

Health Related Behavior of Middle Aged Attending Out Patient Clinics in Alexandria

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Abstract: Aging is a lifelong process where early and mid-life events and behaviors have an important influence on the health and functions of individuals as they age. Adoption of a healthy lifestyle is important at all stages of life particularly the middle age. Physical activity, proper nutrition, social engagement, avoiding risky behaviors as smoking, and practicing health seeking behavior can prevent diseases and functional decline at any age. Health related behaviors are affected by the wider range of factors as the environment in which elders live, their values, beliefs, traditions, and education. Knowledge about the benefits of healthy lifestyle is a crucial motivation to achieve successful active aging. This study aimed to assess the health related behaviors among the middle aged and evaluate their knowledge about the impact of health related behaviors upon successful active aging. The sample included 400 cases attending four outpatient clinics in Alexandria during the scheduled visits and fulfilling the inclusion criteria: age 50 to 60 years, and acceptance to participate in the study. Data was collected using a structured interview sheet to obtain information about the general characteristics of the elderly, assessment of their functional abilities, and knowledge and practice of health related behaviors. The results revealed that the total score of practicing and knowledge of health related behavior was bad among the majority of cases.

INTRODUCTION

With the demographic changes that resulted in “graying of the population”, a compelling interest in the health concerns of older adults has been established.⁽¹⁾ World Health Organization (WHO).⁽²⁾ consistently draws attention to the importance of a holistic life-course approach to ageing, including the consideration of determinants of health and emphasis on a continuum of health and

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social care services that enables older people to remain healthy and productive within their families and communities. Therefore, WHO adopted the term "active ageing" which describes the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.

Ageing is a lifelong process where early and mid-life events and behaviors have an important influence on the health and function of individuals as they age.⁽³⁾ Adoption of a healthy lifestyle is important at all stages of life particularly the middle age.⁽⁴⁾ One of the myths of ageing is that it is too late to adopt such lifestyles in the later years. On the contrary, healthy eating, engaging in appropriate physical activity, not smoking, practicing health seeking behavior and using medications wisely in older age can prevent diseases and functional decline, extend longevity and enhance one's quality of life.⁽⁵⁾

Throughout life, nutrition is an

important determinant of health, vitality, longevity, and overall quality of life.⁽⁶⁾ It was found that life expectancy can be significantly influenced by dietary habits. With advancing age the risk of developing serious nutritional deficiencies also increases. This is related to age-associated reductions in total food intake combined with the presence of debilitating disease. The presence of malnutrition increases functional dependency, morbidity, mortality, and utilization of health-care resources.⁽⁷⁾

Regular physical activity can slow many physiological changes associated with age and prevent or reduce deterioration caused by chronic illness.⁽⁸⁾ A number of positive health benefits results from regular physical activity as reduction of body fat, increase in cardiovascular efficiency, decrease of fat in blood stream, increase of bone mass and joint flexibility. Psychological and intellectual benefits have also been reported.⁽⁷⁾

The adverse health effects of

smoking are extensive and have been exhaustively documented. Tobacco is the second major cause of death in the world. It is currently responsible for the death of one in ten adults worldwide, constituting about 5 million deaths each year. Stopping smoking has substantial immediate and long term health benefits for smokers of all ages. All health providers must routinely inquire about their patient's smoking habits and advice them to quit.⁽⁹⁾

Health seeking behaviors are most effective if started at a young age and continued over the lifetime. The increasing rate of disability and illness with ageing leads to a new focus on health promotion and preventive efforts directed towards middle aged group to maximize the length and quality of life in later years.⁽⁷⁾

Moreover, social activities have a role in maintaining physical health and mental well being. Proximity of others, frequency of social contact, type of relationship between spouse, relatives and friends,

social support and participation; all are important for active social engagement in the community at all stages of life. Early participation in social, cultural, sporting, recreational and volunteer activities also contribute to the maintenance of personal well-being and providing older persons with the opportunity to continue contributing to society.⁽⁷⁾

In general, health is affected by people's behavior and by the wider environment in which they live. Values, beliefs, traditions, knowledge and education play a role in adopting healthy modes of behavior.⁽¹⁰⁾ Also people's awareness of benefits of healthy life style, perceived health status and ability to modify their behavior are a crucial motivation guiding to successful active ageing.⁽¹¹⁾

There are many factors associated with adopting and maintaining healthy behaviors. These factors can be classified as personal, predisposing, enabling, and

reinforcing factors. Although personal factors such as age, gender and genetic factors are non modifiable, they must be considered in making lifestyle modifications.⁽⁷⁾

