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Association Between Level of Sleep Quality and Demographic Variables among Older Persons in Pusat Aktiviti Warga Emas (PAWE) Selangor

Muhammad Azwan Azri[1], Siti Nur Atiqah Mohd Mokhtar[2], Siti Salwa Talib[1], Nur Sakinah Baharudin[1], Husna Ahmad Ainuddin[2], Ahmad Zamir Che Daud[2], Mohd Khairul Anuar Ab Rahim Yang[3], Mohd Azam Abdul Halim[4]

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Abstract

Introduction: Sleep is a natural resting period in order to recuperate after daily exhaustion. Good sleep is essential for both physical and mental health. This paper was aimed to identify the association between the level of sleep quality and demographic data among older persons in Pusat Aktiviti Warga Emas (PAWE) in Selangor. Methods: A cross sectional study was conducted using a socio-demographic profiles and a self-report questionnaire by using Pittsburgh Sleep Quality Index (PSQI). A total of 180 older people aged 65 years and above in seven Pusat Aktiviti Warga Emas (PAWE) in Selangor were recruited for this study. Results: This study found that 67.8% (122) indicate poor sleep quality. Majority the older persons has sleep duration seven-hour which is 35.6%. This study found that there is a significant difference between sleep quality and gender ($p = 0.008$), weight ($p = 0.028$), working status ($p = 0.017$) and level of education ($p = 0.044$). Conclusion: Sleep quality among in PAWE is poor. Occupational therapy interventions will be beneficial in providing activity to overcome occupational deprivation and nurturing good sleep hygiene.

Keywords: Occupational Therapy, Sleep Quality, Older Persons, Community.

Introduction

Ageing is the process of becoming older. According to the Social and Welfare Malaysia portal, older person is a person who is 60 years old and above (JKM, 2017). Ageing refers to a gradual and time related to a biological process that takes place such as degenerative processes which overtake regenerative or growth processes (Rattan, 2006).

Preparing for an ageing population in Malaysia, the government takes action to create Pusat Aktiviti Warga Emas (PAWE) as a medium to occupy them with daily activities.

According to the goal National Health Policy of Older Person, the purpose of PAWE is to obtain maximum health for the older person through integrated and comprehensive health and health-related services. PAWE is designed to give older persons opportunities to involve in social participation and continue the role as part of the community. PAWE was established up to 60 centres covering each parliamentary area in Malaysia. The ultimate purpose of PAWE is to improve the quality of life.

Sleep is a natural resting period in order to recuperate after daily exhaustion. Good sleep is essential for both physical and mental health (Asghari, Farhadi, Kamara and et al., 2012). The benefit of good sleep leads to the optimal level of occupational performance, participation and engagement in everyday life.

Sleep is essential for the functioning and quality of life. Insufficient sleep can lead to metabolic dysfunction, obesity, hypertension, heart attack, stroke (Altman et al., 2012). Deep sleep is defined as a habitual sleep length of at least 9 hours (Frange et al., 2014).

According to Occupational Therapy Practice Framework 4th edition (2020), sleep and rest are components from the performance area that are evaluated and implemented to produce good quality of life. Previous studies about sleep quality among older person are still limited and scarce. Thus, the result of this study will provide information to care provider about level of sleep quality amongst this population. Therefore, this information is useful to it provide a better picture about relationship between sleep quality and demographic variables of older persons.

This paper is aimed to identify the association between the level of sleep quality and demographic data among older persons in PAWE in Selangor.

Literature Review

Sleep is the behavioural action show by the level of arousal, cognitive and sensory with is unresponsiveness with the surrounding. The sleep process involves behavioural and physiologic process. Usually, alternate changing between rapid eye movement (REM) and non–REM (NREM) are cycling for the sleep episode. When a person is sleeping, it will be showing some characteristics such as a postural recline, no volunteer physical or behavioural movement and closed both eyes, (Carscadon et al., 2011).

The Sleep Cycle

A study conducted by Carscadon et al (2011) has mentioned that sleep has four-stage cycles to complete. In stage one, the onset of sleep for healthy adults usually only a few minutes around one to seven-minute. At this stage, calling a person's name, a light touch, a slow sound like quietly closing the window, making the person who sleeps been easily awake. At this stage, sleep has easily been a disturbance and easily awake because stage one is to have a relationship with a low arousal threshold. Furthermore, to its role in the initial wake-to-sleep transition, stage one sleep occurs as a transitional stage throughout the night. A common sign of severely sleep disturbance is increased at stage one.

