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Nutritional health status in residential homes for elderly people in Amman, Jordan

الوضع التغذوي للمسنين المقيمين في دور الرعاية في عمان الأردن

Hadeel Ghazzawi

هديل غزاوي

Department of Nutrition and Food Sciences, Faculty of Agriculture, University of Jordan, Jordan

Corresponding Author: h.ghazzawi@ju.edu.jo

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Abstract

Background: the nutritional status of an elderly is the accumulated result from a number of different factors impacting one another at different levels. **Objectives**: a primary intervention to evaluate the primary nutritional intakes of individuals in the residential homes. It also aims to describe the residents' health statuses, and to determine factors that can be independently associated with respect to under- and/or over-nutrition. **Design**: a cross-sectional study was performed on 9 residential homes for the elderly in Amman, Jordan. The nutritional status was \evaluated using anthropometric measurements. Food recalls were analyzed by ESHA. **Results**: the study included 139 residents (aged from 41 to 70+ years old). Malnutrition was not detected; inverse obesity was more common (average BMI was 45 kg/m^2). Non-communicable Chronic diseases were observed amongst most of the residents. Macronutrients and micronutrients intakes varied between age groups. Most of the micronutrients did not meet the dietary reference intake (DRI). Sodium intake was higher than the recommended level **4714 mg** and Vitamin D intake was less **52.3 IU** than the requirements for all of age groups. **Conclusion**: high energy intake as well as lack of sports/activities combined with non-communicable chronic diseases all

becomes problematic health-wise for individuals in residential homes in Amman.

Keywords: Elderly Home Residency, Nutrients, Anthropometric, Dietary Requirements

ملخص

الخلفية: الحالة التغذوية للمسنين هي النتيجة المتراكمة من عدد من العوامل المختلفة التي تؤثر على بعضها البعض على مستويات مختلفة. **الأهداف:** تدخل أساسي لتقييم مآخذ التغذية الأولية للأفراد في دور رعاية المسنين. كما يهدف إلى وصف الحالات الصحية للمقيمين، وتحديد العوامل التي يمكن أن ترتبط بشكل مستقل فيما يتعلق بنقص التغذية و / أو فرط التغذية. التصميم: أجريت دراسة مقطعية على 9 منازل سكنية للمسنين في عمان، الأردن. تم تقييم الحالة الغذائية باستخدام القياسات البشرية. تم تحليل عمليات سحب الطعام من قبل .ESHA **النتائج:** شملت الدراسة 139 شخصًا (تتراوح أعمارهم بين 41 و 70 عامًا). لم يتم الكشف عن سوء التغذية ؛ كانت السمنة أكثر شيوعًا (كان متوسط مؤشر كتلة الجسم).

الكلمات المفتاحية: دور المسنين، المغذيات، المقاييس الأنثروبوميتريه، المتطلبات التغذيوة.

Introduction

Elderly in Jordan form about 5.5% of the Jordanian population (total of 10053 thousand capita) with life expectancy at birth male/female (years, 2016) 73/76. The rate of this statistic change is continuing all the more quickly in developing nations. Number of elderly persons is expected to reach 6.8% and 15.3% in 2025 and 15.3% respectively. This increase can be credited to numerous factors such as the decline in total fertility rates, decrease in infant and child mortality rates, improved health services, the increase in life expectancy, increase level of education especially among females, improved nutrition, and changes in life style.

It has been seen the nonappearance of particular wellbeing administrations for the geriatric in Jordan. The role of eating routine toward the start of numerous sicknesses and evaluating the dietary status of the individual, family and community network is vital for general wellbeing and public health

The elders' main, if not sole, source of income has mainly been from their families or retirement funds. The elderly in Jordan need to receive more attention by both the government and civil society organizations to prevent them being the forgotten segment of the society. Jordan has a chance to start to get ready for the wellbeing and social needs of this gathering dependent on an examination of the human services needs of the old in the nation.

In Jordan; elderly need to get more attention by both the government and civil society organizations to prevent them being the forgotten segment of the society. Jordan gets an opportunity to begin to prepare for the prosperity and social needs of this get-together reliant on an examination of the human administrations needs of the old in the country.