Predisposing factors provide individuals with self-confidence and self-efficacy to adopt some behavioral changes in order to improve their health. These are the factors that make a behavioral change worthwhile such as having the **belief** that the change will have benefits and **knowledge** about the behavior and its benefits. Moreover, **enjoyment** is a powerful predisposing factor. If people enjoy doing something; the enjoyment itself is a benefit. Finally, **attitudes** can make a difference. It was found that people who have positive attitudes are more likely to adopt healthy behaviors.⁽¹²⁾

Enabling factors help people to follow through with decisions to make changes in their behaviors. Having **self management skills** are considered to be powerful

enabling factor. Self management skills are skills that can be learned to help in adhering to healthy lifestyles. Those include **goal setting, time management, program-planning skills, self-assessment** and **self-monitoring**. Having access to the things you need to make changes in lifestyle is another type of enabling factor. For instance, having access to fitness facilities or cooking facilities would enable people to do regular exercise or cook healthy meals.⁽¹³⁾

Reinforcing factors are important in adhering to lifestyle changes. Family, peer, and health professional influence are all reinforcing factors. Though support from others can be reinforcing, perhaps the most important reinforcing factor is success in achieving the set goals. Planning for success is very important in adhering to healthy lifestyle changes.⁽¹²⁾

Improvements in health related behaviors can be made at different stages in life, and can be directed at the general

population or at specific target groups. Generally, a change towards a healthy lifestyle made early in life and continued to older ages is most effective for the prevention of diseases and disability, but also changes towards a healthy lifestyle at older ages are effective. The identification of middle aged with unhealthy lifestyle habits and assessing their health related behaviors in order to find ways to improve them is the challenge of future prevention programs concerned with active ageing.⁽¹⁴⁾ The present work aimed to study the health related behavior of middle aged attending outpatient clinics in Alexandria.

SUBJECTS AND METHODS

Administrative design:

1. Study setting:

The study was carried out at four outpatient clinics in Alexandria. Three of them were randomly selected. These included a general hospital and family health center affiliated to Ministry of Health and a health insurance clinic in

Alexandria. Also, an outpatient clinic at Alexandria Main University Hospital was purposively selected. Each of the selected settings was visited four times weekly for a period of one month.

2. Study design:

Cross sectional study design.

2. Target population:

Inclusion criteria:

1. Age 50 to 60 years
2. Acceptance to participate in the study.
3. Being cognitively alert

Exclusion criteria:

1. Having any communication problems
2. Refusal to participate

3. Sampling design:

Sample size:

A total of 400 middle aged attending the previously mentioned clinics was included. This sample size was based on the assumption that 40% of middle aged populations are non smokers⁽¹⁵⁾, with confidence level 95%, and degree of

precision of 5% (minimum required sample size was 369).

Sampling method:

The study sample was equally distributed among the previously mentioned study settings.

3. Statistical analysis:

The collected data were manually coded and tabulated using PC computer. The SPSS for windows version "15.0" software package was used for analysis.

The probability $P<0.05$ was considered significant in all statistical analyses.

Technical design:

For the proper conduction of the present study, a **structured pre-coded questionnaire** was used. It was composed to collect the following data:

1- Socio-demographic data:

2- Medical history:

3- Assessment of practicing health related behaviors:

Practicing health related behaviors was measured through 10 questions. These

questions were categorized into four categories: dietary habits, physical activity, smoking and health seeking behaviors. All scores given for each category were summed up and graded as follow: bad 0 - <50, fair 50-75 and good >75. The total score of practicing health related life style was 12.

1. The dietary practices:

This was assessed in terms of the average number of meals taken per day , excess salt consumption, amount of water consumed daily, type of fat used in preparing food, the way of cooking and the commitment to the special dietary regimen followed. The total score of the dietary practices was 20 and graded as: good 15-20, fair 10-14 and bad < 9.

2. Physical activity:

This was assessed in terms of practicing physical as well as outdoor activities and ways of going to nearby places; whether walking or using transportation means. The total score of the practicing physical activity was graded as: good 4-5, fair 3 and bad 2.

2. Smoking:

This was assessed in terms of being a smoker or not.

3. Health seeking behavior:

This was assessed in terms of having periodic check-up or not.

4. Assessment of knowledge about the impact of health related behaviors on successful active aging:

The knowledge was measured through 56 questions, which were scored on a 2-point scale (1=yes, 0= no). These questions were categorized into four categories of the health related behaviors: dietary habits, physical activity, smoking and health seeking behavior.

