Original Article

Lifestyle modification practice in rural community at Kedah in Malaysia : A cross sectional study

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ABSTRACT

Background and Objectives: Lifestyle modification practice which includes weight reduction, salt restriction, physical activity, smoking cessation and consuming healthy food is the foundation of prevention and control of chronic diseases. This non pharmacological approach can be an initial treatment of some non-communicable diseases (NCDs) before the start of a medication or in conjunction to a medication. This study was conducted to establish the knowledge and practice regarding lifestyle modification among a rural community.

Material and Methods: This cross-sectional study was conducted by using structured questionnaires among 60 respondents in village 'Kampung Baru' in Sungai Petani town at Kedah state in Malaysia from September 1 to October 30, 2017.Simple random sampling was used to select study subjects. Their knowledge and practice regarding lifestyles modification were assessed. Data were analyzed through Statistical Package for Social Sciences (SPSS).

Results: The study revealed that the mean ± SD age of respondents was 43.4 ± 19.17 years. Among the respondents 79.9% had good basic knowledge regarding lifestyle modification practices. 96.6% received formal education. Respondents with monthly income of more than 1000 Ringgit (58.3%) were more likely to practice good lifestyle modification practice as compared to those with monthly income of less than 1000 Ringgit. Majority of respondents 38(63.3%) are being involved in physical activity for 30 min per day. The study shows the lower prevalence of overweight (30.2%) and obesity (15.1%) amongst the participants. 83.3% practiced recommended low salt diet, 65% participants are non-smokers and 90% practiced abstinence from alcohol drinking. 56.7% of the respondents were not suffering from any type of illness.

Conclusion: In this study majority of the respondents has the positive attitude towards the recommended lifestyle modification practices, while 43.3% respondents are less likely to practice good lifestyle modification. This can be made more effective by sharing the knowledge and attitude, so that a sustainable environment can be created throughout the community.

Keywords:

Lifestyle modification, rural community, physical exercise, awareness, weight management, prevention.

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INTRODUCTION

Lifestyle modification practice is the first-line treatment for a range of non-communicable disease such as diabetes, cardio-vascular diseases (CVD), obesity, mental illness, cancer etc. Healthy diet includes regular intake of green vegetables, fresh fruits and a reduction of sodium ,saturated and transfat ,sugar, and alcohol intake.[1,2]

Sedentary life style is one of the key factors for most of the chronic diseases which can be prevented by practicing healthy behaviors. Adapting healthy lifestyle from early childhood is directly related to the development of physical, mental and social aspect of the individual as well as the community health.[3] Practicing healthy life style may facilitate drug step-down and even drug withdrawal in highly motivated individuals.[4,5]

According to WHO up to 2020, non-communicable diseases will be

the leading cause of mortality in developing countries worldwide.[6] An USA study in 1993 showed that 14% of mortality were associated with nutritional and physical activity patterns and 23% of death belonged to non-communicable diseases.[7] Strengthening social network is one of the effective ways to achieve behavioral modification where peer-pressure has a key role.[1,2]

American Heart Foundation (AHA) has identified low physical activity as other vital modifiable risk factors for cardiovascular disease other than the smoking, hypertension and hypercholesterolemia.[8,9] Disease burden is closely associated with smoking, uncontrolled alcohol consumption, and obesity.[10,13] WHO survey on obesity and overweight shows that worldwide in 2016 about 13% adult population were suffering from obesity; among them 11% and 15% were male and female respectively and over 340 million children and adolescent were overweight and obese.[14] Inadequate physical activity is one of the major causes for global mortality. Regular physical activity for 150 minutes per week can reduce the risk of diabetes, ischemic heart disease, stroke, colon cancer, hypertension and depression by 20% to 30%.[15] Maintaining balance between energy intake and exercise can lead an individual as well as a community to live a healthy life.[16]

This study was aimed to determine the effect of life style modification practice- related knowledge, attitude and behavior in a rural community at Kedah state in Malaysia.

MATERIAL AND METHODS

A descriptive cross-sectional study was conducted in village 'Kampung Baru' in Sungai Petani town at Kedah state in Malaysia, from September 1 to October 30, 2017. The source population was all community people both male and female in Kampung Baru village. The study population was sixty, above 18 years of age, were randomly selected. People who were severely ill and not able to communicate and the children were excluded from the study. The purpose of the study was explained to the study participants at the time of data collection and verbal consent was secured from each participant before the start of data collection. Confidentiality was insured by not including names or other identifiers in the data collection tool. The right of the participants to refuse participation or not to answer any of the questions was respected.