To the author's best knowledge, this paper can be viewed as this paper can be seen as the ongoing exploration work in the field of concentrate the feeding status of private homes for the older in Amman.

Material and Methods

Experimental site/ Sample size

The Ministry of Social Development grants licenses to the residential homes for the elderly under the system for the licensing of residential homes and their clubs. So as to give private homes that address the issues of this gathering in all viewpoints and do all exercises that guarantee congruity convey and coordinate them with the general public and save their poise.

Out of 10 residential homes around Jordan; 9 residential ones were considered due to their location in Amman. This cross-sectional study was carried out and completed in the city of Amman for two reasons: first is the availability of frequent financial funds to carry out the analysis in Amman, and second is that more than 42% of the population of Jordan lives in Amman. All the residences among those 9 residential homes were interviewed and entered the study.

Materials and Research Tools

Anthropometric measurements were obtained included weight, height, body mass index (BMI), body circumference (arm, waist, hip), and waist to hip ratio (WHR). Standing height was measured using a stadiometer (Seca 214; Seca, Hamburg, Germany), and the weight was measured using digital scales (Seca 835; Seca, Hamburg, Germany). The WHO BMI cut-offs were used to group BMI status using the website of Centers for Disease Control and Prevention / BMI Percentile Calculator for adult [5].

The author has examined and reviewed a number of masters-level research work in Jordan that have not been published - such unpublished work was done before the 1990's. The reason for this examination is to portray the nutritional dietary intake status of the residents in residential homes for the elderly Jordan.

Research Procedure and parameters

Trained nutritionists interviewed the resident of the residential homes individually. Informed consent was obtained from all participating residents after providing a description of the general aim and design of the study and assuring them of the confidentiality of the collected data. The items included in the final recall were demographics, living conditions, functional abilities, health, and social status, physical activity and food intake. Total energy, macro and micro-nutrients intakes were assessed by a 3-day recall dietary assessment supervised b y trained nutritionists by asking the meal planners in the nursing homes or through administration of a recall during face-to-face interviews in the residents' settings.

Statistical Analysis

The collected data was then analyzed using ESHA software. Statistical analysis was performed using SPSS The Statistical Package for the Social Sciences (SPSS for Windows, Rel. 22.0, 2013, Chicago: SPSS Inc). Mean differences were examined using one-way analysis of variance (ANOVA). The data is presented as mean ±SD. Differences

between means were considered significant at p-value <0.05. For tabular representations of the results, Microsoft word and Microsoft excel 2013 were used.

Results

All the nine residential homes in Amman were considered for this study. One hundred and forty 140 (43 males (30%) and 97 females (70%) who were living in the 9 residential homes for the elderly were interviewed. The results demonstrate that the majority of the elderly populace experiences perpetual health problems and many did not have sufficient medical coverage or can bear the cost of health services. The seniors' fundamental, if not sole, wellspring of pay has for the most part been from their families or retirement reserves.

Table 1 shows that residents with ages from 45 years were with female majority (70%). Residents with 70+ years old had an increased number in males more than their females peer. The average age of the sample was 68 years. Females were the dominating in number more than males amongst all age groups. In this study, residents were categorized according to their age groups: adult group 40-60 years old (n=37), early elderly age group 61-70y (n=46), and older group >=71 (n=56). Out of 9 residential homes, government funds 5 only while the other 4 residential homes were privately-funded (either from the resident him/her-self or their family member(s)). It is shown that the lower the education amongst the elderly, the higher their admission into residential homes. Nonetheless, the admissions were seen in all age groups despite the insignificant difference in results.

Table (1): Demographic characteristics of Homes.