All scores given for each category were summed up and graded as follow: bad 0 - > 50, fair 50 - 75 and good > 75. Again all scores were summed together. The maximum total score was 53.

1. Dietary knowledge:

This was assessed in terms of the most important meal of the day and why from the middle aged point of view, effect of salt on

health, the importance of fluids and water to the body, the nutritional requirements of the elderly, and the complications of obesity. The maximum score was 20.

2. Knowledge about Physical activity:

This was assessed in terms of the role of physical activities on prevention and treatment of chronic illnesses and their complications as diabetes mellitus, hypertension, and obesity. It also included data about the exercises that suite the elderly regarding their types, time and frequency. The maximum score was 19.

3. Knowledge about smoking:

This was assessed in terms of the negative effect of passive and active smoking on health. The maximum score was 7.

4. Knowledge about the health seeking behavior:

This was assessed in terms of benefits of periodic check up as regards early detection and prevention of some diseases and their complications. Also, the knowledge about the availability of vaccinations for elders such as

those for influenza, pneumonia, tetanus was assessed. The maximum score was 7.

Operational design:

1. Official permission was obtained from the manager of the outpatient clinics.
2. The used scales were translated into Arabic, and validated by the juries including five experts in health education and geriatric health. The required corrections and modifications were carried out accordingly.
3. All scales were tested for reliability. Test-retest was used; coefficient factor "r" was calculated using the Pearson's Coefficient of Correlation 0.8.
4. A pilot study was carried out on 50 subjects in the selected clinics to ascertain clarity, applicability of the tool and to estimate the time needed to complete the questionnaire. The pilot subjects were not included in the main study sample.
5. Each subject was interviewed individually after explanation of the purpose and method of the study and obtaining his or

her oral consent in order to participate in the study, confidentiality was secured. Each individual interview took about 20 minutes.

6. The field work started during the academic year 2006-2007 and lasted four months. Each clinic was visited four times weekly until the required sample was collected.

RESULTS

Table 1 shows the distribution of the study sample according to some sociodemographic characteristics. The study sample included 400 cases; 140 males (35.0%) and 260 females (65.0%). The table reveals that the majority of cases of both sexes (74.8%) aged from 50 to 55 years. The mean age for males was 53.5 ± 3.6 , and that for females was 53.3 ± 3.3 . As regards the marital status, the majority of males (77.9%) and about two thirds of females (65.0%) were married. The table also shows that about one third of cases were illiterates or can just read

and write (33.0%), another third was secondary educated (30.0%), while only 7.5% obtained a university degree or more.

About half of the cases were

employees (48.4%) while the other half was on pension or not working (46.8%). Most of the cases (89.3%) lived with their families and only 8.5% lived alone.

Table (1): Distribution of the study sample according to some sociodemographic characteristics.

Sociodemographic characteristics	Males (n=140)		Females (n=260)		Total (n=400)		X²	p-value
	No.	%	No.	%	No.	%		
<u>Age</u>								
• 50-	33	23.6	618	26.2	101	25.2	0.32	0.57
• 55-60	107	76.4	192	73.8	299	74.8		
<u>Marital state</u>								
• Single	25	17.9	21	8.1	46	11.5		
• Married	109	77.9	169	65.0	278	69.5	35.3	0.00*
• Divorced	3	2.1	13	5.0	16	4.0		
• Widow/widower	3	2.1	57	21.9	60	15.0		
<u>Education</u>								
• Illiterate/ just read& write	21	15.0	111	42.7	132	33.0		
• Elementary/ preparatory	42	30.0	76	29.2	108	29.5		
• Secondary	60	42.9	60	23.1	120	30.0	41.0	0.00*
• University/ more	17	12.1	13	5.0	30	7.5		
<u>Occupation</u>								
• Employee	54	38.6	140	53.8	194	48.4		
• Not working	67	47.8	120	46.2	187	46.8	197.	0.00*
• Skilled worker	19	13.6	0	0.0	19	4.8	6	
<u>Living condition</u>								
• With families	116	82.9	241	92.7	357	89.3		
• With relatives	4	2.9	4	1.5	8	2.0		
• Alone	20	14.2	14	5.4	34	8.4		
• Residential home	0	0.0	1	0.4	1	0.3	10.4	0.01*

* Statistically significant.

• Mean age for males = 53.5 ±3.6, and that for females = 53.3 ± 3.3.

Table 2 shows the distribution of the study sample according to medical history. It shows that most of the cases suffered from chronic diseases (83.2%). About half of the cases had hypertension and cardiovascular diseases (51.8 %) and the majority of cases suffered from only one disease (76.5%).

