Assessing Nutritional Status and Non-communicable Chronic Disease Prevalence Among Mature-Aged Egyptian Females

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ABSTRACT

The purpose of this study was to evaluate the nutritional status and the prevalence of non-communicable chronic diseases (NCDs) among females of mature age. Demographic parameters, Anthropometric measurement, Laboratory analysis, and 24-hour recall were collected from 200 females between 20 and > 60 years of age. According to the body mass index (BMI), 39% of the studied sample were obese and 80% over obesity,63.5%possessed central obesity, The waist circumference revealed 41% at elevated risk and 71.5%at high risk, The waist-to-height ratio (WHtR) revealed 40% at very risk and 47% at increased risk of developing cardiovascular disease. In addition32% had high diastolic blood pressure and 31% had high systolic blood pressure. The biochemical tests revealed that 60.5%,63.5%, and 40% presented total cholesterol, triglyceride, and random blood glucose, respectively. The daily micronutrient intake of females living in Cairo was statistically indicated Different age groups are significantly affected by most of the variables. Daily energy and macronutrient intake of females live in Cairo. There is indicates significant difference between age groups as affected by most of their variable. There is a need for continuous nutritional education programs and monitoring of nutritional and health status to improve the quality the life of females.

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INTRODUCTION

Nutritional status is pivotal in determining overall health, particularly in influencing susceptibility to non-communicable chronic diseases (NCDs). NCDs, including cardiovascular diseases (CVDs), type 2 diabetes, cancer, chronic respiratory diseases, and obesity-related conditions, are major public health challenges globally. These diseases are increasingly recognized as leading causes of morbidity and mortality, with their prevalence strongly linked to dietary patterns, physical activity, and socioeconomic conditions. This research seeks to contribute to the design of preventive measures and interventions that promote healthy aging and reduce the risk of chronic diseases in diverse populations this version includes references to established research and experts in the field, providing academic credibility and context to the introduction. Nutritional status is critical in determining overall health and is a key factor in the prevalence and development of non-communicable chronic diseases (NCDs). NCDs, including cardiovascular diseases (CVDs), type 2 diabetes, obesity, cancer, and chronic respiratory conditions, have become the leading causes of morbidity and mortality globally the rise in the prevalence of NCDs is a concerning public health issue, especially as populations age globally **(WHO, 2020).**

Good nutrition is essential for optimal health and well-being. A well-balanced diet provides the essential nutrients needed for growth, metabolic function, and disease prevention. However, poor dietary habits, compounded by socioeconomic factors, environmental influences, and lifestyle choices, have led to a dual burden of malnutrition: undernutrition, particularly in low- and middle-income countries, and overnutrition, primarily associated with high-calorie diets and sedentary lifestyles in high-income nations **(Drewnowski, 2020).**

This association was observed independent of known confounders. Given these differences, it is essential to examine salutary input in lesser detail, doing so will help to establish the part of the diet in habitual conditions, help in the development of targeted complaint forestallment enterprise,

and ameliorate the effectiveness of public health recommendations. The complications of nutrient input and metabolism make the relationship between diet and health a multifaceted bone. To capture the multidimensionality of diet, studies of the overall diet examine the concerted effect of total salutary input **(Turrini, 2022).**

Aim of the study

The current study will, therefore, try to evoke the nutritional status regarding macronutrient and micronutrient intake at different age groups in mature-aged Egyptian females. It is, hence, imperative that the dietary pattern and level of intake regarding various nutrients such as vitamins, minerals, and energy are identified, which may result in variation and shortage, affecting individuals' health outcomes. The information obtained is supposed to help understand the relationship between such factors and age-related changes in health risks, such as obesity, hypertension, and chronic diseases, which will be useful in targeted nutritional interventions for this population.

SUBJECTS AND METHOD

Study Design and Subjects:

This study was carried out on randomly selected nutritional status and the prevalence NCDs 200 for females aged between 20 and > 60 years, from Cairo, Egypt. NCDs are a group of diseases that are not transmitted from person to person and are characterized by their chronic nature and long duration. These diseases include cardiovascular diseases, hypertension, type 1 diabetes, and type 2 diabetes. Sampling was conducted through the medical convoy named (100 Days of Health) in Cairo governorate from Sept. to Oct 2023. These categories were classified according to the age **(table 1).** A Predesigned and pretested 3-day food frequency questionnaire along with an examination schedule for recording information was used by adopting the face-to-face interview.

The ethical concerns

The Department of Food Sciences "Food Science and Technology" at Ain Shams University's Faculty of Agriculture Department of Food Sciences

(10/2022) gave its approval for this study. A free and informed consent form was obtained from all participants.

Demographic parameters:

The questionnaire was designed by **Hamza et al, (2018)** Data were personally recorded. The questionnaire data revolves around demographic information that includes several questions like age, education status, marital status, occupation, family size, and economic status.

Laboratory analysis:

The sample was divided into 5 groups for 10 days, they were advised to sample is fasting glucose and were allowed to drink only water. The doctor performs a medical examination on them, **measures their** blood pressure **(Whelton et al, 2018)**, and compares it to the normal range. The analysis was performed in the morning and blood samples were drawn within the limits of 3 ml. Samples were stored in bags of ice. To estimate blood sugar (glucose**) (ADA, 2023),** triglycerides **(WHO, 2008),** and total cholesterol **(Ginsberg, 2018)** and compare to the normal range.

Anthropometric measurements:

Weight was taken using a digital balance to the nearest 0.1 kg. Height was recorded using an inch of tape to the nearest 0.1cm. Waist circumference was also taken using inch tape to the nearest 0.5cm. All measurements were taken with the respondents, barefoot. Obesity was assessed using BMI (body mass index). It classifies resulted obesity and the degree of health risks. Central obesity, WHtR (Waist-to-Height-Ratio) is one of the best anthropometric measurements as an indicator of heart disease and diabetes. Central obesity was checked in the respondents using WHtR=waist circum. /height. All measurements were performed according to the techniques described by **WHO (2008); Lee et al., (2008),**

Twenty-four-hour recall:

The amount of nutrients taken was calculated using the food composition table and compared to the percentage of their intake with the Recommend Daily Allows (RDA) given by **Smit et al, (2013).**

Statistical analysis

Basic descriptive statistics of the study participants were presented as frequencies (N) and percentages (%). The difference among means (M)and standard deviation (SD) was determined by ANOVA followed by Duncan's multiple range test using the S PSS package, The Comparison of variables was using the chi-square test. Significance levels measured according to P value (probability) $P>0.05$ insignificant, $P<0.05$ significant, and $P<0.01$ highly significant the level of significance was set at $P<0.05$, $P< 0.01$ high significant **(Steel et al., 1997**).