		Age Categories			p-value
		40-60y (n= 37)	**61-70y (n=46)**	**71=< (n=56)**	
Gender	Male (n=42)	7 (16.6)	16 (38.2)	19 (45.2)	0.216
	Female (n= 97)	30 (30.1)	30 (30.1)	37 (30.8)	
Fund	Government (n=82)	27 (73.0)	31 (67.4)	24 (42.9)	0.014
	Private (n=57)	10 (27.0)	15 (32.6)	32 (57.1)	
Education	Not known (n=6)	2 (5.4)	1 (2.2)	3 (5.4)	0.623
	No Schooling (n=36)	11 (29.7)	13 (28.3)	12 (21.4)	
	Primary(n=43)	14 (37.8)	14 (30.4)	15 (26.8)	
	Secondary (n=30)	5 (13.5)	6 (13.0)	9 (16.1)	
	Technical (n=4)	1 (2.7)	1 (2.2)	2 (3.6)	
	Diploma (n=6)	0	2 (4.3)	4 (7.1)	
	Bachelor's (n=7)	0	1 (2.2)	6 (10.7)	
	Postgraduate (n=17)	4 (10.8)	8 (17.4)	5 (8.9)	
Income	Yes	27 (73.0)	23 (50.0)	40 (71.4)	0.123
	No	10 (27.0)	23 (50.0)	16 (28.6)	
Civil status	Divorced (n=21)	6 (16.2)	5 (9.8)	11 (19.7)	0.048
	Married(n=26)	5 (13.5)	14 (30.4)	7 (12.5)	
	Single (n=38)	16 (43.2)	10 (21.7)	12 (21.4)	
	Widow (n=53)	10 (27.0)	17 (38.1)	26 (46.4)	

... continue table (1)

		Age Categories			p-value
		40-60y (n= 37)	61-70y (n=46)	71=< (n=56)	
Admission reason	Lives alone (n=46)	10 (27.0)	16 (34.8)	20 (35.7)	0.042
	No family house (n=52)	19 (51.3)	14 (30.4)	19 (33.9)	
	Prefer not to say (n=41)	8 (21.6)	16 (34.8)	17 (30.3)	
Mobility	Bed bound (n=9)	2 (5.4)	2 (4.3)	5 (8.9)	0.282
	Chair bound (n=12)	5 (13.5)	3 (6.5)	4 (7.1)	
	Physically able (n=83)	18 (48.6)	26 (56.5)	39 (69.6)	
	Physically inactive (n=35)	12 (32.4)	15 (32.7)	8 (14.3)	
Chronic diseases	No diseases (n=13)	5 (13.5)	1 (2.2)	7 (12.5)	0.317
	Alzheimer (n=9)	0	2 (4.3)	7 (12.5)	
	Diabetes mellitus (n=17)	7 (18.9)	3 (6.5)	7 (12.5)	
	Hypertension (n=29)	4 (10.8)	14 (30.4)	11 (19.6)	
	Osteoporosis (n=9)	2 (5.4)	4 (8.7)	3 (5.4)	
	Multi-diseases (n=62)	19 (51.3)	22 (47.9)	21 (37.5)	
Feeding	Eating well (n=109)	29 (78.4)	35 (76.1)	45 (80.4)	0.806
	Fatigue/ loss of energy (n=23)	6 (16.2)	8 (17.4)	9 (16.1)	
	Oral problem (n=7)	2 (5.4)	3 (6.5)	2 (3.5)	
Number of Meal	3 and less (n=80)	27 (73)	26 (56.5)	27 (48.2)	0.032
	4-6 (n=59)	10 (27)	20 (43.5)	29 (51.8)	

Living conditions

The reasons of admission were significantly different between the age groups. More than 51% of all the residents complained they have had no family to live with. For the adult age, the significant reason for their admission is that they have no family. More than 38% of the residents were widowed while 27% were single, 15.8% were divorced, and 19% were married but separated from their partners.

Mobility

Sixty percent of the residents were able to do all of their daily physical movement and activities. Quarter of the residents were able to do their physical movement but were inactive due to their lazy nature and unwillingness to be active in life. Bed bound was seen only in 6.5% of the residents and 9% were chair bound. No significant differences between age and mobility (p.value = 0.282).

