



Quality of Life among elderly people residing at old age homes in Northern Malaysia

TheingiMaung Maung^{1,*}, Win MyintOo², Prabal Bhargava³, Lubna Shirin⁴, Mohammed Shahjahan Kabir⁵, P.Rajasulochana⁶, Loshene Veerappah⁷, Ashmitta Jayakumar⁸, Shivaranjani A/P Tanaseelan⁹, Teneswary Gunaseelan¹⁰, Vaisnavi Tamil Selven¹¹

¹Unit of Community Medicine, Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia.

theingi@aimst.edu.my

²ASEAN Institute for Health Development, Mahidol University, Thailand; drwinuch@gmail.com

³Taylor's Clinical Campus, School of Medicine, Faculty of Medicine and Health Sciences, Taylor's University, 47500 Subang Jaya, Selangor, Malaysia; Prabal.Bhargava@taylors.edu.my

⁴Department of Anatomy, Universiti Teknologi Mara (UiTM), Sungai Buloh Campus, 47000 Sungai Buloh, Selangor, Malaysia; lubnashirin91@gmail.com

⁵School of Medicine, Perdana University Royal College of Surgeons in Ireland (PURCSI), Kuala Lumpur 50490, Malaysia; drkabis557@gmail.com

⁶Professor, Dept. of Microbiology, Saveetha Institute of Medical and Technical Sciences, Chennai, India
E-mail: profrajasulochana@gmail.com

⁶ Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia; loshene04@gmail.com

⁷ Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia; ashmitta@gmail.com

⁸ Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia; ranjanirubi@gmail.com

⁹ Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia; teneswary98@gmail.com

¹⁰ Faculty of Medicine, AIMST University, Bedong, 08100, Kedah, Malaysia; vaisnavi980524@gmail.com

*Correspondence: TheingiMaungMaung, theingi@aimst.edu.my; Tel.: 0164594792

ABSTRACT

Old age home is becoming a preferred choice for many contemporary families to send their elderly parents or relatives. It is important to help elderly people to improve their level of living quality their remaining days of life as dignified human beings. The current investigation was started, to determine quality of life (QOL) elderly individuals staying at an elderly facility and its similar elements. cross section of descript descriptive study was done in a few senior living communities in Northern Malaysia. This study included consented 83 inmates, aged 60 and above. WHOQOL-BREF questionnaire was used this included four dimensions for evaluating physical, psychological, social, and environmental quality of life. Data collection was done via interview and determinants for each domain were identified by multiple logistic regression. In this study, 59% of respondents had poor QOL whereas 41% of respondents showed satisfactory QOL. The factors influencing on physical health were gender, existing disability, and role in making decision on family issues. Underlying disease was a determinant for psychological domain. Social domain was related to gender, income, and role in family decision. Gender living

condition and BMI were significantly associated to environmental domain. This study highlights the awareness of well-being of elderly in old age home among public. Consideration of the standard of living and related variables are important in quality improvement and evaluation of health and social welfare services.

Keywords: Seniors;Northern Malaysia; Nursing home;Quality of life

1. Introduction

Ageing population,related problems are emerging over the past few years, and it is expected to be a major issue soon. Proportion of older people all over the globe is rapidly increasing whereby aging population in numerous nations would have 30% of total population by the mid-century and the population aged 60 years and more will double by 2050 according to WHO [1].In Malaysia, definition of old age is 60 years old and above, just as the cut-off age endorsed by the United Nations [2]. Malaysia can be regarded as “ageing nation” and in 2020, there were 7% of seniors in Malaysia. This is expected to double to 14% by 2044 and 20% by 2056. In next years, Malaysia may be transformed into “aged nation”. Therefore, special requirements and challenges for the aging population such as aged care, employment and income security are nowadays prioritized by the Malaysia government [3,4].As per the norm, old age people used to occupy the position of authority in the family. With aging, they became inactive and dependant in terms of economically, physically and psychologically all these events lead to several social economic problems. Due to the advancement in field of health, education, medical facilities and introduction of several national schemes or programs for elderly, there was a marked reduction in the death rate of older people resulting drastic increase in the elderly community globally [5]. Lack of family care, lacking a partner or a house, having little knowledge, leading a sedentary lifestyle, being in bad health, and cognitive impairments were contributory factors leading to elderly institutionalization [6].