In stage two are known- rapid eye movement (REM), continues sleep from stage one is around ten to twenty-five minutes. This stage required more stimuli to awake. Sleep is continuous, progressive and high-voltage slow-wave activity increase.

In stage three, it is carry on activity from stage one which non- rapid eye movement (NREM) have high voltage (at least 75 µV) slow-wave. The high voltage slow-wave activity at this stage is more progressive. The action takes a few minutes in the first cycle before the transition to stage four.

In stage four, 50% high voltage slow-wave activity of NREM around 20 to 40 minute occurs. In this stage, a broad stimulation is required to make a person awake and arousal from sleep compared in an early stage at one and two. The person in this stage four is achieved deep sleep or know as delta sleep. Delta sleep is a slow wave from combination stage three and four.

The Importance to Study Sleep Quality

Some mental, behaviour and physical are a major issued in public. Usually, the issued have related to sleep quality. Bad mood, easily angry, confused, weakness and not alert are some symptom that shows if a person lack in sleep. Sometimes, we can't differentiate between sleep quality symptoms related to the significant issued. There are limited studies about the relationship between the role of Occupational Therapy with sleep. The important to studying about sleep can help occupational therapy to understand more about sleep, especially in the elderly. Poor sleep quality can lead to a mental symptom (Augner, 2011).

How the Issues/variables Lead to a Research Problem

In Pittsburgh Sleep Quality Index (PSQI), question number 5a until 5j are assets sleep disturbance. From this study, we can find the most sleep disturbance in the elderly. Environment, pain, snoring, coughs, wake up in the middle night, used bathroom, and difficulty to initial sleep is a possible factor of sleep disturbance. Hock set al (1988), stated from his survey 100 participants were involved, and the result show majority sleep disturbance is nocturia which is 59 %, factor cough and breathing issued are respectively 16%, and pain is 12% and other reason such as environment, dreaming and muscle cramps. The elderly who have a chronic illness can lead to insomnia, especially some elderly who taking medication. Some medication can have disturbed sleep quality. Thus, the result from the study can arrange the proper intervention for the elderly due to the sleep pattern of the elderly.

According to Wolkove et al. (2007), ageing has related to the level of sleep quality. Sustain in staying sleep until morning is some issued in the elderly. Usually, almost the elderly have insomnia that disturbed in falling sleep in the early stage and maintained the sleep (Neubauer, 1999). Madrid-Valero et al (2017) Stated age is related to poor sleep quality. He also noted that females have poor sleep quality compare to the man. This is because the female always has secondary issued like menopause, stress, depression, and anxiety.

Research Method

Study Design

This is a quantitative research survey using a cross-sectional approach, which is a type of observational study design. Quantitative studies are analyzed using statistics (mathematic method) of numeric data to explain particular questions or phenomena (Muijs, 2011). Descriptive research or cross-sectional is to determine the characteristics in population like social demographic data (age, weight, marital status). It cannot describe cause, effect, and relationship between different variables. It recorded by the population but not change the variable (Song & Chung, 2010).

Study Setting

The study setting refers to the location where data are collected; for this study, data were collected at seven (7) Pusat Aktiviti Warga Emas (PAWE) in Selangor. The areas are as below:

1. PAWE Sungai Buloh, Kompleks Penyayang Bakti Sg. Buloh, Selangor
2. PAWE Jenjarom, Selangor
3. PAWE Sabak Bernam, Sungai Besar, Selangor
4. PAWE Kg. Kenanga, Rawang, Selangor
5. PAWE Kg. Sri Langkas Tambahan, Puchong, Selangor
6. PAWE Felda Bukit Cherakah, Kapar, Selangor
7. PAWE Taman Sri Kantan, Kajang, Selangor

Sampling Design

Selection of sample to fit in the study called a purposive sample. A purposive sample is researching selected for their sample in specific criteria.