The table also reveals that more than two thirds of the cases in both sexes were taking 1-2 medications / day while about one fourth were taking 3-4 medications

(69.8%, 25.9% respectively). About one half of the cases (51.3%) showed complete commitment to prescribed medications (54.1% of males and 50.0% of females respectively) and about one fourth (23.6%) showed moderate commitment.

More than half of the cases have been taking medications for less than 5 years while about one fourth were taking medication from 5 to less than 10 years (56.5%, 26.6% respectively).

Table (2): Distribution of the study sample according to medical history.

Medical characteristics	Males (n=140)		Females (n=260)		Total (n=400)		χ^2	p-value
	No.	%	No.	%	No.	%		
Suffering from chronic diseases								
• No	24	17.1	43	16.5	67	16.8	0.02	0.88
• Yes	116	82.9	217	83.5	333	83.2		
Diseases:								
• Cardiovascular Diseases& Hypertension	86	54.1	147	50.3	233	51.8		
• DM	16	10.1	42	14.4	58	12.9		
• Rheumatic diseases	15	9.4	51	17.5	66	14.6		
• Cancer	11	6.9	11	3.8	22	4.9		
• Hepatic & billiary disease	6	3.8	12	4.0	18	4.0		
• Chest diseases	1	0.6	4	1.4	5	1.1		
• Renal diseases	3	1.9	4	1.4	7	1.6		
• Endocrine diseases	5	3.1	0	0.0	5	1.0		
• Gastrointestinal diseases	10	6.3	13	4.5	23	5.0		
• Dermatological diseases	3	1.9	3	1.0	6	1.3		
• Hematological diseases	3	1.9	5	1.7	8	1.8		
Comorbidities								
• One disease	106	75.7	200	76.9	306	76.5		
• 2 or more diseases	34	24.3	60	23.1	95	23.5		

▪ Not mutually exclusive.

Table (2) continue:

Medical characteristics	Males (n=140)		Females (n=260)		Total (n=400)		χ^2	p-value
	No.	%	No.	%	No.	%		
Number of medications taken daily								
• 1-2	73	67.0	137	71.4	210	69.8	1.14	0.56
• 3-4	32	29.4	46	24.0	78	25.9		
• 5+	4	3.6	9	4.6	13	4.3		
The commitment to medication taken								
• Not at all	11	10.1	18	9.4	29	9.8	2.41	0.12
• Little	12	11.0	34	17.7	46	15.3		
• Moderate	27	24.8	44	22.9	71	23.6		
• Complete	59	54.1	96	50.0	155	51.3		
The duration of treatment								
• ≤ 5 years	52	47.7	118	61.5	170	56.5	5.73	0.12
• 5- < 10 years	36	33.0	44	22.9	80	26.6		
• 10- < 15 years	15	13.8	23	12.0	38	12.6		
• ≥ 15	6	5.5	7	3.6	13	4.3		

* not mutually exclusive. * Statistically significant

Table 3 shows the distribution of the study sample according to their score of knowledge about health related behaviors. The table shows that the score of dietary knowledge was bad among more than half of cases (56.0%) among which females predominated males. Only 12.0% of the cases got a good score of dietary knowledge. There was a statistical significant difference between males and females ($p = 0.04$).

The majority of cases (71.2%) had a bad total score of knowledge about

physical activity(PA). This was more common in females than males (78.8% of females and 57.1% of males) and the difference between both sexes was statistically significant ($p = 0.00$)

The total score of knowledge about smoking was fair among nearly half of cases (49.5%) where males predominated females with a statically significant difference between them.

The table also reveals that about half of cases (51.0%) had bad score of knowledge about the periodic check up and

vaccination. This was more common among females than males (58.8% of females and 36.4% of males) with a statistically significant difference (p value = 0.00).

The table demonstrated that less half of cases (45.8%) had fair total score of

knowledge about the health related behavior. This was more common among males than females (46.4% of males and 45.4 % of females respectively) with a statistically significant difference (p value = 0.00).

Table (3): Distribution of the study sample according to their score of knowledge about health related behavior.