Health status

Only 9% of the residents were free from any chronic disease. However, 45% of the residents suffered from multi-diseases (combination of 2 or more of the following: diabetes mellitus (DM), hypertension, arthritis, heart disease, kidney problem, Alzheimer, and/or gout). DM was seen in 12%, whereas 21% suffered from hypertension, 7% from Alzheimer and 6% from osteoporosis. No significant relationship found between age and diseases.

Food intake status

Among all of the participants; 77% were able to eat well without any help from the residential homes' staff, while 23% needed help either due to their loss of energy or because they had oral problems. More than the half (58%) usually eat less than 3 meals per day while 42% have had more meals per day.

Table 2 shows that the average weights were 62.7 kg for females and 70.3 kg for men ($p < 0.05$), and the mean heights were 1.52 m for females and 1.63 m for males ($p<0.05$). Age related changes in

anthropometric values were identified. BMI values unfortunately indicated that all residents suffered from obesity class II especially the adult and early elderly groups. In addition; all of the residents had higher waist to hip ration (WHR) which indicates health complications. WHO in 2014 recommended cut- off points for waist circumference as 85 cm and 80 cm and WHR cut-off values of 0.90 and 0.80 for males and females respectively. A higher ratio indicates a greater risk of various health complications. The data of this paper indicates that all of the residents were at risk of health complication due their high anthropometric measurements.

Table (2): Anthropometrics measurements of residents (Mean±SEM).

	40-60y (n=37)	61-70y (n=36)	71=< (n=56)	p-value
Age (y)	54.46 ± 0. 98	65.74 ± 0.47	78.14 ± 0.75	-
BMI (kg/m^2)	44	46	43	
Arm circumference (cm)	35.97 ± 2.78	37.67 ± 2.33	40.22 ± 2.67	0.519
Waist circumference (cm)	98.18 ± 3.42	101.75 ± 2.19	97.04 ± 2.54	0.407
Hip circumference (cm)	107.85 ± 3.57	111.6 ± 2.50	108.04 ± 2.85	0.600
WHR	0.91 ± 0.02	0.91 ± 0.01	0.91 ± 0.02	0.996

Nutrients intake

Table 3 relates the nutrients intake of residents according to their age groups including energy yielding nutrients (Macronutrients: carbohydrate, protein, fat and fat subtypes); it also shows the micronutrients' intake (minerals and vitamins).

Table (3): Nutrients intake among elderly based on age categories (Mean±SEM).