Inclusion Criteria of Sampling

1. Age 65 and above.
2. Literate with good command in English and Malay language.

Exclusion Criteria of Sampling

1. The elderly have a severe physical impairment.
2. Elderly people dependent on Activity Daily Living
3. Elderly need assistance in Insrustment Activity Daily Living

Instruments

Self-administered questionnaires that are valid and reliable are chosen and be using for this data collection. Two assessment used are:

1. Demographic Form
2. Pittsburgh Sleep Quality Index (PSQI)

Statistical Methods

Data collection from the questionnaire is filled to the Microsoft Excel spreadsheet. The item is categorized by theme. Next, date in excel was imported into the Statistical Package for Social Sciences (SPSS, version 21.0 (SPSS Inc. Chicago IL, USA) use to analyze all data. The data will generate output, such as in tables, graphs, and statistics. The descriptive statistical analysis was used to calculate variables such as weight, age, gender, educational level,

working status, number of being taking care, marital status, living with family members and number of illnesses.

Results

Demographic Data

There are 180 respondents in the study, which is by gender in male 39.4% (71) and female 60.6% (109). For age, there is 83.9% (151) for 65 to 75 years old, 13.9% (25) for 76 to 85 years old and 2.2% (4) for 86 to 94 years old. Next variable is the weight for 1.1% (2) for the weight below 39kg and followed by 10.6% (19) for 40kg to 50 kg, 23.3% (42) for 51 kg to 60 kg, 27.2%(49) for 61kg to 70kg, 22.8%(41) for 71kg to 80 kg, 12.8%(23) for 81kg to 90 kg and 2.2%(4) for 90kg above. Next for the education level, mostly respondent are in primary school which is 31.1% (56), follow by Malaysia Certification Education 21.1% (38), secondary school 18.9(34), not school 15.6(28), diploma 8.3% (15), degree 3.9% (7) and master degree 1.1%(2).

The majority of elderly 51.7% (93) is no working, 37.8% (68) are retired, 7.8% (14) are self-employed, and 2.8(5) are agricultural. For the marital status, the single is 3.9% (7), married 71.7(129), divorced 11.1% (20) and widow 13.3% (24). 88.9% (160) respondents are staying with family, and 11.1% (20) are no stay with family. There are a number of family taking care by respondent is 37.2% (67) is 0 to 1, 34.4% (62) for 2 to 3, 18.3% (33) for 4 to 5, 4.4% (8) for 6 to 7, 3.3% (6) for 8 to 9 and 2.2% (4) for 10 and above. Next is, 1.1% (2) are no any medical illness, 31.7% (57) has one medical illness, 32.2% (58) has two medical illness, 32.2 (58) has three medical illness and 2.2% (4) have four medical illness and 6%(1) are have five medical illness. The distributions are as in Table 1.

Table 1
Socio-demographic characteristic of elderly people (n=180)

Variable of Demographic Data	**n (%)**
Gender	
Male	71(39.4)
Female	109(60.6)
Age	
65 to 75	151(83.9)
76 to 85	25(13.9)
86 to 94	4(2.2)
Weight	
Below 39kg	2(1.1)
40kg to 50 Kg	19(10.6)
51kg to 60kg	42(23.3)
61kg to 70kg	49(27.2)
71kg to 80kg	41(22.8)
81kg to 90kg	23(12.8)
90kg Above	4(2.2)
Education level	
Not school	28(15.6)
Primary School	56(31.1)
Secondary School	34(18.9)

Malaysian Certificate of Education (MCE)/*SPM*	38(21.1)
Diploma or Malaysian Skills Certificate *in Malaysia*	15(8.3)
Degree	7(3.9)
Master's Degree	2(1.1)
Working status	
Not working	93(51.7)
Retired	68(37.8)
Agricultural	5(2.8)
Professional	0
Self-employed	14(7.8)
Labour worker	0
Marital status	
Single	7(3.9)
Married	129(71.7)
Divorce	20(11.1)
Widow	24(13.3)
Number of families	
0-1	67(37.2)
2-3	62(34.4)
4-5	33(18.3)
6-7	8(4.4)
8-9	6(3.3)
10 and above	4(2.2)
Stay with family	
Yes	160(88.9)
No	20(11.1)
Number of illness	
0	2(1.1)
1	57(31.7)
2	58(32.2)
3	58(32.2)
4	4(2.2)
5	1(6)

Level of Sleep Quality

Table 2

The level of sleep quality

Quality of sleep	**Frequency (n)**	**Percent (%)**
Good sleep quality	58	32.2
Poor sleep quality	122	67.8
	n =180	