Data were collected by the III year MBBS students of AIMST University, Malaysia. They used face to face interview method. The socio-demographic, health

profiles of participants, knowledge on hypertension, and source of information of the study participants were collected using an interview based structured questionnaire adapted from the WHO manual and reviewing different literatures.[17]

The questionnaire was pre-tested in 5% of total eligible respondents from another village of Kedah state for their accuracy and consistency prior to actual data collection. Furthermore, the supervisor and the investigator were given feedback and corrections on daily basis to the data collectors. Completion, accuracy, and clarity of the collected data were checked carefully on a regular basis.

The questions used in the questionnaire were related to the socio-demographic characteristics, the health profile and the knowledge about life style modification practices of the respondents.

Physical characteristics (height and weight) were measured. Lifestyle modification practice was measured using physical exercise, low salt diet, alcohol consumption, smoking, caffeinated drink consumption, home cooked food, fast food consumption, BMI and weight management practices.

The lifestyle modification practice was classified as a 'good practice' and 'poor practice'. Respondents were labeled to have "good" 'lifestyle modification practices if they scored above the mean in all recommended lifestyle questions. Body weight and height measurements were taken during data collection. Body mass index (BMI) was calculated from the weight and height. BMI (kg/m2) was categorized as normal weight $(18.5 \leq BMI < 24)$, overweight $(24 \leq BMI < 28)$, and obese $(BMI \geq 28)$ using the WHO recommendations [17.]

The details of weight management measurements collected are given in Table 1.

Operational definitions: Respondents who scored mean or above the mean score on practice questions were considered as practicing *Good lifestyle modification* and others were considered as practicing *Poor lifestyle modification.*

Sample size determination

Random sampling was done to obtain the study sample. The formula that was used for calculation of the required Sample size is: $n = Z^2P (1-P) / d^2$, n = sample size Z = Z statistic for a level of confidence

(1.96 for level confidence of 95%) P = expected prevalence or proportion (0.2), d = precision (0.05). Using population correction formula and adding 10% non-response rate the sample size was 60.

After collection of data, they were checked for completeness and were entered into Epidata 3.1 version and exported to SPSS 22.0 version for further analysis. Descriptive statistical analysis such as proportion, frequency distribution, means, and the measure of dispersion was used to describe data and analytical statistics including bivariate and multivariable logistic regression analysis was done. Bivariate logistic regression was done to examine the association between dependent and independent variables. After running bivariate logistic regressions, all variables with $p < 0.25$ was considered as a candidate for the final model and corresponding p-value of <0.05 was considered as statistically significant. Adjusted odds ratio at 95% CI was considered to declare the independent effect of independents variables on the outcome.

Table 1: Details of weight management measurements

SI No.	Measurements collected	Details of items and scoring
1	Low-salt diet	• 10 items were used to assess practices related to eating a healthy diet, avoiding salt while cooking and eating, and avoiding foods high in salt content. A mean score was calculated. • Scores of five or better indicate that patients followed the low-salt diet and considered as having good low salt diet practice.
2	Physical activity	• Assessed by 2 items. (1) How many of the past 7 days did you do at least 30 minutes total of physical activity? (2) How many of the past 7 days did you do a specific exercise activity (such as swimming, walking, or biking) other than what you do around the house or as part of your work? • Responses were summed (Range 0–14). Patients who scored eight and above were coded as a having good physical activity practice. All others coded as poor practice.
3	Smoking status	• Assessed with 1 item. "How many of the past 7 days did you smoke a cigarette?" • Respondents who reported 0 days were considered a nonsmoker.
4	Alcohol intake	• Assessed using 3-items. Participants who report not drinking any alcohol in the last 7 days or who indicated that they usually did not drink at all were considered abstainers. • All others were considered as not having a good practice of alcohol consumption.
5	Caffeinated drink	• 5 items were being used to assess practices related to caffeinated drink consumption based on cups/week. • Respondents taking more than 5 cups/week were being considered as not having good practices of caffeinated drink consumption.
6	Water consumption	• 4 items were used to assess practices related to consuming sufficient amount of water based on consuming glass of water /day. • Respondents taking 6-8 glasses /day indicate that they are taking sufficient amount of water.
7	Eating home cooked food	• Assessed using 3-items. Respondents who report not cooking at home in last 2 weeks or who indicated that usually they did not cook was considered as having not a good practice. • All others were considered as having a good practice of home made food consumption.
8	Fast food	• 3 items were used to asses to practices related to eating fast food in last two weeks. Respondents who report not taking any fast food at all or occasionally taking in the last two weeks were considered abstainers. • Others were being considered as regular fast food consumers.
9	Weight management	• 5 items were used to assess activities undertaken to manage weight through dietary practices such as reducing portion size and making food substitutions as well as exercising to lose weight. Items assessed agreement with weight management activities during the past 30 days. Response categories ranged from strongly disagree (1) to strongly agree (5).