	40-60y (n=37)	61-70y (n=36)	71=< (n=56)	p-value
Energy intake (kcal)	2364.87 ± 128 ^{b}	2181.57 ± 78.41^{ab}	2028.20 ± 69.65^{a}	0.033
% of Carbohydrates	49.11 ± 0.80 ^{a}	53.33 ± 1.37 ^{b}	51.91 ± 0.70^{ab}	0.019
% of Protein	16.67 ± 0.66 ^{a}	16.56 ±0.91 ^{a}	16.73 ± 0.58 ^{a}	0.986
% of Fat	34.16 ± 0.78 ^{b}	30 ± 1.30 ^{a}	31.33 ± 0.72 ^{a}	0.017
Fat types				
Saturated fat (g)	19.79 ± 3.36 ^{a}	25.15 ± 3.35 ^{a}	16.35 ± 2.45 ^{a}	0.137
Monounsaturated fat (g)	11.38 ± 0.98 ^{a}	10.78 ± 0.95 ^{a}	12.78 ± 1.01 ^{a}	0.341
Polyunsaturated fat (g)	7.67 ± 1.96 ^{a}	11.48 ± 2.26 ^{a}	11 ± 2.68 ^{a}	0.450
Cholesterol (mg)	368 ± 130.43 ^{a}	271.77 ± 26.38 ^{a}	189.77 ±30.1^{a}	0.262
Trans fat (g)	3.38 ± 0.58 ^{a}	2.95 ± 0.51 ^{a}	4.50 ± 0.15 ^{a}	0.108
Omega 6 (g)	1.60 ± 0.60 ^{a}	2.53 ± 0.60 ^{a}	1.8 ± 0.6^{a}	0.258
Omega 3 (g)	0.60 ± 0.16 ^{ab}	0.29 ±0.11 ^{a}	1.0 ± 0.0 ^{b}	0.007
Micronutrients:				
Mineral				
Sodium (mg)	4957.71 ± 535.66 ^{a}	4189.78 ± 459.62 ^{a}	4996.52 ± 558.72 ^{a}	0.448
Zinc (mg)	5.21 ± 0.39^{ab}	5.37 ± 0.54 ^{a}	4.478 ± 0.45 ^{b}	0.382
Selenium (mcg)	71.35 ± 12.32 ^{a}	52.93 ± 65.26 ^{a}	65.26 ± 11.26 ^{a}	0.617
Potassium (mg)	1609 ± 161.77^{ab}	2142.11 ± 277.48 ^{b}	1252.13 ± 114.05 ^{a}	0.011
Phosphorus (mg)	1133.05 ± 295.38 ^{a}	2514 ± 690.13 ^{b}	852.88 ± 40.24 ^{a}	0.034
Molybdenum (mcg)	57.88 ± 14.80 ^{a}	69.33 ± 21.72 ^{a}	58.12 ± 14.75 ^{a}	0.887
Magnesium (mg)	179.50 ± 16.1 ^{a}	205.96 ± 23.76 ^{a}	168.70 ± 23.65 ^{a}	0.452
Iron (mg)	19.08 ± 2.48 ^{a}	19.30 ± 2.32 ^{a}	17.83 ± 2.58 ^{a}	0.903
Iodine (mcg)	47.83 ± 6. 53 ^{a}	32.63 ± 6.00 ^{a}	49.13 ± 6.44 ^{a}	0.118
Copper (mg)	0.71 ± 0.13^{ab}	1.0 ± 0.18 ^{b}	0.48 ± 0.11 ^{a}	0.042
Chromium (mcg)	1.85 ± 0.20 ^{a}	1.57 ± 0.23 ^{a}	1.78 ± 0.19 ^{a}	0.652
Calcium (mg)	802.25 ± 173.64 ^{a}	1052.30 ± 158.19 ^{a}	554.26 ± 60.26 ^{a}	0.054
Vitamins				
Folate (mcg)	241.13 ± 36.32 ^{a}	375.48 ± 55. 06 ^{b}	197.91 ± 10.41 ^{a}	0.007
Vitamin K (mcg)	76.30 ± 21.93 ^{a}	51.57 ± 22.51 ^{a}	73.04 ± 20.13 ^{a}	0.727
Vitamin E (mg)	2.90 ± 0.52 ^{a}	4.07 ± 0.84 ^{a}	3.61 ± 0.58 ^{a}	0.450
Vitamin D (IU)	60.42 ± 6.96 ^{a}	37.96 ± 7.18 ^{a}	58.52 ± 8.03 ^{a}	0.058
Vitamin C (mg)	85.17 ± 20.82 ^{a}	162.78 ± 29.53 ^{b}	45.26 ± 2.87 ^{a}	0.001
Vitamin B12 (mcg)	0.88 ± 0.11 ^{a}	1.04 ± 0.19 ^{a}	0.74 ± 0.09 ^{a}	0.340
Vitamin B6 (mg)	0.75 ± 0.11 ^{a}	1.26 ± 0.17 ^{b}	0.74 ± 0.09 ^{a}	0.009
Vitamin B3 (mg)	18.04 ± 1.97^{ab}	22.63 ± 2.02 ^{b}	15.74 ± 1.24 ^{a}	0.027
Vitamin B1 (mg)	1.38 ± 0.18 ^{a}	2.04 ±0.21 ^{b}	1.26 ± 0.09 ^{a}	0.004
Vitamin B2 (mg)	1.33 ± 0.14 ^{a}	1.60 ± 0.12 ^{a}	1.26 ± 0.09 ^{a}	0.131

* Values within the same row with different superscripts were significant differences (P <0.05) according to LSD. a,b indicate the group that significantly different from each other based on LSD test

Total energy intakes (kcal per day) were significantly lower in older group than in adult group (p.value= 0.033). It shows a decline from the adult group who are less than 60 years old to the older group who are more than 71 years old. The adult has had a significantly higher total energy intake (p.vlaue= 0.033) while the older had the lowest total energy intake.