Table 2 shows the level of sleep of quality among elderly attending Pusat Aktiviti Warga Emas (PAWE) in Selangor. From the total of respondents, 180 elderly involved in this study. The result showed 32.2%(58) elderly indicate good sleep quality and 67.8%(122) indicate poor sleep quality

Association between the level of sleep quality and demographic data (*weight, age, gender, educational level, working status, number of being taking care, marital status, living with family members and number of illnesses)*

Hypothesis one: Sleep quality with the number of genders

Table 3

Sleep quality with the number of genders (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
Male	71	31 (43.7 %)	40 (56.3 %)	7.026(1)	0.008
Female	109	27 (24.8 %)	82 (75.2 %)		

H0: There is no association between sleep quality and gender
Ha: There is an association between sleep quality and gender

Based on the result in Table 3 show p-value is 0.008 means there is a significant association between level sleep quality with gender among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, an accepted alternative hypothesis. Based on graph one show frequency sleep quality and gender on 180 subjects. Elderly who in poor sleep quality 56.3 % (40) are male and 75.2 % (82) are female. In good sleep quality, 43.7% (31) are male, and 24.8% (27) are female.

Hypothesis two: Sleep quality with age

Table 4

Sleep quality with age (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
65 to 75 years old	151	50 (33.1 %)	101 (66.9 %)	0.354(2)	0.838
76 to 85 years old	25	7 (28 %)	18 (72 %)		
86 to 94 years old	4	1 (25 %)	3 (75 %)		

H0: There is no association between sleep quality and age
Ha: There is an association between sleep quality and age

Based on the result in Table 4 shows p-value is 0.838 means there is no significant association between level sleep quality with weight among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, reject the alternative hypothesis. Based on a graph 4.4.2 to show the frequency of sleep quality and age in 180 subjects. Elderly in poor sleep quality in age 65 to 75 years' old which is 66.9% (101) and 33.1% (50) is good in quality of sleep, follow by 76 to 85 years' old 72% (18) are poor sleep quality and 28%(7) is good sleep quality and supported by 86 to 94 years old is 75% (3) is poor sleep quality and 25% (1) is good sleep quality. There show in the age of 65 to 75 years old commonly have poor sleep quality.

Hypothesis three: Sleep quality with a number of medical illness

Table 5

Sleep quality with a number of medical illness (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
1	2	1 (50 %)	1 (50 %)	2.307(5)	0.805
2	57	18 (31.6 %)	39 (68.4 %)		
3	58	22 (37.9 %)	36 (62.1 %)		
4	58	16 (27.6 %)	42 (72.4 %)		
5	4	1 (25 %)	3 (75 %)		
6	1	0	1 (100 %)		

H0: There is no association between sleep quality and number of medical illness
Ha: There is an association between sleep quality and number of medical illness

Based on the result in Table 5 shows p-value is 0.805 means there is no significant association between level sleep quality with the number of medical illnesses among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, reject the alternative hypothesis.

Based on Table 5, the result shows the frequency of sleep quality and the number of medical illness in 180 subjects. The elderly who have one medical illness is 50% (1) in good sleep quality, and 50% (1) is poor sleep quality. For elderly who have two numbers of medical illnesses are 68.4% (39) are poor sleep quality, and 31.6% (18) are good sleep quality. For elderly who have three number of medical illness show poor sleep quality, which is 62.1% (36) and 37.9% (22) are good sleep quality. For elderly who have four number of medical illness is 72.4% (42) indicate poor sleep quality and 27.6% (16) indicate good sleep quality. For elderly who have five number of medical illness is 75% (3) indicate poor sleep quality and 25% (1) show good sleep quality. For elderly who have six number of medical illness is 100% (1) indicate poor sleep quality and 0% in good sleep quality. Based on the result shows the number of medical illnesses, sleep quality becomes poor. In this study show, four and three number of medical illnesses are higher in poor sleep quality.

Hypothesis four: Sleep quality with weight

Table 6

Sleep quality with weight (n=180)

Variable		n	Good sleep quality n (%)	Poor sleep quality n (%)	X2 statistic (df)	P-value
Below 39		2	0 (0%)	2 (100%)	14.12(6)	0.028
40kg to 50 kg		19	5 (26.3%)	14 (73.7%)		
51kg to 60 kg		42	7 (16.7%)	35 (83.3%)		
61kg to 70 kg		49	16 (32.7)	33 (67.3 %)		
71kg to 80kg		41	19 (46.3%)	22 (53.7 %)		
81kg to 90kg		23	11 (47.8%)	12 (52.2 %)		
90kg above		4	0 (0 %)	4 (100 %)		

H0: There is no association between sleep quality and weight
Ha: There is an association between sleep quality and weight

Based on the result in Table 6, show the p-value is 0.028 means there is a significant association between level sleep quality with weight among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, an accepted alternative hypothesis.