RESULTS

Table (2) shows that their age group influences Egyptian females' educational qualifications, marriage, and family size. Gradual attachment to mass education among Egyptian feminists is evident, indicating a gradual increase in illiteracy rates. Younger and middle-aged populations have higher education levels, while pessimistic attitudes are prevalent among older females. In Egypt, a significant proportion of women aged 20 to 50 remain married, indicating a potential for future marriages after divorce or husband's expiry. However, the rate of women going through adjustment is seven times higher, with all unmarried women unless single or not married. This shift is considered an important shift. The demographic breakdown of mature-age Egyptian women reveals a consistent occupation and economic status across ages, with a high number of housewives and low participation in the labor market. The majority of women are in the middle economic class, indicating that employment status and economic stability do not change with a woman's age in this particular group of the population. Family size patterns also show differences even in the age distribution, with middle-aged women having larger family sizes (30 to 50 years) young women (20-30), and older women (over 60) having smaller families with three or fewer members. The findings suggest that family size reached a peak during the Middle Ages due to high fertility rates. Despite differences in education,

marital status, and family structure, the demographic break-down shows consistent economic and occupational positions across mature-age Egyptian females.

As evidenced by the data presented in **Table 3,** Egyptian women aged 20 and below have higher mean blood glucose levels, with diabetes becoming more pronounced with advanced age. Total cholesterol and blood plasma triglyceride levels also increase. The proportion of Cairo women with normal blood glucose levels decreases sharply after 29 years, while the proportion of Egyptian women aged 40-49 not diagnosed with blood glucose exceeds 50%. Total cholesterol levels are only 38% in the younger age groups (20-29 and 30-39 years), with the highest percentages in the 40-49, 50-59, and >60 age groups. However, older women are more likely to have elevated cholesterol levels (21.4%, 17.5%, and 7.8%), suggesting that cholesterol management is more important for older women. This trend suggests that, with age, the number of women with high cholesterol levels increases, and there is a statistical significance (P=0.003) with a chi-square value of 15.743. This implies that cholesterol management tends to be more important for older women. The study found that 36.5% of the population has normal triglyceride levels, with the majority in younger females aged 20-29 and 30-39. High triglyceride levels are prevalent in the 40-49 and 50-59 age groups, with 25.5% and 12.5% respectively. This age-related increase in triglyceride levels is statistically significant (P=0.022) and highlights the need for specific dietary and lifestyle changes for older women, as people tend to gain weight with age.

Table (4) presents data on systolic and diastolic blood pressure levels among 225 Egyptian females. The study found that 46% of the sample had normal systolic blood pressure, with 6.5% and 20% falling within the younger age group categories (20 – 29 and 30 – 39 years), respectively. However, significant hypertension was observed in the upper age groups, with 21% reporting high systolic blood pressure. No severe hypertensive subjects were found in any age group. The F-proportion of the

difference in systolic blood pressure across age groups was high, indicating that systolic blood pressure increases with age due to the risk of hypertension in aging women. On the other hand, only 41% of the participants displayed normal levels of diastolic blood pressure, mainly in the younger (20-29; 30-39 years) and middle (50-59 years) age groups. Low diastolic pressure levels were common in the age group of 30 to 39 years, and significant hypertension was mainly in the age groups of 40 to 49 years and 50 to 49 years. The age-related variation in diastolic blood pressure values in different age groups in this population was statistically significant across the groups (P-value = 0.002) with a chi-square value of 24.579, thus confirming age as one of the important factors for variations in diastolic blood pressure in this population. In the lifetime course of blood pressure, both systolic and diastolic show distinct variability with age. Younger patients have lower incubation rates of hypertensive conditions, while later stages are more structural in middle-aged and older patients. Women must practice monitoring and managing their blood pressure levels as they progress to older age ranges to manage advanced hypertension and related health issues.

Table (5) displays the mean blood glucose levels, blood pressure, total cholesterol, triglycerides, and other health indicators of Egyptian females across different age categories. The results show that health indicators worsen with increasing age, with notable differences within each age category. The trends in blood and glucose levels among older groups are not as favorable. Blood glucose levels have a positive correlation with increasing age, with the 20-29- and 30-39-year groups having relatively low levels. Older groups, such as 50-60, have blood glucose levels of 186.80±89.11 and are at higher risk of diabetes, with the 60 and above age group having a significant level but lower than older groups. Systolic and diastolic blood pressure levels tend to go up with age, with higher systolic readings indicating a greater risk for hypertension. The pattern of change in diastolic blood pressure is similar, with the youngest group having an average

of 76.19 ± 9.20, while the 50-60 subgroup increases to 93.57 ± 6.81. This rise in blood pressure indicates an increased risk of cardiovascular disease (CVD).

Cholesterol and Tri-glycerides: Age is linked to increased total cholesterol and triglyceride levels in the general population. The 20-29 and 30-39 age groups have lower cholesterol levels, while older groups show a marked increase, with maximum levels in the 50-60 and >60 age groups (99.87 ± 7.86 and 112.09 ± 12.09, respectively). Triglyceride levels are similar, with lower levels in younger groups and higher levels in older age groups. These patterns respond positively to aggressiveness in older age groups, with determinants of lipid levels being sought to curb associated risks.

The data provided in **Table (6)** analyzed obesity waist circumference, waist-to-height (WHtR), central obesity, and body mass index (BMI) in Egyptian females. Results showed significant age-related trends, with obesity and central obesity increasing with age. The proportion of females with normal waist circumference WHtRs decreases with age, with the youngest group having the highest percentage at 3.0%. Older age groups had 4.5% and 3.5%, respectively. At-risk proportions were found in the 30-39 age group at 5%. High-risk waist circum-ferences were predominantly observed in the 40-49 and 50-60 age groups, with 25% each. This trend is statistically significant (P-value = 0.002) since a chi-square value of 14.306 was obtained, indicating an increase in the risk of developing abdominal obesity as one age. The study reveals that the youngest women aged 20-29 have the highest percentage of women at no increased risk (<0.5), but this number declines sharply with age. The "low risk" category is most common among members aged 30-39 years, with 17.5% of women scoring between 0.5 and less than 0.6. The "very high risk" category, defined as WHtR ≥ 0.6, also increases in older age groups, with the 40-49 and 50-60 age groups having the highest percentages. The findings indicate that younger age groups are the most common subgroups with Z-scores for central obesity levels, which decrease as age increases. The study confirmed the increase

in central obesity trends with age, with older participants mostly classified under the obesity class (25-29.5 kg/m² and >30 kg/m² "over obesity"). Over obesity is most common in older age groups, specifically 40-49 and 50-60, with 28% and 10.5%, respectively. This indicates that older age groups develop more BMI-related obesity, suggesting an age factor in health risk conditions, with elderly Egyptian females suffering more obesity.

