Activity, Elderly

## 1.0 Introduction

The world population is becoming increasingly older. Currently, population of the older people makes up 11.7% of the total world population and it is estimated to be double by year 2050 (Ortman et al, 2014). Well-being of older Malaysian should be investigated as there is an increase in the population and changes in morbidity pattern among the group (Justin & Tengku, 2010). Aging usually associated with changes in individuals and families. Aging also will cause loss of physical and mental function, loss of family and also loss of spouse. These type of loses slowly will affect the quality of life among them (Minhat & Amin, 2012).

In dealing with the challenges and implications of aging population, there were various measures taken including developing an active and successful aging society. This is because those who continue to be productive in the society and contribute to the economy will have better health, live longer and have a good quality of life (Minhat & Amin, 2012). Therefore, in order to have a good quality of life, the elderly needs to be as productive and stay physically active.

An early theory on elderly suggests that being engaged in activities and participate socially may anticipate a healthy aging (Lemon et al, 1972). Elderly usually have problems in doing their activity daily living and needs to depend on others. There are limitation in doing any activities and they are more susceptible to disease, syndromes and illness compared to the younger adults. This kind of situations shows that the life quality of elderly getting low as their age increase. It was recommended to the professional health workers especially nurses to improve and upgrade their knowledge about how to measure the quality of life of elderly that have been hospitalized for their illness as they are the best position to assess functional status of elderly regularly and educate them to participate in healthy life style.

## 2.0 Materials and Methods

### 2.1 Study design

This is a cross sectional study and was conducted in Kuantan area. The instruments used in this study were World Health Organization Quality of Life abbreviated version (WHOQOL\_BREF) and Global Physical Activity Questionnaires (GPAQ).

### 2.2 Sample and Procedures

The sample size was calculated using Raosoft.com with 5% of margin error and 95% confidence of interval. The total number of respondents for this study was 380 respondents regardless their gender as well as races. Convenient sampling method was used to determine the respondents. The inclusion criteria for the respondents were aged 60 years old and above and able to understand Malay and/or English.

### 2.3 Data Analysis

The descriptive analysis and Mann Whitney test were carried out. Quality of life of the respondents was measured using WHOQOL\_BREF questionnaires and level of physical

activity was measured using GPAQ. Occupational status in the Socio Demographic Data was used to determine the mental activity status of the respondents.

### 3.0 Result

#### 3.1 Level of Physical Activity among Elderly

Respectively, more than half of the respondents with the total number of 357 elderly were obtained low level of physical activity (93.9%) while the other 23 respondents were classified under medium level of physical activity (6.1%). therefore, there was none of the respondents who were classified under high level of physical activity. Table 3.1 presents the detail distribution of level of physical activity among the respondents.

**Table 3.1:** Level of physical activity among the elderly (n=380)

Variable	Frequency (n)	Percentage (%)
<b>Level of physical activity</b>		
High	0	0
Medium	23	6.1
Low	357	93.9

#### 3.2 Quality of Life Status among Elderly

Table 3.2 represents the WHOQOL-BREF baseline data. The scores for each domain were calculated using SPSS. The score ranged from 38 to 86 with a mean value 66.83.

**Table 3.2:**Level of quality of life among elderly

WHOQOL	SCORE
<b>TOTAL WHOQOL-BREF Score</b>	
Maximum	86
Minimum	38
Mean (SD)	66.83 (8.47)
<b>PHYSICAL</b>	
Maximum	69
Minimum	19
Mean (SD)	51.51 (10.37)
<b>PSYCHOLOGICAL</b>	
Maximum	94
Minimum	44
Mean(SD)	73.67 (10.54)
<b>SOCIAL</b>	
Maximum	100
Minimum	31
Mean(SD)	70.37 (13.72)

ENVIRONMENT	
Maximum	94
Minimum	44
Mean(SD)	71.76 (11.40)

The maximum score for physical domain was 69 and the minimum value was 19 while the mean score for the domain was 51.51. For psychological and environment domain, the score were ranged from 44 to 94 while the social domain were ranged from 31 to 100. Meanwhile, the mean score for the psychological, social and environment domain were 73.67, 70.37 and 71.76 respectively.

### 3.3 Relationship between Physical Activity and Quality of Life

Table 3.3 and Table 3.4 summarized the statistical test for quality of life which was divided into four domains with the level of physical activity among the elderly. The mean rank for the physical domain was 235.07 for the medium and 187.63 for the low level of physical activity. Meanwhile, for the psychological and social domain, the mean ranks were 209.33 and 158.74 for the medium level and 189.29 and 192.55 respectively for the low level of physical activity. For the environment domain, the mean rank for the medium level of physical activity among the elderly was 175.30 and 191.48 for the low level.