Responses were summed creating a range of scores from 10 to 50. Participants who report that they agreed or strongly agreed with all ten items (score≥40) were considered to have good weight management practice.

RESULTS

The socio-demographic characteristics of study subjects are given in Table 2. The total number of respondents was 60. The mean±SD age of respondents was 43.4 ± 19.17 years. Among the respondents more than half 32(53.3%) of them were females. Concerning their ethnicity: 45(75%) were Malays, 12(20%) were Chinese and 3(5%) were Indians. Among them 45(75%) were Muslims. Regarding the educational status of subjects, 2(3.3%) has no formal education, 34(56.7%) was at the secondary level and 6(10%) was at the tertiary/college level. (Table 2). Average monthly income for 25(41.7%) of them was less than 1000 Ringgit, for 20(33.3%) of them was 1001 to 2000 Ringgit and 4(6.7%) of them was more than 5000 Ringgit. Concerning their family members 22(36.7%) has more than 5 in their families.

The data of lifestyle modification practice are summarized in Table 3. Among the respondents 38(63.3%) practiced physical activity for 30 min per day. The mean±SD score of weight management practice of the participants were 61.2 ±61.2 and the BMI is 24.44±7.12. Among the respondents, 50 (83.3%) practiced recommended low salt diet. Fifty four (90%) did not drink alcohol in the last 7 days. Concerning smoking habit thirty nine (65%) were not a smokers. Among the respondents 49 (81.7%) preferred home cooked food. Concerning water consumption 25 (81.7%) respondents were drinking sufficient of water per day.

Health profile related, individual related and source of information related factors

From the respondents who had basic knowledge about hypertension, 48(80%) practiced good lifestyle modification and those who had good control of blood pressure, 31(51.7%) practiced good lifestyle modification. From those who had a basic knowledge about Food Pyramid, 50(83.3%) practiced good lifestyle modification. From those who were informed by health professionals, 24(40%) and those by different medias, 15(25%) practiced good lifestyle modification. (Table 4).

Factors associated with lifestyle modification practice among the respondents

Age, educational status, monthly income, co-morbidity status, information about lifestyle and the source of information were entered into the final l model. According to the result of the multivariable analysis, all these factors were independent predictors of good lifestyle modification practice among the respondents.

Table 2: Socio-demographic characteristics of Kampung Baru in, Sungai Petani at Kedah in Malaysia, September 2017 [N=60*]*

Variable	Frequency	Percentage
Age		
10-20	10	16.7
21-30	7	11.7
31-40	9	15.0
41-50	11	18.3
51-60	9	15.0
61-70	8	13.3
>71	6	10.0
Gender		
Male	28	46.7
Female	32	53.3
Number of Family members		
1	3	5.0
2	7	11.7
3	10	16.7
4	10	16.7
5	8	13.3
>5	22	36.7
Educational status		
Primary	18	30.0
Secondary	34	56.7
Tertiary	1	1.7
College	5	8.3
Nil	2	3.3
Religion		
Islam	45	75.0
Buddha	11	18.3
Hindu	2	3.3
Christian	2	3.3
Race		
Malay	45	75.0
Chinese	12	20.0
Indian	3	5.0
Average monthly Income (Ringgit)		
<1000	25	41.7
1001-2000	20	33.3
2001-3000	8	13.3
3001-4000	3	5.0
4001-5000	3	5.0
>5001	1	1.7