Table (7) presents the means of physiological and obesity-disposing factors among Egyptian females, revealing distinct trends as age brackets increase. The highest average weight is found in the 50-60-year age group, with a notable dip in weight for those over 60 years. The height data is similar across all age groups, suggesting that women gain weight and advance to middle age, increasing the prevalence of obesity. Body mass index shows a significant increase with age growth, from 2.29 ± 0.686 in 20-29 years to 5.56 ± 2.80 at over 60 years. Waist circumference also shows a trend of increased obesity as aging progresses. Younger groups have the lowest waist circumference values, while the highest is 120 ± 17.2 cm in the 50-60-year age group. Measures such as waist circumference and weight estimates have increased since middle age, indicating that central obesity is more pronounced in older female groups. The study found that central obesity, defined as fat accumulation around the waist/hips, remains consistent across all ages. The estimated ratio in the 20 – 29 age group stood at 0.817 ± 0.070, whilst the ratio for the 50 – 60 age group stood at 0.859 ± 0.075. The mean waist-to-height ratio (WHtR) was highest in the 40-49 age group, with a mean of 155.7 ± 181.9 cm. The severity and impact of central obesity are more pronounced in middle-aged individuals. The gradual increase in BMI and waist girth values is alarming, as it increases the risk of obesity and related diseases with age.

The study reveals that Egyptian females' energy, protein, fat, cholesterol, carbohydrates, and fiber intake varies based on their age group (**Table 8).** As women

age, their intake of macronutrients increases, increasing their risk of chronic diseases. Women aged 20-29 have the highest energy intake, while those aged 50-60 have the lowest. Caloric intake declines with age, largely due to physical activity and family responsibilities. However, as women age, calorie consumption decreases in protein, fat, and carbohydrates. Protein intake increases for women aged 40-49, with an approximate figure of 98.9 g, while fat intake decreases for women aged 20-29, with an approximate figure of 96.6 g. Beverage fat consumption is increasing, with the elderly 60+ years having the highest intake and those aged 40-49 years having the lowest. This suggests that older women tend to consume high-cholesterol foods, increasing the risk of cardiovascular meltdowns. Carbohydrate consumption remains stable in younger and middle-aged groups, but the older generation has the lowest intake. Fiber consumption remains constant across all ages, but the quantitative level appears low. Protein-energy ratios rise from pre- to post-menopausal groups, with the highest in the 60+ group at 17.5 ± 4.05%. Carbohydrate energy content is fair across all age groups, but the ratio in the >60 groups is 46.1 ± 12.03%, indicating a carbohydrate reduction. Fat energy ratios remain relatively constant, with a slight rise in the over-60 group at 16%. These trends suggest dietary patterns change with aging, potentially requiring nutrition modification, especially for elderly women, to promote well-being.

Table 9 shows that the intake of vitamins varies with age, with Vitamin A intake being more prevalent among females aged 40-49 and Vitamin C being more consumed in older age groups. This suggests that Vitamin A intake does not reach the recommended daily intake (RDA) thresholds, especially for elderly females. However, Vitamin C intake is higher in older age groups, with the 50-60 age group having the highest intake (56.7 ± 32.7 µg) and those above 60 having the highest (50.7 ± 28.9 µg). Thiamin and Riboflavin intergroup intakes do not significantly vary with age, suggesting that intergroup consumption of these vitamins is likely sufficient for most age groups. Mount intake varies across age groups, particularly regarding calcium and phosphorus.

Calcium intake increases with age, with the older women consuming 924.9 ± 543.1 µg, while the 20-29 age group consumes 781.1 ± 276.3 µg. Phosphorus intake also increases with age, with calcium intake being highest in the >60 age group (1156.6 ± 431.9 µg). Iron and zinc intake remains consistent across all age brackets, suggesting a good state of these nutrients during different age stages. Sodium and potassium consumption varies significantly among age groups, with Sodium consumption being highest in the 40-49 age range (3506.5 ± 1663.8 µg) and decreasing in older individuals. Older women may modify their diets to prevent hypertension and cardiovascular diseases. Potassium consumption was highest in the early 20s and decreased in older groups, potentially causing older women to fail to meet RDA levels. Allergies remain constant across all age groups, indicating sufficient micronutrient cons-umption across life cycles. Overall, Sodium and Potassium consumption is sufficient across all life cycles.

Discussion

This study will, hence, try to indicate the levels of macronutrient and micronutrient intake across different age groups among mature Egyptian women. It becomes necessary to determine the dietary habits and pattern and level of intake of some micronutrients such as vitamins, trace elements, and energy, which may cause asymmetry and deficiency, thus affecting the health status of individuals. These are intended to assist in relating such aspects to the risks of age-related morbidity in terms of obesity, hypertension, and chronic diseases, which will be helpful in the implementation of targeted dietary interventions for women of this age. It is observed that education attained, marital status, and family size among mature-aged Egyptian women are age-dependent. The outlook of general literacy towards Egyptian feminists is a sign of the eventual improvement of the literacy levels of this population. The younger and middle-aged groups of the population are recording more scope of education. However, older females appear to have aloof

and pessimistic outlooks. However, many married women in the 20-50 age group indicate a changing pattern in the demographic context.

This research focuses on identifying any correlations between the nutritional status of English women and common chronic diseases with specific emphasis on Egyptian females. The study shows the average levels and some indicators of health, such as blood glucose, blood pressure, total cholesterol, and triglycerides, in several age groups of Egyptian females are presented in the study. Blood and glucose concentration in younger persons is more optimistic for the older to decipher within elderly populations. The age stratification of the data and results have shown that as you age, your blood glucose levels also increase, and the above is a favorable connection. Glucose levels in blood among younger women aged 20-29 and 30-39 are relatively low; however, their counterparts aged 50-60 have specific glucose levels, which average approximately 186.80 89.11 186. 80±89.11 presents high glucose levels and risk of distant progression of the disease compared to other older population age groups, whereby the risk increases. At age 60 and above, the influence of a significant glucose blood level is slightly lower than in the old-aged populations. Blood pressure values are not constant throughout life; with age, so are blood pressure values. Systolic blood pressure values of individuals aged 2019 are 106.67 9.66, whilst for over 60 years, mean systolic blood pressures are 141.25 21.56. The older cohorts of advanced ages of 50-60 and 60+ years show heightened systolic BP levels, and these are suggestive of the presence of hypertension factors. There is also a predictable trend in diastolic blood pressure, with averages of 76.19 ± 9.20 in the youngest cohort and 93.57 ± 6.81 in the 50-60 age grouping. The aged 60+ then experienced a slight drop in the average diastolic measures 81.88 ± 11.08. The striking increase in blood pressure with progression in age is synonymous with a higher likelihood of cardiovascular disease (CVD) . Similarly, Age is also associated with an increase in the levels of total cholesterol and