**Table 3.3:** Relationship between Physical Activity and Quality of Life

	Level of physical activity	N	Mean Rank	p-value	Interquartile Range (IQR)
Physical domain	Medium	23	235.07	0.039	7
	Low	357	187.63		12
Psychological domain	Medium	23	209.33	0.385	18
	Low	357	189.29		12
Social domain	Medium	23	158.74	0.138	31
	low	357	192.55		6
Environment domain	Medium	23	175.30	0.487	18
	Low	357	191.48		18

**Table 3.4:** Test Statistics<sup>a</sup>

	PSD	PD	SD	ED
Mann-Whitney U	3672.500	3080.500	3375.000	3756.000
Wilcoxon W	67575.500	66983.500	3651.000	4032.000
Z	-.869	-2.059	-1.485	-.695
Asymp. Sig. (2-tailed)	.385	.039	.138	.487

a. Grouping Variable: Level Of Quality of Life

The  $p$ -values for the association between each domain with the level of physical activity were 0.039, 0.385, 0.138 and 0.487 respectively. The  $p$ -value for each domain was greater than 0.05 except for the physical domain. Therefore, physical domain has significance different between medium and low physical activity.

### 3.5 Relationship between Mental Activity and Quality of Life

Table 3.5 and Table 3.6 represent the statistical test for differences of quality of life with the mental activity among the elderly. The mental activity was divided into two categories which were employed and unemployed.

**Table 3.5:** Relationship between Mental Activity and Quality of Life

	Occupational Status	N	Mean Rank	p-value	Interquartile Range (IQR)
Physical domain	Employed	144	194.55	0.564	12
	Unemployed	236	188.03		12
Psychological domain	Employed	144	194.72	0.548	12
	Unemployed	236	187.92		12
Social domain	Employed	144	200.00	0.172	6
	Unemployed	236	184.71		6
Environment domain	Employed	144	188.33	0.760	18
	Unemployed	236	191.82		18

The mean rank for each domain was calculated and the results 194.33, 194.72, 200.00 and 188.33 respectively for the employed elderly. Meanwhile, for the unemployed elderly, the mean rank for physical, psychological, social and environment domain just had slight different which were 188.33, 187.92, 184.71 and 191.82.

**Table 3.6:** Test Statistics<sup>a</sup>

	PD	PSD	SD	ED
Mann-Whitney U	16408.500	16384.000	15624.500	16680.000
Wilcoxon W	44374.500	44350.000	43590.500	27120.000
Z	-.576	-.600	-1.366	-.305
Asymp. Sig. (2-tailed)	.564	.548	.172	.760

a. Grouping Variable: Occupational Status

The  $p$ -value for the physical, psychological, social and environment domain were 0.564, 0.548, 0.172 and 0.760 respectively which were greater than 0.05. The result means there is no association between the quality of life between the participation in the mental activity.

## 4.0 Discussion

### 4.1 Physical Activity among Elderly

The number of respondents classified under having low rate of physical activity was 353 which is about 92.9% out of the total respondents. This result indicated that majority of the elderly in the Kuantan were not actively involved in the physical activity since they were getting older.

It is common of having elderly population who were having low level of physical activity (Logan et al, 2013). A study found majority of the participants who were involved in the physical activity had low rate of physical activity (Landi et al, 2007). Elderly were highly inactive in physical activity. Compare both previous studies, it is clear that majority of the elderly in the world having low rate of physical activity (Patricia & Rui, 2014).

However, the elderly actually need to know the importance of being actively involved in physical activities. Morbidity and mortality rates from cardiovascular disease can be lowered by being physically active. Apart from that, being physically inactive also can contribute in the risk for dementia and impaired cognitive function (Abbort et al, 2004; Angevaran et al, 2008). Elders' mental health depended on the physical activity (Mortazavi et al, 2012; Dunn, Trivedi & O'Neil, 2001).

Thus, it is clear that being physically active actually can prevent people especially elderly in getting high risk of chronic disease and increase the mobility and morbidity rate of an individual.

### 4.2 Quality Of Life among Elderly

The maximum score for social relationship domains was the highest. Social relationship like having regular face-to-face contact with families was one of the contributing factors of having good quality of life (Bowling & Gabriel, 2004). Having good relationship with the relatives and friends also can improve the quality of life of the respondents. The findings of this study identified in the physical health domain, maximum score was the lowest one compared to other three domains which meant that respondents had low level of physical activity during their ageism. Those who were active in physical activity could have great quality of life. Regular involvement in the physical activity can prevent non communicable disease and also provided benefits to the elderly (Mummery et al, 2004; Warburton, 2006; Pucci, et al, 2012).