Health related behavior	Males (n=140)		Females (n=260)		Total (n=400)		X ²	p-value
	No.	%	No.	%	No.	%		
Score of dietary knowledge								
• Bad	67	47.9	157	60.4	224	56.0	6.25	0.04*
• Fair	55	39.2	73	28.1	128	32.0		
• Good	18	12.9	30	11.5	48	12.0		
Score of knowledge about PA								
• Bad	80	57.1	205	78.8	285	71.2	23.57	0.00*
• Fair	33	23.6	38	14.6	71	17.8		
• Good	27	19.3	17	6.6	44	11.0		
Score of knowledge about smoking								
• Bad	26	18.6	92	35.4	118	29.5	34.01	0.00*
• Fair	63	45.0	135	51.9	198	49.5		
• Good	51	36.4	33	12.7	84	21.0		
Score of knowledge about periodic check up and vaccination:								
• Bad	51	36.4	153	58.8	204	51.0	28.98	0.00*
• Fair	41	29.3	73	28.1	114	28.5		
• Good	48	34.3	34	13.1	82	20.5		
Total score of knowledge about Health related behavior:								
• Bad	35	25.0	111	42.7	146	36.4	22.03	0.00*
• Fair	65	46.4	118	45.4	183	45.8		
• Good	40	28.6	31	11.9	71	17.8		

* Statistically significant.

Table 4 shows the distribution of the study sample according to their score of practicing health related behavior. The table shows that half of the cases had fair score of practicing dietary behavior (51.0%). More than one third of the cases had fair score of practicing physical activity (36.6 %). The majority of cases had good score of smoking behavior as being non

smokers (82.3%), while most of the cases had bad score of practicing health seeking behavior (77.5%). The table also shows that the total score of practicing health related behavior was bad among the majority of cases (77.3%) among whom males had better score than females and this difference was statistically significant ($p=0.00$).

Table (4): Distribution of the study sample according to their score of practicing health related behavior.

Practicing health related behavior	Males (n=140)		Females (n=260)		Total (n=400)		X ²	p-value
	No.	%	No.	%	No.	%		
Score of dietary practices:								
• Bad	16	11.5	64	24.6	80	20.0		
• Fair	73	52.1	131	50.4	206	51.0		
• Good	51	36.4	65	25.0	116	29.0	12.1	0.00*
Score of physical activity:								
• Bad	37	26.4	100	38.3	137	34.4		
• Fair	50	35.7	94	36.2	144	36.6		
• Good	53	37.9	66	25.5	119	29.0	8.6	0.01*
Score of smoking practices:								
• Bad	69	49.3	3	1.2	71	17.7		
• Good	71	50.7	257	98.8	329	82.3	140.1	0.00*
Score of practicing health seeking behavior:								
• Bad	95	67.9	215	82.7	310	77.5		
• Good	45	32.1	45	17.3	90	22.5	11.4	0.00*
Total Score of health related behavior:								
• Bad	95	67.9	214	82.3	309	77.3		
• Fair	0	0.0	2	0.8	2	0.5		
• Good	45	32.1	44	16.9	89	22.2	12.2	0.00*

*Statistically significant

DISCUSSION

Studying middle adulthood is a relatively recent area of concern. It has only been since more and more people lived longer that professionals became interested in studying life during this age period. Middle adulthood is the age between 40-65 years during which many changes are found in different areas of life. For many, midlife is a time when people start to think about "how much time they have left". Individuals begin to reexamine their lives, their relationships, their works, and even to question the meaning of them all. This process has been referred to as a mid-life crisis. Clearly, middle adulthood is a time for change and development. At this stage people start to think how to age successfully.⁽¹⁶⁾ Although there is no clear definition of successful aging, the most popular approach was established by Rowe and Kahn.⁽¹⁷⁾ They proposed that successful aging is the balance of three components: low probability of disease and

disease related disability, high cognitive and physical functional capacity and active engagement with life. Many researchers reported that a great percentage of older adults appeared to be living according to this model and succeeding in being independent without disabilities.⁽¹⁸⁾ Others have advocated that successful aging is better calculated using subjective measures of psychological wellbeing.⁽¹⁹⁾ Life satisfaction among the elderly is an important concept as it gives us an overall view of the adjustment as well as adaptive coping ability of the individual. It has been also found that individuals with lower life satisfaction and lower expectations about aging do not perceive it as important to seek health care for age-associated conditions. Therefore they experience higher levels of depression, have less energy and poor health-related quality of life.⁽²⁰⁾

Health begins to decline in middle adulthood, with more chronic disease

becoming more manifested.⁽¹⁶⁾ In the present study, most of the cases (83.2%) suffered from chronic diseases (**table 2**). In Egypt, it was found that the overall estimated prevalence of hypertension was 26.3%.⁽²¹⁾ In the present study, about half of the cases (54.1% of males and 50.3% of females) had hypertension and cardiovascular diseases, followed by rheumatic diseases (9.4 % of males and 17.4% of females) then diabetes mellitus (10.1% of males and 14.4% of females) (**table 2**). In the USA⁽²²⁾, among older adults, (52 % of males and 54% of females) have hypertension, (37% of males and 26 % of females) have heart disease, (43 % of males and 54 % of females) have arthritis, and (19% of males 17% of females) have diabetes.