triglycerides among the general population. Cholesterol in the young first 20-29- and 30-39-years cohorts is reported to be on average 87.18 ± 11.21 and 79.08 ± 7.93, respectively, relatively lower than the more senior cohorts aged 50–60 years and above 60 who are reported at 99.87 ± 7.86 and 112.09 ± 12.09 respectively. Triglyceride levels observed in the youngest group were relatively stable and were 126.01 ± 31.80 in the 20–29 age bracket, but in more senior age brackets above 50 years, it peaked at 198.66 ± 99.11. Such findings outline a lipid profile shift among the specific middle-aged areas. The patterns show an aggressive response in older segments of the population, but rather, the emphasis is on the risk factor for the course of the lentonian lipid levels. Poor nutrition is now considered one of the significant risk factors for chronic illnesses. Numerous studies have reported that inadequate dietary intake and unhealthy nutrition patterns predispose individuals to type 2 diabetes, coronary heart disease, and some forms of cancer**. Hu (2003)** states that excessive consumption of saturated fats, refined sugars, and processed food increases the risk of metabolic and cardiovascular diseases. The investigation involving a cohort of more than eighty-four thousand people mentioned above shows that the highest intake of trans fatty acids was associated with a 33% increased risk of coronary heart disease compared with the group with the lowest consumption of trans fats **(Hu 2003).** Such evidence shows that making changes in the diet can reduce the rates of chronic diseases.

Micronutrient deficiencies and risk factors for chronic diseases are also known to be associated. A meta-analysis by **Gropper et al., (2018)** showed that vitamin D, iron, and omega-3 fatty acids were associated with an increased risk of osteoporosis, anemia, and cardiovascular diseases, respectively. The authors performed a systematic review based on more than 50 studies. They concluded that populations with low serum vitamin D levels have a fourfold increase in fracture risk and a twofold increase in risk of developing osteoporosis. These findings highlight the role of micronutrient

deficiencies in the etiology of chronic diseases **(Gropper et al., 2018).**

Chronic diseases and diets that cause inflammation of body tissues are causally linked. For example, in the study by Shivappa et al., the Dietary Inflammatory Index (DII) assessed certain aspects of the nutrition of the surveyed individuals. It revealed that high intake of red meat, processed food, and sugary drinks led to a 41% increase in the risk of cardiovascular diseases. Also, in the analysis of DII, where more than 10,000 participants were involved, it was shown that the inclusion of a diet that is the opposite of inflammatory, i.e. rich in fruits and vegetables and whole grains, could improve this risk by nearly 20% **(Shivappa et al., 2014).** Such findings could help highlight the preventive aspect of this dietary approach in dealing with chronic diseases, and the nutrition component cannot be understated as several studies depict that it falls in the nexus. From the role that overnutrition or micronutrient deficiency plays to inflammation caused by diet to the role appropriate dietary interventions can play, all of the above have been shown to lower chronic disease risk. Ignoring the nutrition focus, irrespective of the level, won't help with the problem of chronic diseases, which have been growing in number and burden across the globe.

The interaction between Egyptian women's age, education level, and diet indicates that both age and education substantially affect food selection and health factors. In most cases, younger Egyptian women are more educated than older because of increased educational opportunities in the last few decades. Such educational disparity is directly related to dietary practices whereby younger/elevated groups of educated women understand healthy nutrition better and thus eat better and avoid chronic diseases such as obesity, hypertension, and diabetes **(Jayedi et al., 2020; Sayed et al., 2022).** On the other hand, even when women are upper age group of 50 years and above, such women are likely to be less educated or illiterate. This educational disparity results in a lower understanding of good dietary practices, leading to a narrow variety of diets and high

consumption of energy-wealthy and processed diets. These trends tend to use up more power and thus cause a lot of cardiovascular diseases and metabolic syndrome prevalence among older women **(Rus et al., 2014: Yang et al., 2022).**

The most recent data demonstrates that these women consumed more than their Recommended Dietary Allowance (RDA) of energy, protein, fat, cholesterol, carbohydrates, and fiber. The intake of macronutrients tends to increase as women age, which is logically associated with an increase in chronic diseases. Energy intake was the highest among non-pregnant women aged 20-29 and the least among those aged 50-60. With increasing age, caloric consumption is lower, and older women have social and family obligations that render them inactive. With advancing age, there will be a decrease in average caloric consumption and a reduction in protein, fat, and carbohydrate components. Women aged 40 to 49 are almost 98.9 g, but prevalence is low in older women. Young females aged 20-29 consume approximately 96.6g of fats daily, while females aged 50-60 consume less. The consumption of beverage fat content progresses with age, as the amount consumed by older females over 60 is highest, and females 40-49 consumed the lowest. This could show older women consume a lot of high-cholesterol foods, which increases susceptibility to cardiovascular meltdowns. Younger and middle-aged women consume similar amounts of carbohydrates, while aged women consume the least.

The consumption of fruits stays the same across all ages, with a low degree of consumption. The protein-energy ratio increases with the change from pre- to post-menopausal, realizing the highest in the group aged 60+, where it stands at 17.5 ± 4.05%. The energy content of carbohydrates is fair in all age groups, while in the age of more than 60 years, the ratio stands at 46.1 ± 12.03%, which shows a decrease in energy contribution from carbohydrates. The energy ratio of fats has been very stable, but there has been an increase in the group of more than 60 years.

There is evidence that suggests that younger, educated women adopt healthier food

options while older, uneducated women may tend to eat unbalanced diets, exposing themselves to diet-related sickensses. Education is an essential factor that affects one's dietary habits, and improving nutritional education and awareness among older women and all age categories would improve health. These results are supported by many studies, such as **Rea et al., (2019); Ong, et al., (2021); Chin et al., (2023).** On the other hand, it becomes clear that Egyptian women have been eating below international standards regarding the intake of macronutrients and micronutrients. Other nutritional surveys indicate that Egyptian women's dietary patterns and nutrient intake levels are culturally and econo-mically determined and differ from nails elsewhere in some parts of the broader Middle East region.