The number of old age homes all over Malaysia are increasing and the institutions are either run by the Department of Social Welfare, non-governmental organizations, or private sectors. The Department of Social Welfare reported that there were 1473 registered care centres all over Malaysia in 2015 of which 454 are NGOs and 1,019 are private establishments. Increasing demands were observed urban regions like Kuala Lumpur, Selangor, Johor, and Penang, from working adults who are unable to provide care for their ageing parents[7].The insight into one's quality of life (QOL) and knowledge of where they fit within the framework of their lifestyle value systems, as well regarding their standards, expectations, goals and concerns according to WHO [8]. Several studies have evidence that, Compared to older people living with family, the quality of life for those in nursing facilities is much worse. [9–11]. Many of them felt left alone and they were not satisfied with the life in old age homes. According to research done in elderly homes in Kuala Lumpur, many residents were faced with inaccessibility to health care, poor social involvement, family negligence and sleep disturbances [12].

Providing better care for the elderly has become public health challenges in Malaysia. Moreover, there is a paucity of knowledge on QOL of older people residing at old age home in northern Malaysia. The investigation's goal was to identify elements that are related to the Age-related Quality of Life for Seniors Living.

2. Components and Procedures

The study has a descriptive and cross-sectional design. Six Northern Malaysian residential homes and one government building. Via deliberate sampling. 83 private house prisoners who were 60 years of age or older and gave their consent to participate in this investigation. those who were under 60, sick, or unstable psychologically, respondents from homes other than northern Malaysia were not included in the investigation. To prevent observer bias, two researchers had received training in how to give questionnaires. WHOQOL-BREF questionnaire was employed to measure life quality [13]. Four domains make up the survey (Physical, Psychological, Social and Environment). The physical domain consists of seven questions, the psychological domain consists of six questions, the social domain consists of three questions and the environment domain consists of eight questions with a scoring system. Cramer's alpha coefficient was more than 0.7 for each domain of WHOQOL-BREF, showing acceptable evidence of internal consistency [14].

Analytical Statistics: IBM SPSS Statistics for Windows was used to enter and analyse the data, Version 25.0. Pearson correlation was carried out to find out the relationship between one domain and another domain. Determinants for each domain were identified by multiple logistic regressions a link was deemed significant if the P value was less 0.05.

Ethical Consideration: The participants received and received a thorough explanation of informed consent. The obtained data's privacy and confidentiality were upheld. The research was done in compliance with the University's human and animal ethics committee and the deceleration norm of Helsinki (Ref: AUHEC/FOM/2020/03).

3. Results

Involved in this study were 83 respondents in total. In Table 1, majority of the respondents were females (59.7%), Chinese (59%), unmarried (38.6%), those with primary education level (34.9%) and those did not have caretaker (61.4%). About 60% of the respondents have at least one form of non-communicable diseases (NCDs). The typical age of the respondent was 68.8 years (SD=8.5) and BMI was 23(SD=3.2).

Table 1 Featured respondents' traits

Variables	Frequency (n=83)	Percent
Gender		
Females	43	51.8
Males	40	48.2
Race		
Malay	16	19.3
Indian	18	21.7
Chinese	49	59.0
Marital status		
Unmarried	32	38.6
Married	23	27.7
SDW*	28	33.7
Education		
Primary	29	34.9
Secondary	26	31.3
Tertiary	8	9.6
No formal education	20	24.1
Occupation		
Working	33	39.8
Retired	44	53.0
Never employed	6	7.2
Income (Ringgit)		
≤600	39	47.0
>600	44	53.0
Living condition		
Alone	51	61.4
With family	32	38.6
Disability		
Dependent	28	33.7
Independent	55	66.3
visit from family and friends		
Present	33	39.8
Absent	50	60.2
contribution to family decision		
Present	23	27.7
Absent	60	72.3
Caretaker		

Present	32	38.6
Absent	51	61.4
NCDs		
Present	50	60.2
Absent	33	39.8

3.1. Respondents' quality of life in senior living facilities

The senior respondents at the nursing home reported a QOL score that ranged from 26.5 to 89.3 on average, with a standard deviation of 12.9. With a range of 38 to 94 and a mean of 62.6 (SD=12.5), the physical category score was distributed as follows. The psychological domain got a mean score of 57.2 (SD: 11.7) with a range of 31 to 81. The social relationships score varied from 0 to 100, with an average of 44 (SD=29.9). The score varied from 31 to 94 in the environmental category, with a mean of 71.1 (SD=14.3). The environmental domain scored the highest and the social domain the lowest out of the four QOL categories assessed in this study.