Table 3.: Life style modification practices among the respondents of Kampung Baru , Sungai Petani at Kedah in Malaysia, September 2017 [(N=60)]

Variable	Frequency	Percentage
Practice physical activity (N=60)		
Yes	38	63.3
No	22	36.7
Practice recommended low salt diet (N=60)		
Yes	50	83.4
No	10	16.6
Alcohol consumption (N=60)		
Yes	6	10.0
No	54	90.0
Smoking habit(N=60)		
Yes	21	35
No	39	65
Practicing Home cooked Food (N=60)		
Yes	49	81.7
No	11	18.3
Fast Food Consumption (N=60)		
Yes	31	51.7
No	29	48.3
Water Consumption (glasses/day)(N=60)		
1-2	5	8.3
3-5	19	31.7
6-8	25	41.7
>8	11	18.3
Caffeinated drink consumption(Cups/week)(N=60)		
0	10	16.7
1-2	30	50.0
3-5	9	15.0
6-8	6	10.0
>8	5	8.3
Exclusive Breast Feeding Practice (N=23)		
Yes	20	87.0
No	3	13.0
Any Illness Suffered by the Respondents(60)		
Yes	26	43.3
No	34	56.7

Table 4. Health profile related, individual related and source of information related factors among respondents of Kampung Baru in Sungai Petani at Kedah in Malaysia (N=60).

Lifestyle Modification Practice		
Variable	Good N (%)	Poor N (%)
Knowledgeable about Hypertension [N=60]		
Yes	39(65)	9(15)
No	7(11.7)	5(8.3)
Control of Blood Pressure [N=60]		
Good	20(33.3)	11(18.4)
Bad	26(43.3)	03(5)
Knowledgeable about "Food Pyramid" [N=60]		
Yes	33(55)	17(28.3)
No	6(10)	4(6.7)
Hear information about lifestyles [N=60]		
Yes	32(53.3)	16(26.6)
No	9(15)	3(5)
Source of information [N=60]		
Health professionals	15(25)	9(15)
Different medias	10(16.7)	5(8.3)
Family and friends	8(13.3)	5(8.3)
Campaign	4(6.7)	1(1.7)
Others	2(3.3)	1(1.7)

Respondents aged greater than 61 years (23.3%) were less likely to have good lifestyle modification practice than those of below 61 years. On the other hand, respondents with monthly income of more than 1000 Ringgit (58.3%) were more likely to practice good lifestyle modification practice as compared to those with monthly income of less than 1000 Ringgit.

Patient without formal education (3.3%) are less likely to practice good lifestyle modification as compared to those who had formal education. On the other hand, respondents with co-morbidity (43.3%) are less likely to practice good lifestyle modification as compared to those without co- morbidity (Table 5)

Table 5. Predictors of lifestyle modification practice among the respondents of Kampung Baru, Sungai Petani at Kedah in Malaysia, September 2017 (N=60).

Lifestyle Modification Practice		
Variable	Good	Poor
	N (%)	N (%)
Age in years [N=60]		
<61	38(63.3)	8(13.3)
>61	10(16.7)	4(6.7)
Educational Status [N=60]		
Formal Education	51(85)	7(11.6)
No Formal Education	1(1.7)	1(1.7)
Average monthly Income (Ringgit)[N=60]		
<1000	11(18.4)	14(23.3)
>1000	28(46.7)	7(11.6)
Co-morbidity [N=60]		
Yes	22(36.7)	4(6.6)
No	31(51.7)	3(5)
Hear information about lifestyles [N=60]		
Yes	32(53.3)	16(26.6)
No	9(15)	3(5)
Source of information [N=60]		
Health professionals	15(25)	9(15)
Different medias	10(16.7)	5(8.3)
Family and friends	8(13.3)	5(8.3)
Campaign	4(6.7)	1(1.7)
Others	2(3.3)	1(1.7)

DISCUSSION

This study was conducted to assess lifestyle modification practice and associated factors in a rural community at Kedah in Malaysia. Now a day's sedentary lifestyles and unhealthy food habits are the key factors behind the emergence of many different diseases.