In many studies, Egyptian women's macronutrient intake, such as energy, protein, fat, and carbohydrates, has been shown to differ from world averages. For instance, **Jayedi et al., (2020), as well as Chin et al., (2023),** report that women in Egypt tend to have diets consisting of more carbohydrates and fats, especially saturated fats, making them more susceptible to the risk of obesity and cardiovascular diseases. For example, even a typical Egyptian woman's diet includes large quantities of starches from bread, rice, etc., increasing carbohydrate consumption. On the other hand, guidelines issued **by (WHO, 2018)** and other such countries, including the United States, demand a higher overall balanced intake of more healthy fats, such as unsaturated fats, whole grains, and lean proteins obtained from fish and poultry. The protein intake of women in Egypt varies with the age and economic status of women. Still, from a global perspective, it is much lower than the Western diet, which is more diversified in protein sources such as beans, legumes, fish, and lean meat **(Ong et al., 2021).** The use of plant proteins, mostly lentils, and beans, from the Egyptian women's diet is a result of her economic situation and the availability of such proteins, leading to the consumption of protein that might fall below the widely acceptable international standard, most notably in the aspect of variety and depth.

As for the intake of essential vitamins and minerals, several studies provide evidence of shortfalls by Egyptian women in vitamin D, calcium, and iron intake targets set by international authorities. According to studies by **Arnold (2017); Salem et al., (2021),** there is a high prevalence of vitamin D, calcium, and iron among women in Egypt, especially those aged 50 years and older. Vitamin D deficiency is widespread owing to the limited exposure to sun rays and low consumption of highly fortified dairy products, which are common in developed countries. However, such international studies indicate higher vitamin D and calcium consumption in other countries where supplements and fortified products are expected.

Calcium intake in Egyptian women gradually improves with age but does not meet international standards, especially in women from Europe and North American countries where dairy products are more consumed **(da Silveira et al., 2022).** This is associated with economic and cultural reasons since Egyptian women do not have easy or affordable access to dairy foods. Iron intake, on the other hand, although steady in Egypt, tends to be lower than the recommended level for an ethnically diverse diet, especially with the high rates of anemia in Egypt **(Mokhtar, et al., 2022).** In Western countries, greater iron intake is sourced from the consumption of red meat and fortified foods that are not widely used in Egyptian cuisine. Concerning certain nutrients, among them vitamins A and C, it can be said that although women in Egypt take such vitamins, their intake levels are often less than internationally recommended. For example, vitamin A intake varies but is generally lower than in Western diets, where dairy, fish, and vitamin-fortified food are more readily available **(Mokhtar, et al., 2022).** Likewise, there are also generally lower levels of ascorbic acid intake in Egypt, partly due to a deficiency of fresh fruits and vegetables, which are more readily available in Western nations than their Egyptian counterparts.

The present findings further emphasize these as they demonstrate the vitamin and mineral consumption in different age groups. The intake of vitamin

A is somewhat uneven, with the most intake coming from females in the age bracket of 40-49 years and the least from the 60 and above age group. The trend is, however, towards Vitamin C being consumed more in the older age brackets right up to the over 60 years of age group, with the 50–60-year group exhibiting the most. There is not much variation in intergroup intakes of thiamin and riboflavin across age groups, reinforcing that intake of these vitamins in intergroup populations is most likely adequate in all age groups.

Calcium and phosphorus are observed to have variations in intake deficiencies across various age groups. Specifically, calcium intake rises steadily with age, peaking for women in the 20-29 age group. Phosphorus intake also increases with age, but the majority of calcium is consumed by those over 60. Iron and Zinc intake levels appear to be relatively stable across age brackets, indicating an adequate nutrient status or status of these nutrients during various life stages. Magnesium intake has no significant change as a person's age increases. Sodium and potassium intake seems to have a noticeable difference among age groups. The highest sodium intake was observed in the 40-49 age group but declined in the older age group. Hypertension can be prevalent in the older age group, and perhaps these women change their diets to decrease the chances of developing cardiovascular diseases. Those in their early 20s had the highest potassium intake, but older age groups failed to meet the recommended dietary allowance of potassium, primarily due to older women's lack of potassium intake. No age-related change in allergies implies that allergies are consumed adequately during all life cycle stages.

On the other hand, sodium consumption among Egyptian women is remarkably higher than recommended worldwide, as noted by the studies conducted by **Jayedi, et al., (2020).** The excessive sodium consumption is attributed to the custom of eating a lot of salted foods such as pickles and bread. On the other hand, other guidelines from organi-zations such as WHO and the American Heart Association recommend that sodium intake be less than to reduce the risk of

hypertension. In some Western nations, sustained progress in public health initiatives has reduced sodium content in processed foods, a phenomenon not yet fully attained in Egypt. The comparison points out that although Egyptian women's dietary habits and intake of nutrients are strongly affected by culture, economy, and societal factors, they tend to fail to meet the global standards of healthy and balanced diets.

Dietary insufficiency, especially micronutrient deficiency such as vitamin D, calcium, and iron, calls for better availability of nutritionally balanced and fortified food. Education and policy change may improve these chronic disparities in health, enabling the Egyptian female population to consume diets similar to the recommended patterns and reducing the burden of non-communicable diseases. For example, in this study, occupation and economic status are invariant across ages, with many homemakers with minimal market participation. Most women can be classified in the middle class; thus, it is noted that the employment and economy do vary with age. However, there are also differences in the family size structure, where middle-aged women have more children than younger or older women with fewer children. As the study suggests, the family size peaked during the Middle Ages with higher fertility rates. Hence, education, marital status, and family structure have demographic specificity, but the appreciable economic and occupational status among mature-aged females in Egypt persists. Some studies seek to describe the relatedness of different age groups in Egypt with a focus on the dietary behavior of overweight and obese women. A common finding in these studies is the association between unfavorable eating habits high in carbohydrates, fats, and sugars and obesity and its prevalence in contrast to younger women, particularly those around middle age or older. For example, **Aboulghate et al., (2021); El-Qushayri et al., (2023)** appreciate that high energy-dense diets have a significant contributing factor in increasing obesity cases, especially among the elderly female populations that are most likely to develop chronic

conditions like hypertension or diabetes. Such studies warrant active responses in the form of research and policy initiatives that advocate for dietary changes in Egypt to minimize the prevalence of Unhealthy food patterns.