Psychological domain also became one of the contributor factors for quality of life. The mean score for the psychological domain was 73.67 (10.54). Elderly who have positive thinking about life actually contributed in the quality of life as they were not worried about what happened in the future and the importance of acceptance and making the best things in their

(Bowling & Gabriel, 2004b). Besides that, the elderly also need to learn coping strategies and try to face the negative changes of ageing including health and mobility loss.

Last domain in quality of life was environment domain. "Neighborhood resources, or neighborhood social capital, was also said to contribute to a good quality of life...." (Bowling & Gabriel, 2004b). A study revealed respondents who mentioned that having good neighborhood could contribute to good quality of life (Bowling & Gabriel, 2004b). They claimed that good relationship with the neighbor nearby can ensure their safety at home. Besides that, an area which has poor public transportation and inadequate transport also can lead to poor quality of life because it was difficult for them to go out and to move from one place to another (Bowling & Gabriel, 2004b).

#### **4.3 Relationship between Physical Activity and Quality of Life**

Based on the result shown in Table 3.3, the mean rank for the respondents who were having medium level of physical activity was higher than those who were in low level. It was indicated that those who were actively involved in physical activity had good physical health (Bowling & Gabriel, 2004b). Elderly usually had been labeled as not competent, weak and decrepit (Rashid et al, 2014; Cuddy et al, 2005; Levy, 2003).

There was no social support from the community as well as the family members in helping the elderly in maintaining their physical health. This kind of stereotyped actually make elderly became inactive in doing vigorous and moderate activity as the society tend to claim there are not strong enough to do such kind of activity. For instance, as we can see from the culture in Malaysia, youngster usually did not want their parents to do anything at home and let them to have sedentary life without doing any activity. This kind of attitudes toward the elderly sometimes gave the disadvantages to the elderly as being physically inactive or having low rate of physical activity can contribute in getting chronic disease such as coronary heart disease and diabetes mellitus.

#### **4.4 Relationship between Mental Activity and Quality of Life**

Based on the result shown in the Table 3.5, none of the domains got p-value < 0.05 and this indicated that no association between the quality of life and the mental status. This result was contraindicated from the previous study. Quality of life is a feeling of overall life satisfaction as determined by the mentally alert individual, whose life is being, evaluated (Meerberg, 1993).

Therefore, being unemployed or in the retirement state actually can lead to depression and loneliness to the elderly. It is common to have mental health problems such as depression and dementia. Besides that, those who were not actively involved in mental activity tend to have impaired cognitive function compared to others who participate in mental activity like doing leisure activity, learning and working (Mortazavi et al, 2012).

Elderly who were having slight impaired cognitive function seemed to feel and experience depressed, bored and have lots of memory problems (Holmen, 1999). In addition of that, retirement and being unemployed also can have negative effect on the cognitive function of the elderly person that can lead to reorganization of life and affecting their psychic structure

(Alvarenga, 2009). Anxiety, depression, irritability and dissatisfaction were some of the effect of being unemployed and thus resulting in reduction of quality of life.

## 5.0 Conclusion and Recommendation

This cross sectional study revealed a majority of low level in physical activity among community dwelling elderly aged 60 years and above. Their quality of life was comparable to other studies with mean scores more than 50 for overall WHOQOL-BREF score and each domains. Elderly who engaged in medium level of physical activity has a significantly higher level of quality of life. However, no significant difference was found in quality of life between employed and non-employed elderly.

Ministry of Health should sustain their role in promoting quality of life among the elderly. Campaign in maintaining physical and mental health after retirement should be done by the healthcare provision in the community. The sample size of the study should come from various area in order to get more accurate result of the relationship between level of physical and mental and quality of life. This study also recommended to be conducted among elderly in the different regional place in Malaysia such as in west, north or south peninsular of Malaysia and even in Sabah and Sarawak. The suggestion was made in order to know the result from each region in Malaysia and compare the result between them.

Elderly in this study is a majority of Malay community in a suburban area where knowledge and awareness on healthy aging is uncommon. Elderly are either living with extended families or spouse and having limited financial resources in which hinders their independence to participate in physical activities. Also worth to mention that these elderly values religious activities as the most superior in being healthy and other activities normally falls after it.

The results of this study will inform health care providers in emphasizing their health advice towards keeping the elderly physically active to maintain an optimal quality of life and healthy aging.

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## Ethical

Ethical approvals were obtained from Kulliyyah of Nursing Postgraduate and Research Committee (KNPGRC) and IIUM Research Ethics Committee (IREC) (Reference number: IIUM/305/14/11/2/IREC 488).



## Declaration

These authors of the article declare that there is no conflict of interest regarding publication of this article.