The intake of fat percentage of total energy was significantly higher (p.value= 0.017) amongst the adult group. Carbohydrate percentage of total energy intake differed significantly (p.value= 0.019) between the age groups. Carbohydrate intake was the highest in early elderly age group (61-70 years old), while protein intake was in similar percentages amongst all of the three age groups.

Out of all types of fatty acids; omega 3 fatty acids consumption was significantly higher among older groups from food intake, while their cholesterol intake was the lowest. Mono-unsaturated fat MUFA and trans-fatty acids were not significantly different between age groups but the highest intake was among the older aged group.

Micronutrients intake

Among most of the micronutrients; early elderly age groups (61-70 years old) were significantly the highest intake especially for (potassium, phosphorus, and copper) as mineral, and for vitamins (C, B_{12}, B_3, B_1, B_6 and folate). The older group consumed the lowest amount of micronutrients.

Table 4 shows the comparison between average intake of all age groups participants and average Dietary Reference Intakes DRI requirements. The reason the author used DRI to reference the micronutrient intake is twofold. First, DRI data encloses safe and efficient values for each nutrient. Second, DRI references the value of decreasing the risk of chronic degenerative disease (National Academies Press [Institute of medicine] (US); 2000).

This table indicates that the average intake of sodium and phosphorus is ranging from double to triple amount of the DRI

recommendation. However; essential fatty acids (omega 3 and 6), calcium, folate, vitamin D and Vitamin B12 intake were less than the DRI recommended intake level.

Table (4): Comparison between average intake among all participants and average dietary requirements intake DRI.

	Avg Intake	**DRI**
Omega 6 (g)	2.1	11-14
Omega 3 (g)	0.6	1.1-1.6
Mineral		
Sodium (mg)	**4714.7**	1200
Zinc (mg)	5.0	8-11
Selenium (mcg)	63.2	55
Potassium (mg)	1667.7	4700
Phosphorus (mg)	**1500**.0	700
Molybdenum (mcg)	61.8	45
Magnesium (mg)	184.7	320-420
Iron (mg)	18.7	8
Iodine (mcg)	43.2	150
Copper (mg)	3.7	0.9
Chromium (mcg)	1.7	20-30
Calcium (mg)	**803**	1200
Vitamins		
Folate (mcg)	271.5	400
Vitamin K (mcg)	67.0	90-120
Vitamin E (mg)	3.5	15
Vitamin D (IU)	**52.3**	600
Vitamin C (mg)	97.7	75-90
Vitamin B12 (mcg)	0.9	2.4
Vitamin B6 (mg)	0.9	1.5-1.7
Vitamin B3 (mg)	18.8	14-16
Vitamin B1 (mg)	1.6	1.2
Vitamin B2 (mg)	1.4	1.3

Discussion

In Jordan; elderly citizens (age from 60 years and above) form 5.5% of total Jordanian population (total of 10053000 capita). Countries such as Jordan lack in-depth clinical practice concerning the health of the elderly in order to provide health services that meet their special needs. This lack of health service explains the very limited scientific studies that have been carried out in relation to the health of the elderly.

Elderly people in Jordan need more attention from both the government and civil society organizations. Due to the fact that the provision of family care is essential to Jordanian society, most of the population consider moving their elderly to residential homes is a lack of righteousness being "good" to their parents. It is part of the Jordanian culture and religion that children care for their elderly parents and it is unacceptable to allow them to live on their own. However, now a day age, partners and families tend to live away from their parents - either in different countries or in the same region. This has given added value to the idea of moving the elderly into a residential home/nurse that is more suitable and fit for their needs.

Data of this study was collected using interview recall that was completed by the research assistants (trained nutritionists) in the residential homes for the elderly in Amman. Most of the participants suffered from chronic health problems and many did not have adequate health insurance or could not afford health services. The income they lived on was mainly from their families and/or retirement funds. Most of the residents refused the idea of going to elderly's residential homes. The few that accepted this idea, suffered from physical disabilities and negligence from their children and other family members.