Numerous studies have revealed that age impacts dietary patterns about the risk of obesity among Egyptian women. As noted by **Seifu et al., (2021); El-Qushayri, et al., (2023),** middle-aged women aged 40-65 persistently have poorer dietary patterns as they consume high-fat and high-sodium foods. The studies reveal that because of the still-practiced dietary traditions and reduced activity levels, women in these age brackets have more significant obesity than the younger groups of the female population. In contrast, younger women, as observed in a study by **Jayedi et al., (2020),** may go on to develop better. However, it is still harmful, and dietary patterns are still at risk because carbohydrate foods such as bread and rice are central in the diet. Other studies in this field of work unmask the relevance of micronutrient insufficiencies to obesity among special populations such as older Egyptian women. According to **El-Qushayri et al., (2023),** inadequate intake of these vitamins and calcium leads to women's obesity and other problems like osteoporosis. It has also been confirmed that older women, especially those above the age of 50 years, are subjected to a 'triple burden of malnutrition' in that they have a high intake of calories through poor feeding practices while, at the same time, there is insufficient adequate consumption of micronutrients. Therefore, health policies need to be put in place to address overnutrition and the deficiency of micronutrients among women in Egypt.

A study was conducted to look at the particular trends in obesity among Egyptian females, focusing on waist circumference, waist-to-height ratio, central obesity, and body mass index, as defined by the research by **Ecker et al., (2016)**. It was seen in these studies that there was a greater risk of developing abdominal obesity as the age of the sample increased. Most respondents in the youngest group (20-29 years) reported normal waist circum-ference WHtRs at 3%, but this

proportion increased with increasing ages, with older groups reporting 4.5% and 3.5%. As for the proportions of the at-risk weight category, they were not very common in the age group of 30-39 (5%). Very high proportions of high waist circumferences were found in the age bracket of 40-49 and 50-60 at 25% each.

The current WHtR data indicated that the youngest group of women is represented mainly by females, having no increased risk (less than 0.5). Still, as age increased, this figure decreased rapidly. Among members aged 30-39, the prevalence of "low risk" categories was the highest at 17.5%, and the members aged 40-49 years at 14.5%. As the members aged, the terms associated with "very high risk" also began to increase, with the 40-49 and 50-60 age groups having the highest percentages. When assessing central fat distribution patterns, younger age cohorts most frequently appeared in central obesity Z-scores, which decreased with age. Overall results of 37.383 for chi-square and 0.001 for p-value validated the research conducted by Koskinen et al. with an emphasis that central obesity trends increase with older age. The BMI samples of the older age in the current sample included the majority belonging to the class of obesity (25-29.5 kg/m² and over 30 kg/m² 'Over obesity'). Over obesity was predominantly found among the 40-49 and 50-60 age groups, with 28% and 10.5%, respectively. This finding shows a trend of age factors regarding health risk conditions concerning increased risk conditions among older Egyptian females. Another critical recommendation in our study and these studies is the link between education, insight, and included eating habits. Research by **Schwingshackl and Hoffmann (2015); El-Qushayri, et al., (2023)** indicate that less educated and old females from Egypt tend to maintain a traditional and, therefore, less balanced diet, leading to more cases of obesity. Contradict to this are the findings of **Ecker et al., (2022),** which argue that with greater awareness and education, diet can be modified, which in turn reduces obesity among the younger educated demographic; the gap between the two poles invites an improvement in the educational programs related to

nutrition as a means of addressing obesity in Egypt. The investigations underline a persistent call for respectful targeting of nutritional strategies that echoes age and socio-economic determinants. It has also been substantiated those diets with high copy and low physical activity correlate positively with the prevalence of body fat, particularly for postmenopausal women **(El-Qushayri et al., 2023); (Seifu et al., (2021).** These researches sufficiently establish the need for conducting culturally relevant and age-effective interventions. Younger women may respond positively to diversification in diet, especially the protein and fat sources, while older women need fortified foods to overcome deficiencies in their efforts to modify obesity.

CONCLUSION

This study makes evident the alarming link that exists between the nutritional status and the existence of NCDs in adult-aged Egyptian females. The results show unambiguously that obesity, hypertension, and unhealthy lipids status become more prevalent with the advance in age. In particular, 80% of the subjects were found to be over-obese, with a great many of them suffering from central obesity and an increase in risk factors of coronary heart disease. On the other hand, biochemical examinations also expose disturbing values of cholesterols and triglycerides, which points to the necessity of more rigorous health supervision. The results imply that dietary habits and nutrient consumption are age-dependent. Hence, the need for such nutritional education and intervention strategies should be long-term in nature. Such programs should promote and encourage good eating practices, physical activity, and regular health checks to decrease the chances of NCDs**.**

Recommendations

- Implementation of Nutritional Education Programs: Formulate community strategies for reaching mature women with the message regarding healthy nutrition and lifestyle practices.
- Regular Health Screenings: To identify and manage

possible health problems, we recommend periodic medical evaluations of blood pressure, glucose, cholesterol, and triglycerides.

- Tailored Nutritional Interventions: Ensure that nutritional rostering is age-specific and that a uniform plan is designed to correct die-fueling insufficiency and promote good health.
- Collaboration with Healthcare Providers: Create synergies between nutritionists, health practitioners, and community organizations in managing women's health within this age category.
- Policy Advocacy: Policies that increase the accessibility of nutritious foods and possibilities for physical activities within the neighborhoods should be encouraged for better health outcomes for older women**.**

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Table (1). Classification of studying samples according to age.

Age group (y)	Female	
	No.	%
20-29	21	10.5
30-39	67	33.5
40-49	61	30.5
50-60	35	17.5
>60	16	8

Table (2): Demographic characteristics of females concerning their age.

Parameter	Demographic character					
	20-30(y) (n=21) No (%)	**30-40(y) (n=67) No (%)**	**40-50(y) (n=61) No (%)**	**50-60(y) (n=35) No (%)**	**>60(y) (n=16) No (%)**	**P-value**
Education						
Illiterate	0(0)	4(2)	13(6.5)	12(6)	10(5)	
Elementary **Preparatory** **Intermediate** **University degree**	0(0) 0(0) 10(5) 11(5.5)	0(0) 2(1) 29(14.5) 32(16)	2(1) 1(.5) 35(17.5) 10(5)	4(2) 5(2.5) 12(6) 2(1)	2(1) 1(0.5) 2(1) 1(0.5)	0.000**
Occupation						
Working	1(0.5)	10(5)	4(2)	6(3)	4(2)	
Housewives	20(10)	57(28.5)	57(28.5)	29(14.5)	12(6)	0.168
Marital status						
Married	19(9.5)	56(28)	46(23)	16(8)	7(3.5)	
Divorced **Widower** **Single**	0(0) 0(0) 2(1)	8(4) 1(.5) 2(1)	10(5) 3(1.5) 2(1)	3(1.5) 15(7.5) 1(0.5)	4(2) 5(2.5) 0(0)	0.000**
Family size						
≤3	5(2.5)	4(2)	3(1.5)	3(1.5)	4(2)	
4-5 **>5**	14(7.1) 2(1)	48(24.4) 15(7.6)	36(18.3) 21(10.7)	15(7.6) 15(7.6)	3(1.5) 9(4.6)	0.000**
Economic status						
Low	0(0)	5(2.5)	2(1)	2(1)	2(1)	
Middle **High**	21(10.5)	62(31.5)	59(29.5)	33(16.5)	14(7)	0.432

P-value ≤ 0.05 is significant.