## References

- Abbott, R.D., White, L.R., Ross, G.W., Masaki, K.H., Curb, J.D., & Petrovitch, H. Walking and Dementia in Physically Capable Elderly Men. *Journal American Medical Association*, 2004; 12(292): 1447-1453
- Abdul Rashid, Azizah, M., & Rohana, S. The attitudes to ageing and the influence of social support on it. *British Journal of Medicine & Medical Research*, 2014; 4(35): 5462-5473
- Alvarenga, L.N., Kiyan, L., Bitencourt, B., & Wandelely, K.S. The impact of retirement on the quality of life of the elderly. *Rev Esc Enferm USP*. 2009; 43(4): 794-800
- Angevaren, M., Aufdemkampe, G., Verhaar, H.J.J., Aleman, A., Vanhees, L. Physical activity and enhanced fitness to improve cognitive function in older people without known cognitive impairment. *Cochrane Database Syst Rev*, 2008; (3).
- Bowling, A., & Gabriel, Z. An integrated model of quality of life. *Social Indicators Research*, 2004a; 69: 1-36.
- Bowling, A., & Gabriel, Z. Quality of life from the perspectives of older people. *Cambridge University Press*. 2004b; 24 : 675-691. doi 10.1017/S0144686X03001582
- Cuddy, A.J.C., Norton, M.I & Fiske, S.T. This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of Social Issues*, 2005; 61(2): 267-285.
- Dunn, A.L., Trivedi, M.H., & O'Neal, H.A. Physical activity dose response effects on outcome of depression and anxiety. *Medical Sciences Sports Exercise*, 2001; 33: S587-S597
- H. Mental disorder prevention and physical activity in Iranian elderly. *International Journal of Preventive Medicine. Special issue*, 2012; S64-72.
- Holmen, K., Ericsson, K., Winblad, B. Quality of life among the elderly. *Scand J Caring Science*, 1999; 13: 91-95
- Justin, M. & Tengku Aizan Hamid. A Multicomponent exercise program for institutionalized older adults effects on the depression and quality of life. *Journal of Gerontological Nursing*, 2010; 36(10), 32-41.
- Landi, F., Ondera, G., Carpenter, I., Cesaria, M.C., Soldato, M., Bernabei, R. Physical activity prevented functional decline among frail community-living elderly subjects in an international observational study. *Journal of Clinical Epidemiology*, 2007; 60: 518-524

- Lemon, B. W., Bengtson, V. L., & Peterson, J. A. . An exploration of the activity theory of aging: activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology*, 1972; 27:511-523.
- Levy, B.R. Mind matters: Cognitive and physical effects of aging self-stereotypes. *Journal Gerontology B Psychol Sci Soc Sci*, 2003; 58(4):203-11.
- Logan, S. L., Gottlieb, B. H., Maitland, S. B., Meegan, D., & Spriet, L. L. The Physical Activity Scale for the Elderly (PASE) questionnaire; does it predict physical health? [Research Support, Non-U.S. Gov't]. *Int J Environ Res Public Health*, 2013; 10(9), 3967-3986. doi: 10.3390/ijerph10093967
- Meeberg, G.A. Quality of life: a concept analysis. *Journal Adv Nurs*. 1993;18: 32-8
- Minhat, H. S., & Mohd Amin, R. Sociodemographic determinants of leisure participation among elderly in Malaysia. *Journal Community Health*, 2012; 37(4), 840-847. doi: 10.1007/s10900-011-9518-8
- Mortazavi, S, Mohammad, K, Ardebili, E.H, Beni, D. R, Mahmoodi, M, Keshteli, A.
- Mummery, K., Schofield, G., & Caperchione, C. Physical activity dose-response effects on mental health status in older adults. *Australian and New Zealand Journal of Public Health*, 2004; 28(2), 188-192.
- Ortman, J. M., Velkoff, V. A., & Hogan, H. An Aging Nation: The Older Population in the United States. *Population Estimates and Projections : Current Population Report*. 2014
- Patricia, A & Rui, N. Physical activity- the attitude of the institutionalized elderly. *Journal of Physical Education and Sport (JPES)*, 2014; 14(1), 12-15. doi: 10.7752/jpes.2014.01002
- Pucci, G., Reis, R. S., Rech, C. R., & Hallal, P. C. Quality of life and physical activity among adults: population-based study in Brazilian adults. *Quality Life Res*, 2012; 21(9), 1537-1543. doi: 10.1007/s11136-011-0083-5
- Warburton, D., Nicol, C., & Bredin, S. Health benefits of physical activity: The evidence. *Canadian Medical Association Journal*, 2006; 174(6), 801-809.