Several studies have shown that there is a strong positive association between cardiovascular risk factors with measures of waist circumference or WHR instead of BMI alone. Residents from both genders had higher WHR than WHO recommendation. Forty-five percent of residents suffered from many chronic diseases which related strongly to the high WHR measurements.

Measures of body size (height, weight, waist circumferences and waist to hip ratio) are considered very useful in the assessment of nutritional status. However, anthropometric data cannot be used as the sole criterion, and decision of a particular nutrition problem cannot be made on the base of it. In this present study, even the disabled residents were able to be measured due to the good tools that were used by the assistants.

Dehydration was not detected in the participants which was evident by their symptoms. Symptoms of dehydration are strongly correlated with its diagnostic such as: upper-body muscle weakness, speech difficulty, confusion, dry mucous membranes in nose and mouth, longitudinal tongue furrows, dry tongue and sunken appearance of eyes in their sockets [8]. Most of those symptoms were not detected except for one participant who passed away during the study process.

Total energy intakes (kcal per day) were significantly lower in older group than in the adult group (p.value= 0.033). It shows a decline from adult group who aged less than 60 years old to older group who aged more than 71 years old. This might be due to the increase in total fat intake among the other age groups. However; one of the main observations among elderlies is that a person has less desire to eat when they get older. Snacks in the residential homes were usually high in fat and carbohydrate with low protein content like nuts, crackers, and crumbs. This is explained by the higher intake of fat and carbohydrate among young and early elderly groups with less desirable to snack among older group especially that the saturated fat and cholesterol intake were low among older group.

Hypertension was clearly noticed amongst many residents (hypertension alone or multi-diseases) which would be blamed by the (triple) higher dietary intake of sodium than the recommendation in combined with (triple) lower dietary intake of potassium recommendation. DASH diet was not established in any of the 9 residential homes which is clearly obvious by the nutrients composition of the food presented. DASH is an acronym for Dietary Approaches to Stop Hypertension. The DASH "combination diet" has been shown to

decrease the blood pressure and so helps prevent and control high blood pressure. The DASH "combination diet" is rich in fruits, vegetables, and low fat dairy foods, and low in saturated and total fat. It is important to spot light on the micronutrients intake especially that such minerals and vitamins are very important in the maintenance of the resident optimal health. Vitamins C, B_{12}, B_3, B_1, B_6 and folate intakes were all less than the recommendations. Those vitamins play fundamental roles in the nervous system both structurally and in maintenance of proper nervous system functions.

Most persons who belong to the old adults group consider their health status as either good or fine even if they suffer from chronic diseases [8]. In general, they appear to be able to function independently and care for themselves. In spite of this, the elderly suffers from many chronic problems. They have difficulty in moving and transportation. They do not have much assistance at home for their daily activities. Their definition of health is encapsulated almost only on the (dis)ability health status.

In 1990; a study had been held in the city of Irbid in Jordan to assess the problems of the elderly. It found that the five most important problems suffered by the elderly were poor living conditions, lack of interest in going to public parks and clubs, and lack of respect and affection by their children and other family members. Hence; being emotional, angry and rejecting going to the doctor. Mahafza in 1993 found similar results among 60 elderlies in Jordanian residential homes for the elderly. Those results indicated that the most important problems were recreational, followed by the social, health services delivery and the psychological domains.

Another research work from Jordan in 1995 Al-Shawwa concluded that depression experienced by the residential homes was higher than those living with their families which explained the inactive life style of residents and lack of eating desire. It was noticed that most of the micronutrients intake among the elderly residents didn’t meet the recommended level of micronutrients with DRI in comparison with those living with their families similar to our study findings.

Elderly community in the present study reported the need for health insurance, community care for the elderly, clinics and public gardens and clubs in their communities either within the community or the residence homes. In the Middle-Eastern countries of the Mediterranean region, of which Jordan is one of them; elderly populations have access to the general health care provided to the public by the government. Such health care includes health facilities as hospitals and outpatient departments. Five countries only in the Eastern Mediterranean region (excluding Jordan) reported to have specialized services including geriatric units. Jordan, on the other hand, reported to have no specialized clinics or health professionals available for the care of the elderly.