Table 2. Pairwise correlation analysis of different domains

Domains	Domain 1	Domain 2	Domain 3
Domain 1			
Domain 2	0.4658 (<0.001)		
Domain 3	0.2216 (0.044)	0.3930 (<0.001)	
Domain 4	0.4193 (<0.001)	0.5980 (<0.001)	0.4016 (<0.001)

Physical health is the first domain, followed by psychological health, social interactions, and the environment. For the purpose of identifying the relationships between the various areas. With substantial p-values, all domains are positively associated with one another. Correlation coefficients and respective p-values were shown in Table 2, showing moderate strength of correlation between environment and psychological domains and weak correlations between other pairs of domains.

The respondents were split into two categories, satisfactory and unsatisfactory QOL, based on a cut-off value of 60% [15,16]. A score of 60% or more was considered sufficient QOL, while a score of 60% or less was considered poor QOL. In this poll, 49 respondents (59%) said their quality of life was poor, while 34 respondents (41%) said their quality of life was adequate (Fig. 1).

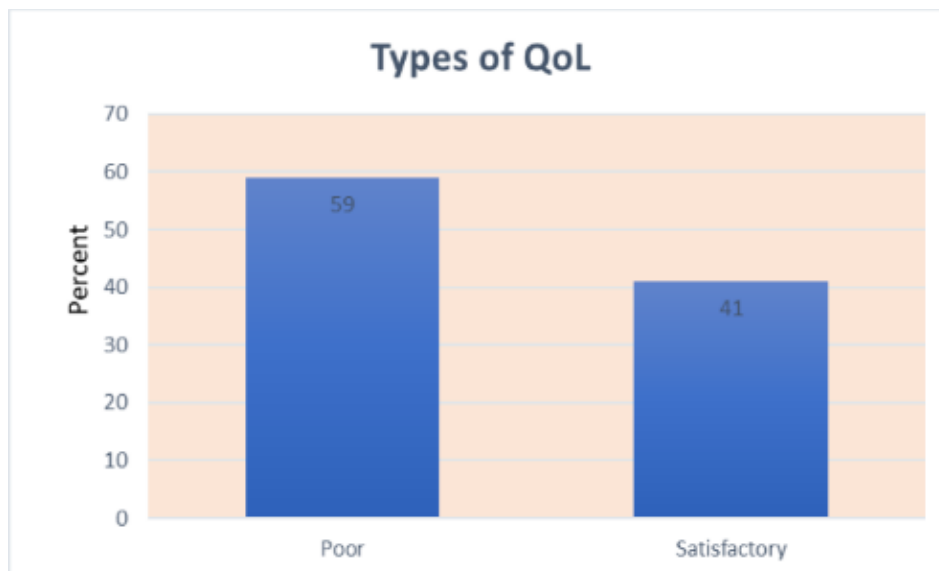


Fig. 1:Age-related houses' respondents' types of QOL

3.2. Factors influencing each domain of the QOL

Multiple linear regression analysis with stepwise approach was done to identify the significant determinants of each domain of QOL. Physical well-being is the first domain, followed by psychological well-being, social connections, and the environment. Pearson's pairwise correlations were used to find the connections between the various areas. With substantial p-values, all domains are positively associated with one another. Correlation coefficients and respective p-values were shown in Table 2, showing moderate strength of correlation between environment and psychological domains and weak correlations between other pairs of domains. The respondents were split into two categories based on a 60% cut-off point: those with poor QOL and those with satisfactory QOL [15,16]. Poor QOL was defined as less than 60% of the overall score, whereas satisfactory QOL was defined as 60% or more of the entire score. In this study, 49 respondents (59%) perceived themselves as poor QOL and the remaining 34 respondents (41%) revealed satisfactory QOL (Fig. 2).