Table (3): Classification of biochemical tests of Egyptian females according to age.

Item/ age		20-29year (n=20)		30-39year (n=67)		40-49year (n=61)		50-59year (n=35)		>60year (n=16)		Total (n=200)			
Parameters	range	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**p-value**	**Chi-square**
Blood glucose	**(70-99 Normal)**	21	10.5	63	31.5	5	2.5	20	10	11	5.5	120	60	0.000**	35.771
	> 150(diabetic)	0	0	4	2	56	28	15	7.5	5	2.5	80	40		
Total cholesterol	**<200mg/100ml, normal**	8	4	45	22.5	20	10	2	1	1	0.5	76	38	0.003**	15.743
	≥200mg/00ml disorder	13	6.8	22	11.5	41	21.4	33	17.5	15	7.8	121	60.5		
Triglycerides	**50-150 mg/dl**	13	6.5	30	15	10	5	10	5	10	5	73	36.5	0.022*	11.440
	>150mg/dl	8	4	37	18.5	51	25.5	25	12.5	6	3	127	63.5		

P-value ≤ 0.05 is significant.

Table (4): Classification of hypertension according to age

Item		20-29year (n=21)		30-39year (n=67)		40-49year (n=61)		50-59year (n=35)		>60year (n=16)		Total (n=200)			
		No	%	No	%	No	%	No	%	No	%	No	%	p-value	chi-square
Systolic blood pressure	Low	7	3.5	21	10.5	10	5	3	1.5	3	1.5	44	22	0.001**	33.383
	Normal	13	6.5	40	20	9	4.5	23	11.5	7	3.5	92	46		
	Significant hypertension	2	1	6	3	42	21	9	4.5	5	2.5	64	32		
	Severe hypertension	0	0	0	0	0	0	0	0	0	0	0	0		
Diastolic blood pressure	Low	8	4	30	15	12	6	2	1	4	2	56	28	0.002*	24.579
	Normal	10	5	30	15	18	9	18	9	6	3	82	41		
	Significant hypertension	3	1.5	7	3.5	31	15.5	15	7.5	6	3	62	31		
	Severe hypertension	0	0	0	0	0	0	0	0	0	0				

P-value ≤ 0.05 is significant.

Table (5): Statistical analysis of laboratory analysis of females living in Great Cairo

Age group(y)	blood glucose	Systolic blood pressure	Diastolic blood pressure	Total Cholesterol	Triglycerides
20-29	116.01±21.81d	106.67±9.66d	76.19±9.20c	87.18±11.21b	126.01±31.80d
30-39	112.50±42.90d	117.91±9.46c	68.07±6.92c	79.08±7.93c	122.87±52.98d
40-49	128.60±49.11c	123.03±13.57b	79.92±8.29b	88.97±9.23b	138.76±59.01c
50-60	186.80±89.11a	137.71±11.90a	93.57±6.81a	99.87±7.86a	198.66±99.11a
>60	174.12±80.20b	141.25±21.56a	81.88±11.08b	112.09±12.09a	184.12±90.20b

Data are mean ± SD, means with the same letter in the same column are not significantly different at P<0.05.

Table (6): Anthropometric measurements as affected factor by age group.

Variable		20-29year (n=21)		30-39year (n=67)		40-49year (n=61)		50-60year (n=35)		>60year (n=16)		total			
		No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**p-value**	**Chi-square**
Waist Circumference	**Normal (64-80 cm)**	6	3	13	6.5	11	5.5	9	4.5	7	3.5	46	23	0.002*	14.306
	Elevated risk (80-88 cm)	0	0	10	5	0	0	1	0.5	0	0	11	5.5		
	High risk (> 88 cm)	15	7.5	44	22	50	25	50	25	9	4.5	143	17.5		
Waist-to-height ratio WHtR	**No increased risk <.5**	2	1	10	5	5	2.5	4	2	5	2.5	26	13	0.000**	16.888
	Increased risk 0.5:<.6	10	5	35	17.5	29	14.5	15	7.5	5	2.5	49	47		
	Very high risk ≥.6	9	4.5	22	11	27	13.5	16	8	6	3	80	40		
Central obesity	**Normal**	13	6.5	21	10.5	13	6.5	18	9	8	4	73	36.5	0.001**	37.383
	Obesity	8	4	46	23	48	24	17	8.5	8	4	127	63.5		
Body mass index	**Normal(20-24kg/m2)**	1	0.5	0	0	0	0	0	0	0	0	1	0.5	0.000**	16.385
	Obesity (25-29.5kg/m2)	0	0	15	7.5	5	2.5	14	7	5	2.5	39	19.5		
	over obesity (>30kg/m2)	20	10	52	26	56	28	21	10.5	11	5.5	160	80		

P-value ≤ 0.05 is significant.

Table 7: Statistical analysis of anthropometric measurements of Egyptian females according to age group

Age groups(year) / Variable	(20-29) (n=21)	(30-39) (n= 67)	(40-49) (n=61)	(50-60) (n=35)	(>60) (n=16)
Weight, kg	88.5±15.1c	90.3±14.5b	90.4±17.3b	97.1±18.1a	89.6±12.2a
Height, cm	157.7±5.7a	158.2±6.4a	154.9±6.3a	154.4±6.3a	156±6.6a
BMI, kg/m2	2.29±.686a	2.92±1.05a	3.63±1.29a	4.15±2.01a	5.56±2.80a
Waist circumference, cm	106±17.3b	107.7±15.4b	113.2±16.5a	120±17.2a	115.1±12.2a
Central obesity, nm	.817±.070a	.832±.064a	.859±.110a	.859±.075a	.856±.054a
Waist-to-height ratio (WHtR), cm	129±13.3c	129.2±13.5c	155.7±181.9 a	139.3±13.2b	134.5±12.9b

Data are mean ± SD, means with the same letter in the same row are not significantly different at P<0.05