As people get older, medical comorbidity starts to appear.⁽¹⁶⁾ The present study revealed that about one fourth of the cases (23.5%) had a combination of two or more diseases (**table**

2). This was somewhat lower than the percentage found in a study carried out in Main Alexandria University Hospital⁽²³⁾ where (44.5%) of older adults had more than two diseases. Also the percentage in the present study is lower than that in USA,⁽²²⁾ where about (50%) of older adults suffered from two or more chronic illnesses. This may be attributed to the age differences between the present study population, which was among middle aged cases, and the other two studies were conducted among the elderly.

Lifestyle plays an important role in morbidity and mortality occurrence among adults. The main behavioural factors of concern, namely **nutrition, physical activity, non smoking and health seeking behaviour** are modifiable and are in focus of the national health improvement strategies. Changing these factors in the direction of a healthier lifestyle pattern could postpone the age of onset of permanent morbidity and disability and

could have a major effect on quality of life.⁽²⁴⁾ **Healthy diet** is an important part of health behaviour as it plays a substantial role in the aetiology of chronic diseases especially among middle aged and elders.⁽²⁵⁾ It was found that dietary knowledge is significantly associated with healthy eating pattern. People with high level of dietary knowledge, have better healthy dietary habits and the contrary is true.⁽²⁶⁾ The present study supported that finding where about half of the cases had a bad dietary knowledge and hence had a fair score of dietary practices (56.0 %, 51.0% respectively) (**Table 4**) .The low level of dietary knowledge was also described in a study conducted in Taiwan that found that the nutrition knowledge of adults was poor.⁽²⁷⁾

Recognizing and maintaining an optimally healthy dietary practice is an important challenge particularly as people get older.⁽²⁸⁾ There are several factors that affect individual's dietary choices. These

factors can act as a barrier to adopt healthy eating behavior. In the present study, these barriers were lack of knowledge and financial resources (35.5 %, and 19.3% respectively) and only 6.7% thought there was no need to change their diet to a healthier one. This goes with a study conducted in Ukraine⁽²⁹⁾ about attitudes and barriers of healthy eating which found that cost, lack of knowledge, resistance to change (65%, 32%, 30% respectively) were the most common barriers to healthy dietary practices.

A healthy diet is the diet rich in fibers and contains small amount of saturated fatty acids and salts.⁽³⁰⁾ Many people try to avoid eating certain food which is considered unhealthy.⁽²⁷⁾ In the present study, about two thirds of the cases (67.5%) used oil in preparing food and less than half (46.0%) used different ways of cooking as boiling, grilling, frying. This goes in line with a Taiwanese study⁽²⁷⁾ about nutritional attitudes and dietary

restriction behavior of adults. It reported that (63.7%) of people try to avoid food which was high in fat or cholesterol.

Choosing and preparing food with little or no salt is one of the dietary guidelines seated by the American Heart Association.⁽³⁰⁾ The present study assessed the knowledge about the effect of salt on health and showed that about two thirds of cases (62.5%) knew the effect of excess salt on elevating blood pressure and about one third (30.5%) knew that it causes salt and water retention . Thus, more than half of the studied cases (54.5%) never preferred excess salt in food. These findings agree with the Australian survey⁽³¹⁾ which found that most of participants knew the effect of salts on high blood pressure and less than a half knew the harmful effects of salt on the kidney. And hence more than a half were consume either less than or about the amount of salt recommended by the National Heart Foundation of Australia.

The importance of water consumption and its benefits for the body is well documented.⁽³²⁾ In the present study, the majority of cases (70.2%) knew its importance to renal function. Despite this knowledge, the modal frequency of water drunk daily was less than four glasses among 38.5% of them. This result is similar to what was reported in a study that assessed the total daily water intake of adults in USA. It found that despite the knowledge about the importance of daily water consumption, the total water intake was significantly low.⁽³²⁾