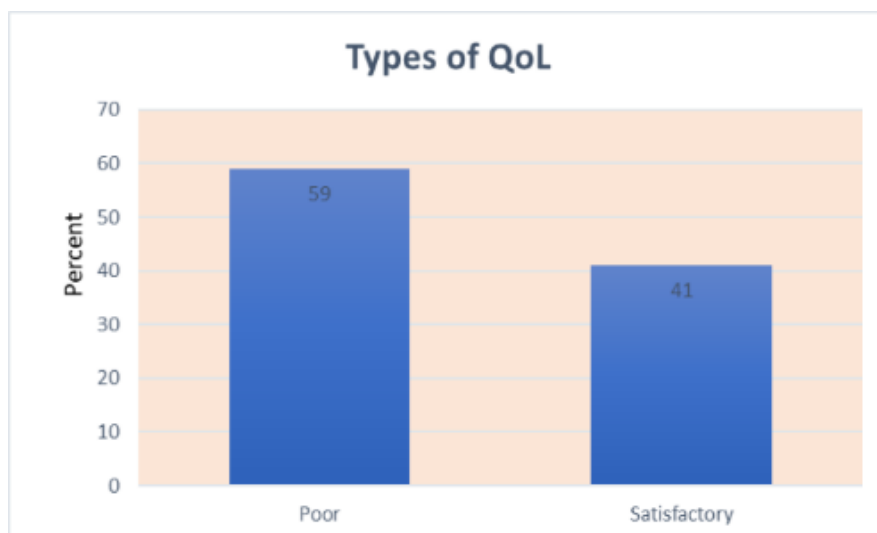


Fig. 2: Types of QoL among the respondents of old age homes

With a step-by-step methodology, multiple linear regression analysis was done to identify the significant determinants of each domain of QOL. Based on Table 3, physical health (Domain1) of the respondents was influenced by gender ($p=0.024$), existing disability ($p=0.012$), role in decision making in the family ($p=0.027$). Weak association was noticed in between physical health and visit paid by friend or family ($p=0.06$).

Table 3. finding the causes of multiple linear regression to determine Physical Health (Domain1)

Variables	Univariate analysis		Multivariate analysis	
	β	p-value	β	p-value
Age	- 0.32	0.045	**	
Gender				
Females	Reference		Reference	
Males	5.78	0.034	5.77	0.024
Race*				
Malay	Reference			
Indian	2.49	0.566		
Chinese	- 1.03	0.776		
Marital status*				
Unmarried	Reference			
Married	2.34	0.499		
SDW	1.76	0.591		
Education*				
Primary	Reference			
Secondary	2.35	0.495		

Tertiary	- 1.63	0.749		
No formal education	- 0.1	0.978		
Occupation*				
Working	Reference			
Retired	- 1.88	0.519		
Never employed	- 4.55	0.418		
Income (Ringgit)				
≤600	Reference			
>600	4.19	0.128	**	
Living condition*				
Alone	Reference			
With family	0.01	0.996		
Disability				
Dependent	Reference		Reference	
Independent	5.85	0.043	6.95	0.012
Visit by friends & relatives				
Present	Reference		Reference	
Absent	- 5.07	0.070	- 5.02	0.064
Role in family decision				
Present	Reference		Reference	
Absent	- 7.05	0.020	- 6.55	0.027
Caretaker				
Present	Reference			
Absent	- 3.55	0.210	**	
BMI	0.58	0.185	**	
NCDs*				
Present	2.13	0.451		
Absent	Reference			

For psychological domain, underlying non-communicable diseases (NCDs) was identified as a significant determinant($p=0.019$). Weak associations were noticed in between psychological domain and existing disability as well as role in family decision ($p=0.054$). The remaining variables did not have any association. (Table 4)

Table 4. Multiple linear regressions to identify the determinants of psychological domain (Domain 2)

Variables	Univariate analysis			
	β	p-value		
Age*	- 0.08	0.622		
Gender				
Females	Reference			
Males	4.38	0.089		
Race*				
Malay	Reference			
Indian	2.70	0.501		
Chinese	5.77	0.089		
Marital status*				
Unmarried	Reference			
Married	3.16	0.331		
SDW	1.37	0.655		
Education*				
Primary	Reference			
Secondary	1.01	0.752		
Tertiary	- 0.98	0.837		
No formal education	1.97	0.571		
Occupation*				
Working	Reference			
Retired	3.95	0.141		
Never employed	- 5.48	0.287		
Income (Ringgit)*	Reference			
≤600	- 0.72	0.781		
>600				
Living condition*	Reference			
Alone	- 2.53	0.341		
With family				
Disability				
Dependent	Reference		Reference	
Independent	4.42	0.104	5.09	0.054
Visit by friends				

& relatives*				
Present	Reference			
Absent	- 0.15	0.954		
Role in family decision				
Present	Reference		Reference	
Absent	- 4.50	0.118	- 5.13	0.065
Caretaker*				
Present	Reference			
Absent	0.77	0.772		
BMI	0.61	0.135	**	
NCDs				
Present	5.98	0.022	5.98	0.019
Absent	Reference			

Table 5 reported the results of multivariate analysis for social relationships (domain 3). Income($p=0.044$), and role in family decision($p=0.047$) were identified as determinants of social relationships among the elderly respondents.