Table 8. Statistical analysis of macronutrients of females according to age

Macronutrients	RDA	Age group				
		20-29year No=21	30-39year No=67	40-49year No=61	50-60year No=35	>60year No=16
Energy Calories	2000	2400.9±816.2a	2200.89±705.75c	2349.8±791.8b	1877.5±621.7e	2026.3±993.7d
% of RDA		120%	110%	117%	94%	101%
Protein g	50	84.6±27.5b	84.19±26.1b	98.9±95.4a	78.7±27.7d	82.8±26.5c
% of RDA		169%	168%	198%	157%	166%
Fat g	78	96.6±65.8a	77.8±40.6c	90.8±46.6b	63.9±31.3d	90.2±82.5b
% of RDA		124%	100%	116%	82%	116%
Cholesterol mg	300	242.0±209.07c	268.07±274.3b	322.9±429.7a	260.1±256.2b	325.5±285.9a
% of RDA		81%	89%	108%	87%	109%
Carbohydrate g	275	298.07±72.9a	288.5±80.3b	292.1±99.6b	246.2±84.7c	219.3±74.4d
% of RDA		108%	105%	106%	90%	80%
Fiber g	28	7.8±2.9a	7.3±2.8a	7.8±2.9a	7.3±3.5a	7.5±3.1a
% of RDA		28%	26%	28%	26%	27%
Pro. energy ratio	10-20	14.3±2.5a	15.5±3.1a	16.6±10.6a	17.09±5a	17.5±4.05a
Carb. energy ratio	50-60	52.06±11.1a	53.5±8.02a	50.5±10.1a	52.9±9.2a	46.1±12.03b
Fat energy ratio	25-30	33.6±11.5a	30.5±7.9a	33.7±9.1a	29.9±7.9a	36.1±12.9a

* Data are Mean ±SD, means with the same letter in the same row are not significantly different $p<0.05$

* RDA according to FDA (2020).

Table 9. Statistical analysis of micronutrients of females according to age

Macronutrients	RDA	Age group				
		20-29year No=21	**30-39year No=67**	**40-49year No=61**	**50-60year No=35**	**>60year No=16**
Vitamin A, µg	900	351.5±269.1c	342.6±268.8d	403.9±332.1a	372.7±307.1b	316.2±259.2e
% of RDA		39%	38%	45%	41%	35%
Vitamin C, mg	90	43.1±23.7b	41.8±24.6b	45.4±25.8b	56.7±32.7a	50.7±28.9a
% of RDA		48%	47%	50%	63%	56%
Thiamin, mg	1.2	1.06±.394a	0.991±.440b	1.043±.503a	0.943±.448b	1.06±.528a
% of RDA		88%	83%	87%	79%	88%
Riboflavin, mg	1.3	1.25±.72a	1.433±1.12a	1.41±1.22a	1.21±.736a	1.78±1.84a
% of RDA		96%	110%	108%	93%	137%
Calcium, mg	1300	781.1±276.3e	797.5±351.3d	847.4±440.7b	812.1±367.9c	924.9±543.1a
% of RDA		60%	61%	65%	62%	71%

Continue table 9

Phosphorus, mg	**1250**	**1099.6±375.1b**	**1093.0±423.3c**	**1082.5±454.8d**	**1048.0±404.2e**	**1156.6±431.9a**
% of RDA		88%	87%	86%	84%	92%
Iron, mg	18	17.5±4.9a	16.2±6.3a	17.4±9.06a	15.8±7.1a	16.3±6.3a
% of RDA		97%	90%	97%	87%	90%
Zinc, mg	11	5.8±1.9a	5.9±2.5a	5.8±2.4a	5.7±2.3a	6.5±2.8a
% of RDA		53%	54%	53%	52%	59%
Magnesium, mg	420	149.3±51.9a	140.8±52.5b	137.7±63.1b	143.1±52.7b	150.9±67.7a
% of RDA						
Sodium, mg	2300	3211.1±1501b	3201.9±1377.3c	3506.5±1663.8a	2471.8±1373d	2469.0667.5e
% of RDA		140%	139%	152%	107%	107%
Potassium, mg	4700	2520.6±685.2a	2293.5±808.1c	2466.1±909.2b	2219.9±746.8e	2290.5±667.5d
% of RDA		54%	49%	52%	47%	49%
Selenium, µg	55	14.4±6.5a	16.1±7.9a	14.8±6.5a	15.6±6.9a	15.2±8.8a
% of RDA		26%	29%	27%	28%	28%

* Data are mean ±SD; means with the same letter in the same row are not significantly different $p<0.05$.

* RDA according to FDA (2020).

الحالة الغذائية للإناث المصريات في سن النضج وانتشار الأمراض المزمنة الغير سارية

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الملخص العربي

كان الغرض من هذه الدراسة هو تقييم الحالة التغذوية وانتشار الأمراض المزمنة الغير سارية بين النساء في سن النضج. تم جمع البيانات من 200 امرأة تتراوح أعمارهن بين 20 وأكثر من 60 عامًا، بما في ذلك المعلومات الديموغرافية والقياسات الأنثروبومترية والتحاليل المعمليه واستبيان 24 ساعة.وأظهرت النتائج أن السمنة وزيادة الوزن: وفقًا لمؤشر كتلة الجسم (BMI)، كانت 39% من العينة مصنفة على أنها تعاني من السمنة و80% تعاني من السمنه المفرطه.وأن 63.5% من المشاركات يعانون من سمنة مركزية.وكان محيط الخصر: 41% كن في خطر مرتفع و71.5% كن في خطر عالي بناءً على قياسات محيط الخصر.نسبة الخصر إلى الطول (WHtR) 40% كن في خطر مرتفع جدًا و47% كن في خطر متزايد للا صابه بأمراض القلب والأوعية الدموية وضغط الدم .32% كان لديهن ارتفاع في ضغط الدم الانبساطي و31% كان لديهن ارتفاع في ضغط الدم الانقباضي.الاختبارات البيوكيميائية: وُجدت مستويات مرتفعة في 60.5% للكوليسترول الكلي، 63.5% للدهون الثلاثية و40% للجلوكوز العشوائي في الدم.تقييمات تناول العناصر الغذائية كشفت عن اختلافات كبيرة بين الفئات العمرية المختلفة فيما يتعلق بتناول المغذيات الصغري والمغذيات الكبيرة يوميًا بين النساء المقيمات في القاهرة الكبرى، مما يشير إلى أن العمر يؤثر بشكل كبير على الحالة التغذوية .تُبرز الدراسة ضرورة وجود برامج تعليم تغذوي مستمر ومراقبة لتحسين الصحة وجودة الحياة للنساء.

الكلمات المفتاحية: المقاييس الجسمية, السمنة المركزية، الامراض المزمنه غير المعدية.