Excess body weight and weight gain during middle age may contribute to medical complications and increased medical care expenditures that occur in later years. The prevalence of complications associated with obesity such as hypertension, diabetes, cardiovascular disease, depression and osteoarthritis increases with age.⁽³³⁾ The present study revealed that cases had a good knowledge

about the medical complications of obesity as joint pains, cardiovascular diseases, DM and depression (74.8%, 71.0%, 47.2% and 42.0 respectively). This goes in line with other studies⁽³⁴⁻³⁵⁾ that assessed the knowledge about the complications of obesity. They showed that the majority of participants (72.0%) had a good knowledge about the role of obesity in developing the cardiovascular disease while only 11.9% had a good knowledge about the role of obesity in producing diabetes. Many older adults try to lose weight and follow overall healthy behaviors to avoid the complications of obesity.⁽³⁶⁾ The present study showed that half of the patient viewed themselves as being overweight and subsequently expressed their wish to reduce their weight (46.5% and 48.2 % respectively). This was more common among females than males. This goes with a study that showed that the weight-loss intention and weight-control behaviors were common among females.⁽³⁷⁾

People may do not know that their nutritional requirements can change as they get older. They have to choose a nutrient-dense diet, which provides an adequate intake of nutrients that suite their activity levels and energy needs.⁽³⁸⁾ The present study assessed the knowledge of the middle aged about the nutritional requirements among elders. It revealed that the majority of cases knew that the energy requirements are decreasing with age as well as the required amount of carbohydrates, protein and fat (63.6%, 70.4%, 72.5%, 88.2% respectively). While majority of them knew that the amount of required vitamins in terms of fruits and vegetables is increasing with age (82.5%). This goes in accordance with a study carried out in Poland that found that almost all (93.0%) of adults knew that fruits and vegetables should be frequently consumed while fats, carbohydrates, and proteins should be less consumed. As regards the amount of drinking water, the present study

revealed that most of cases knew that the amount of water intake is increasing with age (78.8%). Similarly, a study found that about one fourth (23%) of the adults surveyed declared the proper daily intake of fluids should be increased to reach 8-9 glasses daily.⁽³⁷⁾

In order to manage some diseases effectively, some lifestyle modification should be followed especially the diet. ⁽³⁸⁾ The present study found that 12.5% of cases followed a special dietary regimen for diabetes control and 9.0% followed another one for hypertension control. Among cases that follow a special dietary regimen, about one fourth (24.4%) showed no or little commitment to the special diet they were following. It is lower than what was found in a study conducted among Kuwaiti adult males and females with hypertension, type 2 diabetes to assess their adherence to dietary regimen they followed found that 63.5% of patients reported that they were not adhering to

it.⁽³⁹⁾ Noncompliance to diet modifications may be due to several factors as lack of knowledge and understanding the role of food in health and fitness, lack family support, lack of intension power. This may be also due to lack of good professional advice, reinforcement and encouragement by the health care providers. As the advice itself must be simple, understandable and practical.

Smoking is another behavior that has amenable influences on health. The harmful health effects of smoking are well documented. It was found that individuals at any age can benefit from quitting that habit. Increase the awareness about the health effects of smoking is the first step in adopting non smoking behavior. ⁽⁴⁰⁾ The present study revealed that the smoking behaviour is apparently high. It showed that about half of males (49.3%) were smokers with a statistical significant difference between both sexes.

Another healthy behavior that has a

great influence on health is practicing physical activity. A daily routine that includes regular exercise has positive attributes to diseases such as Alzheimer's and cognitive decline, alcoholism , anxiety, type-2 DM, breast cancer , heart disease, obesity, osteoarthritis , Parkinson's disease and smoking.⁽⁴¹⁾ In the present study a bad level of knowledge about physical activity and its benefits was found among the majority of the cases (71.2%). The knowledge about the effect of physical activity in keeping body active and in preventing obesity was found among about half of the cases (54.2%, and 49.8% respectively). About one third of cases had the knowledge about the role of physical activity in elevating mood, protecting heart and vascular system and preserving joint flexibility (31.2%, 35.0 % and 37.5% respectively). While only 11.8% knew its role in preventing osteoporosis. Moreover, about one fourth of cases knew the roles of practicing physical activity in helping in

treatment of diabetes mellitus and hypertension or preventing their complications (24.1%, 28.2%, and 22.2% respectively). These results opposed those found in a survey carried out in Scotland⁽⁴²⁾ which found that the level of knowledge about the specific health benefits from participating in physical activity was high. This survey showed that almost all of the participants knew that physical activity helped in joint flexibility, improves health in general, affects the blood pressure and prevents heart diseases. Moreover, about two thirds of the participants in that survey knew that physical activity could affect the blood pressure and strengthen bones. This discrepancy between the level of knowledge about the health benefits of practicing physical activity between the present study and the other one may be attributed to many factors. One of these factors is the evident role of mass media in promoting and encouraging practicing physical activity and considering it as a

routine daily activity among the European communities. Another factor is the availability of attractive, safe, and low-cost environments that facilitate movement and practicing physical activity in those communities.