Table 5. Identification of the factors that determine social interactions using multiple linear regression (Domain 3)

Variables	Univariate analysis		Multivariate analysis	
	β	p-value	β	p-value
Age*	0.10	0.804		
Gender				
Females	Reference		Reference	
Males	10.66	0.105	11.22	0.079
Race*				
Malay	Reference			
Indian	- 18.29	0.073		
Chinese	- 0.35	0.967		
Marital status*				
Unmarried	Reference			
Married	9.67	0.238		
SDW	- 4.29	0.579		
Education*				
Primary	Reference			
Secondary	2.15	0.793		
Tertiary	7.72	0.525		
No formal education	7.79	0.379		
Occupation*				
Working	Reference			

Retired	7.97	0.253		
Never employed	2.09	0.876		
Income (Ringgit)				
≤600	Reference		Reference	
>600	- 10.73	0.103	-13.11	0.044
Living condition				
Alone	Reference			
With family	- 9.03	0.183	**	
Disability				
Dependent	Reference			
Independent	8.39	0.230	**	
Visit by friends & relatives*				
Present	Reference			
Absent	- 6.87	0.309		
Role in family decision				
Present	Reference		Reference	
Absent	- 12.10	0.100	- 14.37	0.047
Caretaker*				
Present	Reference			
Absent	- 1.24	0.855		
BMI*				
Present	0.58	0.577		
NCDs*				
Present	- 1.79	0.792		
Absent	Reference			

According to Table 6 , gender(p=0.031), living condition(p=0.017) and BMI(p=0.043) were found to have significant associations with environmental domain.

Table 6. Multiple linear regression to identify the determinants of environmental domain (Domain 4)

Variables	Univariate analysis		Multivariate analysis	
	β	p-value	β	p-value
Age	- 0.26	0.167	**	
Gender				
Females	Reference		Reference	
Males	7.90	0.011	6.55	0.031
Race*				
Malay	Reference			
Indian	0.59	0.906		
Chinese	2.19	0.600		
Marital status*				
Unmarried	Reference			
Married	3.55	0.369		
SDW	1.11	0.767		
Education*				
Primary	Reference			
Secondary	- 1.38	0.726		
Tertiary	- 5.04	0.387		
No formal education	- 1.61	0.703		
Occupation				
Working	Reference		**	
Retired	4.83	0.134		
Never employed	- 10.83	0.081		
Income (Ringgit)*				
≤600	Reference			
>600	- 3.47	0.272		
Living condition				
Alone	Reference		Reference	
With family	- 6.18	0.055	- 7.56	0.017
Disability*				
Dependent	Reference			
Independent	3.40	0.309		
Visit by friends & relatives*				
Present	Reference			
Absent	0.13	0.968		
Role in family decision*				

Present	Reference			
Absent	- 2.68	0.449		
Caretaker*				
Present	Reference			
Absent	0.23	0.944		
BMI	0.92	0.063	1.00	0.043
NCDs				
Present	6.72	0.035	**	
Absent	Reference			
<hr/>				
Occupation				
Working	Reference		**	
Retired	4.83	0.134		
Never employed	- 10.83	0.081		
Income (Ringgit)*				
≤600	Reference			
>600	- 3.47	0.272		
Living condition				
Alone	Reference		Reference	
With family	- 6.18	0.055	- 7.56	0.017
Disability*				
Dependent	Reference			
Independent	3.40	0.309		
Visit by friends & relatives*				
Present	Reference			
Absent	0.13	0.968		
Role in family decision*				
Present	Reference			
Absent	- 2.68	0.449		
Caretaker*				
Present	Reference			
Absent	0.23	0.944		
BMI	0.92	0.063	1.00	0.043
NCDs				
Present	6.72	0.035	**	
Absent	Reference			