The study revealed that 79.9% had good basic knowledge regarding lifestyle modification practices which is higher as compared with a study done in Malaysia in 2003 which showed 67% respondents were knowledgeable about lifestyle modification.[18] Another study was conducted in India in 2011 by using the same question and showed that majority (83.3%) of the respondents had the poor knowledge about the life style modification practices.[19]

These different findings may be because of the differences in literacy level, adequate training and lack of well-organized health education program. Regarding source of information about recommended lifestyle 40% reported about health professionals. This is supported by similar findings from a study in South Ethiopia in 2016 and another study in Nigeria.[20-21]

In the present study 96.6% participants received formal education .Among them majority were in the primary (30%) and secondary (56.7%) levels. This indicates that most participants are educated. One South African study in 2010 showed that (49.5%) participants had little or no formal education and majority of them were suffering from type-2 diabetes.[22]

Another South African study found that 70.6% of South African with type-2 diabetes mellitus had less than a standard-8 education.[23]

The study shows that 65% participants are non-smokers and 90% are abstained from alcohol drinking. This is supported by other study findings.[20] This could be due to the social and cultural practices that discourage smoking and alcohol drinking.

Physical activity has a significant role in improving cardiovascular diseases.[24-27] Sedentary lifestyles and lack of adequate physical activity can lead to hypertension, hyperlipidemia as well as increase the visceral fat which are associated with insulin resistant in non-diabetic individuals and glucose intolerance in patient with type-2 diabetes.[28-35]

In this study majority of respondents 38(63.3%) are being involved in physical activity for 30 min per day. This finding is supported by a study done in China in which 70% of participants were involved in adequate physical activity and were practicing good lifestyle modification. Another study among diagnosed hypertensive patients in South Ethiopia showed that only 16.1% patients practiced adequate regular exercise. This might be due to lack of awareness about lifestyle modification practices.[20]

Study shows fifty (83.4%) respondents were practicing recommended low salt diet. This finding was higher than another study done in hypertensive patients in South Ethiopia. Besides the socio- cultural practices of that community, awareness about the effect of high salt diet in blood pressure control may be the reason behind this practice.[20, 36]

The mean (±SD) score of weight management practice of the participants is 61.2(±61.2) and the mean (±SD) score of BMI is 24.44(±7.12). It shows the low prevalence of overweight (30.2%) and obesity (15.1%) amongst the participants. One study was conducted in United States which found higher prevalence of overweight and obesity.[37]

Another study in type-2 diabetic patients had been done in South Africa in 2011 also showed higher prevalence of overweight (21.6%) and obesity (71%).[22]

Average monthly income of the 58.3% respondents was more than 1000 ringgit so that majority of the participants had acceptable lifestyle modification practice score. Average monthly income is highly associated with lifestyle modification practice.[38]

One study shows majority of the participants was poverty –stricken and they had the less-than-acceptable lifestyle modification practices despite having a positive attitude. Limited accessibility and affordability of a well-balanced diet could be the main reason behind this.[22]

56.7% of the respondents were not suffering from any type of illness. On the other hand 11.7% were suffering from diabetes, 13.3% were patients of hypertension, 8.3% having asthma, 5% were heart disease patient and 5% were suffering from other morbidity. Co-morbidity refrain any individual to practice life-style changes. The education status also plays a key role behind this.

LIMITATION OF THE STUDY

Participants in this rural area may not be representative of the whole Malaysian population.

CONCLUSION

The knowledge and lifestyle modification practices among the participants attending in the 'Kampung Baru' village in Kedah were generally good. Majority of these respondents have positive attitude towards healthy lifestyles. Minority of them are sufferings from some chronic diseases such as diabetes, hypertension and heart diseases. Creating more awareness on the recommended lifestyle modifications may help them to live a better healthy comfortable life.

CONFLICTS OF INTEREST

None

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Ketamine : a fast-acting depression drug

A single subanesthetic dose of ketamine, a glutamate NMDA receptor channel blocker, can produce a rapid (within hours) antidepressant response that is sustained (about 1 week), even in patients considered treatment-resistant. In addition, ketamine has proven effective for the treatment of suicidal ideation. It is unclear whether repeated transfusions will be safe. Ketamine can also elevate blood pressure and sometimes trigger hallucinations. Although it is not approved by the US Food and Drug Administration for the treatment of depression, the decision to use ketamine off-label is "reasonable" and based on robust research. However, clinicians and patients should remain aware that the optimal dosing and long-term effects of ketamine are still a "work in progress."

Source: Psychiatry Advisor, Feb 19, 2018