Based on Table 6, the frequency of sleep quality and weight on 180 subjects. The elderly who weight below 39 is 100% (2) show poor sleep quality and 0%. For the elderly who age 40kg to 50kg is 73.7% (14) represent poor sleep quality, and 26.3% (5) represent good sleep quality. For the elderly who weight 51kg to 60kg is 83.3% (35) represent poor sleep quality, and 32.7% (16) represent good sleep quality. For the elderly who weight 61kg to 70kg is 67.3% (33) represent poor sleep quality, and 32.7% (16) represent good sleep quality. For the elderly who weight 71kg to 80kg is 53.7% (22) represent poor sleep quality, and 46.3% (19) represent good sleep quality. For the elderly who weight 81kg to 90kg is 52.2% (12) represent poor sleep quality, and 47.8% (11) represent good sleep quality. For the elderly who weight 90kg above 100% (4) represent poor sleep quality, and 0% represents good sleep quality. This study show elderly who weight 51kg to 60 kg show the higher poor sleep quality, followed by 61kg to 70kg and followed by 71kg to 80kg.

Hypothesis five: Sleep quality with working status

Table 7

Sleep quality with the number of working status(n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
Not working	93	21 (22.6 %)	72 (77.4 %)	10.216(3)	0.017
Retired	68	30 (44.1 %)	38 (55.9 %)		
Self-employed	14	4 (28.6 %)	10 (71.4 %)		
Agricultural	5	3 (60 %)	2 (40%)		

H0: There is no association between sleep quality and working status
Ha: There is an association between sleep quality and working status

Based on the result in Table 7 show p-value is 0.017 means there is a significant association between level sleep quality with working status among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, an accepted alternative hypothesis.

Based on Table 7, it shows the frequency of working status in 180 subjects. For the elderly who are not working, 77.4%(72) are poor sleep quality, and 22.6%(21) are good sleep quality. For the elderly who are retired 55.9%(38) are poor sleep quality and 44.1%(30) are good sleep quality. For the elderly who are self-employed, 71.4%(10) are poor sleep quality, and 28.6%(4) are good sleep quality. For the elderly who are agricultural, 40%(2) are poor sleep quality, and 60%(3) are good sleep quality. This study show elderly who are not working show an increased in poor sleep quality.

Hypothesis six: Sleep quality with a number of taking care

Table 8

Sleep quality with the number of taking care (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
1	67	20 (29.9 %)	47 (70.1 %)	2.530 (5)	0.772
2	62	24 (38.7 %)	38 (61.3 %)		
3	33	8 (24.2 %)	25 (75.8 %)		
4	8	3 (37.5 %)	5 (62.5 %)		
5	6	2 (33.3 %)	4 (66.7 %)		
6	4	1 (25 %)	3 (75 %)		

H0: There is no association between sleep quality and number of taking care
Ha: There is an association between sleep quality and number of taking care

Based on the result in Table 8 show p-value is 0.772 means there is no significant association between level sleep quality with the number of taking care among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, reject the alternative hypothesis.

Based on Table 8 shows the frequency sleep quality and number of family being take care of 180 subjects. For the elderly who have one family to take care to represent 70.1%(47) indicate poor sleep quality and 29.9%(20) indicate good sleep quality. For the elderly who have two family members to take care to represent 61.3%(38) indicate poor sleep quality and 38.7%(24) indicate good sleep quality. For the elderly who have three family members to take care to represent 75.8%(25) indicate poor sleep quality and 24.2%(8) indicate good sleep quality. For the elderly who have four family members to take care to represent 62.5%(5) indicate poor sleep quality and 37.5%(3) show good sleep quality. For the elderly who have five family members to take care to represent 66.7%(4) indicate poor sleep quality and 33.3%(2) show good sleep quality. For the elderly who have six family members to take care to represent 75%(3) indicate poor sleep quality and 25%(1) indicate good sleep quality. On this study, the small number of family being take care show increase in poor sleep quality.