NCDs			
Present	6.72	0.035	**
Absent	Reference		

4. Discussion

Based on the findings among elderly inmates, the environmental domain showed the highest mean score 58.7(SD=12.9) while the lowest mean score 44.0(SD=29.9) was noticed in the social domain. Most of the homes had nice gardens and residents got opportunities to involve in garden related activities so that they were more physically engaged and active, showing the highest score of environmental health. However, many inmates were abandoned by their families or relatives and many of them could not catch up their loved ones, explaining the low score in the social domain. Score of each domain Compared to other studies, this one had higher findings, by Onunkworet *al.* in Kuala Lumpur. Homes in Kedah State were more spacious and able to allocate a greater number of inmates than homes in big city like Kuala Lumpur, contributing better environmental situation and meaningful social interaction among the inmates. Also, the survey noted the lowest score in the social sector [17]. The four QOL domains are all positively correlated with one another, according to recent results, and a study conducted in India also found this to be the case [18]. Equally balanced interpersonal relationship, psychological health, physical health and environmental health were crucial in order in maintaining better QOL. It was demonstrated that a person's insight on their wellbeing and life contentment contributed more to QOL than objective measures of life condition [19]. To assess the better QOL, we must consider several domains as in a holistic approach. Approximately 60% of the respondents perceived themselves as poor QOL and 40% perceived as satisfactory QOL in our study. Improving the following factors will result in better services in nursing homes for the elderly: finances, infrastructure, professionalism, collaboration, living arrangements, emotional, cultural, and psychological needs of the elderly. [20].

Physical Domain and associated factors

Gender, disability, and role in decision making in the family were associated to physical health in the current study. Male respondents showed better physical health than females. The outcomes of our research corresponded using the outcomes of research conducted by Onunkworet *al.* [21] and Lepseyet *al.* [22]. Disability like loss or limited use of limbs could affect the daily living activities of elderly which in turn could affect the physical health [23]. Shared decision making could be the feeling of regard and appreciation towards older persons [24]. Having a positive mental health could lower your risk of developing serious illnesses like heart disease and good. Serious health conditions like heart disease and good mental state could keep them physically fit. It was supported by the findings from this study.

Psychological Domain and associated factors

Underlying co-morbid disease, role in family decision were statistically related to psychological health in our study. A study done by Sartorius highlighted that psychological symptoms were associated to physical illness and distress occurred because of chronic diseases[25]. Appropriate management of a disease can help to disappear associated psychological problems. The active participation of elderly persons in the decision-making process was encouraged. So that they perceived themselves as having a role in their family. According to research done by Bunn et al., elderly people preferred to make decisions for them and some of them wanted to share the responsibility with others. This could enhance their self-confidence to cope up with the challenges [24].

Social Domain and associated factors

Income and role in family decision were associated to social relationships in our study. Income was identified as a determinant of health in studies done by Onunkworet *al.* [17] and Chandra *et al.*[26]. Successful decision-making needed propensity to value the intentions, sentiments and beliefs of others [27]. A person who had empathy could maintain better social relationships with people around him and it was supported by our results.

Environmental Domain and related factors

Male respondents showed higher score of environmental domain and this finding supported the findings from the previous studies [17,28]. Moreover living condition was a determinant factor for environmental health based on the research done by Tesfayet *al.* [29] and Lai and Tey[30]. The condition of the kitchen, dining area, baths, and bedrooms, as well as seclusion and a communal area for recreational and leisure activities, were essential for the quality of life of the elderly. Findings in this study reported higher BMI was associated to better QOL. Many studies indicated that Higher BMIs were associated with worse QOL compared to those with lower BMIs. [31–33]. Negative association between BMI and QOL could be true for healthy people. According to the research done by Zawisza *et al.*, reverse finding was noticed in unwell people and whose significant reduction in weight was identified as an indicator of poor QOL [34]. Majority of our respondents had underlying co-morbidity, and this might be an explanation for positive association in between BMI and QOL.

5. Conclusions

The present study found that only 41% of the respondents had satisfactory QOL in old age homes of northern Malaysia. Most of the respondents were satisfied with institutional life as the environmental domain was identified as the most satisfactory domain. Emotional challenges among elderly gave social domain as the weakest result. Gender and role in family decision making were identified as common determinants for QOL among elderly. Findings from the present study may only represent the voice of a few elderly residents in old age homes. Consideration of QOL and associated factors are important in quality improvement and

evaluation of health and social welfare services. QOL should be considered when developing necessary programs for senior citizens by providing more opportunities for social and leisure activities.

Author Contributions:

Conceptualization by T.M.M., L.V., and A.J.; methodology by P.B. and S.T.; software by T.G.; validation by L.S., M.S.K., and V.T.; formal analysis by W.M.O.; investigation by P.B.; resources by L.V.; data curation by S.T., PRS; writing—preparation of the original draft by T.M.M.

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- [1] **Institutional Review Board Statement** The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of Asian Institute of Medicine, Science and Technology (reference number: AUHEC/FOM/2020/03 and date of approval:11/12/2020).
- [2] **Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data is unavailable due to privacy.

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Conflicts of Interest: The authors declare no conflict of interest.

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