Based on the findings of this study, it is recommended that efforts and endeavors to be made to help the residents and to think about them; anyway much as could be normal. It should be combined with a national program to create public awareness of the special needs of the ageing population and their significance for the family, besides the promotions of primary health care through training needs and health care. Moreover, the establishment of health and economic services should conduct research on the health needs of the elderly and to support testing and implementation of interventions to meet those needs.

It is also important to develop recreational services for the elderly, whether in the community or in residential homes for the elderly, in order to increase motivation and relief from depression and loneliness. It is important to facilitate leisure in the economic, social and psychological fields and encourage volunteerism amongst elders.

Conclusion

This article is the recent to highlight the matter of nursing home residential in Amman, Jordan. Residential suffered from overweight rather than malnutrition due to high consumption of food with a combination of very low physical activity. Sodium and phosphorus intakes were much higher than the recommendation while calcium and vitamin D intakes were lower. Further study would be gratefully focus on biomedical assessment and merge them with the nutritional outcomes.

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Author statement

Dr Ghazzawi was the responsible of the conception design of the work and the acquisition, analysis, and interpretation of data for the work. She also worked and revised it critically for important intellectual content. She approved the final version to be published. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Statement on conflicts of interest

None declared

Reference

– Department of statistic DOS; 2017. http://dosweb.dos.gov.jo/ar/population/population-2/.

– World Health Organization Regional Office for the Eastern Mediterranean. Accessed Sep 2018 http://www.emro.who.int/emhj-volume-24-2018/volume-24-issue-8/implementing-whos-global-strategy-in-the-eastern-mediterranean-region-what-next.html.

– Hafez, G. Bagchi, K. & Mahaini, R. (2000). Caring for the elderly: A report on the status of care for the elderly in the Eastern Mediterranean Region. Eastern Mediterranean Health Journal, 6:636-651.

– Perissinotto, E. Pisent, C. Sergi, G. Grigoletto, F. Enzi, G. (2002). Anthropometric measurements in the elderly: Age and gender

differences. *British Journal of Nutrition*, 87(2), 177-186. doi:10.1079/BJN2001487

- CDC. Centers for Disease Control and Prevention. (2019). https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html#In terpretedAdults
- World Health Organization. (2011). Waist Circumference and Waist-hip Ratio: Report of a WHO Expert Consultation, Geneva, 8-11 December 2008, World Health Organization.http://www.who.int/nutrition/publications/obesity/WHO_report_waistcircumference_and_waisthip_ratio/en/.Accessed Sep 2018
- Al-Shawwa, S. (1995). *The relationship between the type of care of the elderly and their level of depression*. Master's thesis, University of Jordan, Amman, Jordan.
- Brown Judith E. Lechtenberg Ellen. (2017). *Nutrition through life cycle*. Sixth edition. ISBN 9781305628007
- Abu Nameh, H. (1985). *Problems of the elderly in Jordan*. Master's thesis, University of Jordan, Amman, Jordan.
- Fauziana, R. Jeyagurunathan, A. Abdin, E. (2016). *Body mass index, waist-hip ratio and risk of chronic medical condition in the elderly population: results from the Well- being of the Singapore Elderly (WiSE) Study*. BMC Geriatrics. 16:125. doi:10.1186/s12877-016-0297-z.
- Geller, M. Oliveira, L. Nigri, R. Mezitis, SG. Ribeiro, MG. (2017). *B Vitamins for Neuropathy and Neuropathic Pain*. Vitam Miner 6:161. doi: 10.4172/2376- 1318.1000161.
- Qaddomi, K. 1991. *The problems of the elderly in light of the variables of sex*, marital status, and residence. Master's thesis, Yarmouk University, Irbid, Jordan.
- Mahafza WA, 1993: Problems of elderly in the Jordanian nursing homes. Master's thesis, Yarmouk University, Irbid, Jordan.