Hypothesis seven: Sleep quality with marital status

Table 9

Sleep quality with the number of marital statuses (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
Single	7	2 (28.6 %)	5 (71.4 %)	6.264(4)	0.099
Married	129	48 (37.2 %)	81 (62.8 %)		
Divorced	20	5 (25 %)	15 (75 %)		
Widow	24	3 (12.5 %)	21 (87.5 %)		

H0: There is no association between sleep quality and marital status
Ha: There is an association between sleep quality and marital status

Based on the result in Table 9, show the p-value is 0.099 means there is no significant association between level sleep quality with marital status among elderly attending PAWE in

Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, reject the alternative hypothesis.

Based on Table 9 shows the frequency of sleep quality and marital status on 180 subjects. For the elderly who are single status represent 71.4%(5) in poor sleep quality and 28.6%(2) in good sleep quality. For the elderly who are married status represents 62.8%(81) in poor sleep quality and 37.2%(48) in good sleep quality. For the elderly who are divorced status represents 75%(15) in poor sleep quality and 25%(5) in good sleep quality. For the elderly who are widow status represent 87.5%(21) in poor sleep quality and 12.5%(3) in good sleep quality. This study shows the elderly who are married status have poor sleep quality.

Hypothesis eight: Sleep quality with stay with family

Table 10

Sleep quality with stay with family (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
Yes	160	53 (33.1 %)	107 (66.9 %)	0.537(1)	0.464
No	20	5 (25 %)	15 (75 %)		

H0: There is no association between sleep quality and stay with family
Ha: There is an association between sleep quality and stay with family

Based on the result in Table 10, show the p-value is 0.464 means there is no significant association between level sleep quality with stay with family among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, reject the alternative hypothesis.

Based on Table 10 shows the frequency of sleep quality based on stay with family in 180 subjects. For the elderly who are staying with the family show, 66.9%(107) are poor sleep quality, and 33.1%(53) are good in sleep quality. For the elderly who are not stay with the family show, 75%(15) are poor sleep quality, and 25%(5) are good in sleep quality. This study show elderly who are staying with family show poor sleep in quality.

Hypothesis nine: Sleep quality with a level of education

Table 11

Sleep quality with the level of education (n=180)

Variable	n	Good sleep quality	Poor sleep quality	X2 statistic (df)	P-value
Not school	28	6 (21.4 %)	22 (78.6 %)	12.955(6)	0.044
Primary school	56	17 (30.4 %)	39 (69.6 %)		
Secondary School	34	10 (29.4 %)	24 (70.6 %)		
SPM	38	15 (39.5 %)	23 (60.5 %)		
Diploma	15	4 (26.7 %)	11 (73.3 %)		
Degree	7	6 (85.7 %)	1 (14.3 %)		
Master Degree	2	0 (0)	2 (100%)		

H0: There is no association between sleep quality and the level of educational
Ha: There is an association between sleep quality and the level of educational

Based on the result in Table 11 show p-value is 0.044 means there is a significant association between level sleep quality with the level of education among elderly attending PAWE in Selangor state. The significant value is set as the p-value (Set α=0.05 (two-tailed)). Therefore, accept the alternative hypothesis.

Based on Table 11 shows the frequency sleep quality and level of education based on 180 subjects. For the elderly who are not school show, 78.6% (22) indicates poor sleep quality and 21.4% (6) indicate good sleep quality. For the elderly who are primary school show, 69.6% (39) indicates poor sleep quality and 30.4% (17) indicate good sleep quality. For the elderly who are secondary school show, 70.6% (24) are indicate poor sleep quality and 29.4% (10) indicate good sleep quality. For the elderly who are SPM show, 60.5% (23) are indicate poor sleep quality and 39.5% (15) indicate good sleep quality. For the elderly who are diploma show, 73.3% (11) indicates poor sleep quality and 26.7% (4) indicate good sleep quality. For the elderly who are degree show, 14.3% (1) indicates poor sleep quality and 85.7% (6) indicate good sleep quality. The elderly who are master's degree show 100% (2) indicates poor sleep quality. This study shows that primary school shows an increased in poor sleep quality.

Conclusion

Sleep quality in the elderly based on demographic data shows that the elderly has poor sleep quality even involved in a community activity. The participant was choosing is actively come to Pusat Aktiviti Warga Emas in Selangor.

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