From the low level of knowledge regarding the health benefits of PA in the present study, it was not surprising to find that about two thirds of cases did not practice PA (65.8%), among whom women reported higher level on physical inactivity than men with a statistically significant difference between both sexes. This coincides with a survey ⁽⁴³⁾, which assessed the activity levels, beliefs and determents among adults, that showed that the majority of adults did not participate in leisure time physical activity and women were more inactive than men (70.0% of men compared with 57.0% of women) with a statistical significance difference between them.

Researchers found that moderate

exercise (aerobic and resistance exercise ≥30 minutes 3 times per week) are effective in prevention and/or recovery of several conditions as well as clinical depression, Alzheimer's and cognitive decline and cardiovascular disease. ⁽⁴²⁾ In the present study, knowledge about the physical activity that suites elders was assessed. Most of the cases knew that walking is the suitable type of physical activity for elderly; about one third knew that the best was 3-4 times per week. And only 13.0 knew that the best time for practicing physical activity was in the afternoon. Moreover, as regards the type of practiced physical activity, walking was the commonest one in the present study. It showed that the majority of cases practiced walking, for less than 20 minutes per day (81.0% and 78.0% respectively), and about half of them practiced physical activity on daily basis (50.4%). This goes with a cross sectional study ⁽⁴³⁾, carried out in Scotland, that found that walking was the most

practiced physical activity among adults. The time spent on leisure time physical activity was less than 90 minutes daily. The reason of the preferring walking may be due to that it is the simplest, affordable type of physical activity that needs no special equipment or places to practice it.

Although there is much left to be learned, this study may be an important stepping stone to an improved understanding about the health related behaviors among middle aged. The present study revealed a gap between the knowledge and practice of health related behaviors. Less than half of cases had fair total score of knowledge about the health related behavior, while the total score of practicing health related behavior was bad among the majority of them. Adopting healthy behavior can be achieved through encouraging potentialities, improving capacities, enhancing social support and effective preventive measures. The ultimate aim is to increase the number of

middle aged people who prepare themselves to spend their later life unburdened by preventable diseases and impairments that threaten the quality of their lives thus helping them to age successfully.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the present study, we can **conclude** the following:

- Most of the cases suffer from chronic diseases, about half of them have hypertension and cardiovascular diseases and about one fifth have two or more diseases; a finding which reflects the poor preventive care.
- Half of the cases have good total score of perceived health status. There are several factors that can influence the perceived health status such as: sex, chronic morbidities and the ability of performing daily activities (ADL).
- Half of the cases have fair total score of dietary practices.

- About two thirds of cases are physically inactive, among which women report higher level on physical inactivity than men.
 - Most of the physically active cases walk, for less than 20 minutes daily.
 - Half of males are smokers.
 - The majority of cases do not practice periodic check up.
 - More than half of the cases have bad score of dietary knowledge, in which women hold a lower score in knowledge than men.
 - The effect of excess body weight on health and their complications is known among most of the cases.
 - Most of the cases know that the energy requirements and the amount of required carbohydrates, protein and fat are decreasing with aging, while the amount of required vitamins, in term of fruits and vegetables, and water intake are increasing.
 - The level of knowledge about the physical activity (PA) and its health benefits is bad among most of the cases.
 - Most of the cases know that walking is the suitable type of PA for elderly; about one third know that the best is 3-4 times per week and only a minority of them know that the best time for practicing P A is in the afternoon.
 - The harmful health effects of smoking are fairly known among half of the cases.
 - About half of cases have bad score of knowledge about the health seeking behavior.
 - The main source of information about health related behaviors is TV among half of the cases.
- In view of the previous conclusions, the following **recommendations** are presented:
- Development and implementation of programs to promote health related behaviors among middle and old age

- groups are recommended. These programs should assess the motivations and enabling factors and overcome barriers in order to achieve successful aging.
- Health promotion programs should include interventions to improve knowledge, attitude, and practice of the middle aged towards proper diet, exercise and other health seeking behaviors.
 - Improving the awareness of the community in general about health related behaviors, including: healthy diet, physical activity, smoking cessation and practicing health seeking behavior.
 - It is recommended to utilize the mass media to enhance the level of community knowledge about health related behaviors and the available recommended preventive services.
 - Use of health education materials

about preventive measures which are simple, self explanatory, and culturally oriented to be suitable for those with lower educational levels.

- Improve access to comprehensive and high-quality preventive services that are effective in preventing disease (primary prevention) or in detecting asymptomatic disease or risk factors at early, treatable stages (secondary prevention), and a curative medical services as well.

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