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Nutritional Practices during the Coronavirus Pandemic (COVD-19)

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Abstract:
Alterations in diet and way of life the goal of the study was to ascertain how the COVID-19 pandemic affected dietary habits and food quality during the coronavirus pandemic. Materials and Techniques in Libya's Derna City, a 300-person cross-sectional internet poll was done. As a result, there were 95 men (31.7% of the total), 205 women (68.3%), and the mean and standard deviation were 1.83 and 0.379, respectively. the median and standard deviation of ages between 15 and 65 (2.00, 1.175), Education Level: The majority of university graduates—195, or 65%—were then followed by percentages of 30 (10.0%), 24 (8.0%), PHD 10 (3.3%), and primary school 4 (1.3%). The lowest proportions were for individuals in exceptional economic condition 28(9.3%), followed by not bad 15(5.0%), and other situations 4(1.3%). The lowest percentages were for PHD 10 (3.3%) and primary school 4(1.3%). Very good 142 patients received the highest percentage (47.35%), followed by good 111 patients (37%). The following table shows the percentage of people who have coronavirus (COVD-19) infection: The remaining 20 instances (6.7%), 170 cases (57.7%), and 110 cases (36.7%). Education level and knowledge of healthy foods are associated, and the connection is significant at the 0.05 level (P-Value, R, X2, 0.012, 0.145*, 641.313b). Likewise significant is the correlation at a 0.05 p-value level. P-Value, R, X2, Economic Level (0.000, 0.099, 258.500c). Education Level and the COVID-19 Coronavirus Relationship with infection: p-value > 0.05, R (0.010, 0.148*), and significant (p-value). Economic Level, P-Value, R, X2 (0.490, 0.040), and Correlation are not significant at the level (p-value) of 0.05. Conclusion: During the Corona pandemic, there was no association between education levels and the state of the economy; nevertheless, there was a connection between residents' eating habits and their level of education. Additionally, there is a connection between good nutrition and financial stability.

Keywords: Nutrition, Practices, Coronavirus, Pandemic, COVD-19.

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Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, has affected the entire world in unpredictable ways, [1]. The food security and nutrition of millions of people around the world are currently being threatened by the

COVID-19 pandemic, which is an evolving health and human crisis [2]. Global health is threatened, government agencies must create measures that ensure the food supply and consumer's awareness, in order to guarantee the country's food security during the current crisis, [3]. Although food and water are not considered direct transmission routes for SARS-CoV-2, [4]. The food chain in order to avoid or reduce the frequency of relevant food and health crises in the future, [5]. The protocols already established for food safety in food retail establishments were reinforced in several countries in this period of COVID-19 pandemics, [6]. Global "food syndemic," this commentary will highlight the interplay of food insecurity, malnutrition and obesity on dietary behaviors amid the COVID-19 pandemic, [1]. The COVID-19 pandemic caused a variety of lifestyle changes, physical inactivity and psychological problems among adults in the MENA region. [7]. the changes (restrictions on spatial mobility, low economic incomes, and low food production) that small agricultural producers are suffering are affecting food supply chains, [8]. food safety were reinforced, emphasizing the proper hygiene of hands after shopping, handling food packages, or before manipulating or eating food, the health of employees, and the proper preparation of food. It is hoped, in the post pandemic scenario. Moreover, it is expected that the food system will creatively adapt the way meals are served, [9]. The effect of the COVID-19 lockdown on dietary habits differed from community to community. The quarantine has positive and negative effects on eating habits such as returning to home meals and reducing fast food consumption while eating frequency was increased due to quarantine and stress, [10]. These findings may help public health initiatives to focus on raising awareness about the importance of health, well-being, and nutrition during times of crisis, [11]. The pandemic impacted consumer food interaction but did not boost panic buying and hoarding. Furthermore, the high purchasing power of the population mitigated the economic impacts of the pandemic and its adverse effects on food and nutrition security in the region, [12]. Some changes in the lifestyle, including changes in eating practices, physical activity, social communication, and sleeping habits during the pandemic. However, as the COVID-19 pandemic is ongoing, a comprehensive understanding of these behaviours and habits can help develop interventions to mitigate negative lifestyle behaviours during the COVID-19 pandemic, [13]. The potential dietary, nutritional, medical, lifestyle, and environmental hazards, along with any supplementation with micronutrients wherever required to help to boost the body's natural defense system, with the intention to improve all levels of immunity and the use of effective risk management techniques are appropriate ways to handle the COVID-19 pandemic, [14]. Regarding food safety in covid-19 is a valid and reliable tool for measurement of knowledge, attitude and practice of people regarding food safety in covid-19, [15]. Change in dietary habits, and eventually result in worsening eating disorder symptoms, [16]. There was no convincing evidence that food or food packaging is associated with the transmission of COVID-19, [17]. The COVID-19 pandemic to the food consumption patterns, the changes in the meal patterns are obvious. This may have consequences (positive and negative) related to the human and environment health as well as to the global economy, [18]. The perception of weight gain was observed in the population, whereas a slight increased physical activity has been reported in respondents, especially for bodyweight during covd-19, [19]. The pandemic caused many changes in people's dietary habits and lifestyles, apparently, education and proper enlightenment play a major role in food choices, [2]. workshops and nutrition education programmes to teach the foundations of nutrition, meal planning and how to adapt and maintain healthy eating and living practices, [20] .

Material and Methods

Study design and participants

This cross-sectional, online survey was conducted in the Derna City\ Libya region between 15 April 2022 and 30 October 2022.

Survey questionnaire

A multicomponent, self-administrated online questionnaire was designed using Google Forms in English, Arabic and English.

Statistical analysis

All variables presented in this study are of categorical nature since they represent population characteristics. Categorical variables are presented as frequencies and percentages (%; relative frequency × 100). The p-value and correlation were used to examine group differences for single observations in categorical variables and were used to investigate the difference between categorical variables during the COVID-19 pandemic. Results were significant for P value < 0.05. Reliability

Statistics = 0.623 and, statistical analysis was performed using Statistical Package for the Social Sciences version 26.0 (IBM).

Results and discussion

The questionnaire was completed by 300 participants, Most of them completed the survey in the Arabic language followed by English. The demographic characteristics of the study population are presented in Table 1. The frequency and percent of males were 95(31.7%), and the female was 205(68.3%), the Mean & S.D (1.83, 0.379). Ages between 15 - 65 years old, the Mean & S.D (2.00, 1.175).

Table (1) Frequency and Percent % of Demographic Characteristics

Demographic Characteristics		Number of participants (%)		
		N (%)	**Mean**	S.D
Gender	**Male** **Female**	95(31.7) 205(68.3)	1.83	**0.379**
Age (Year)	**15-25** **26-35** **36-45** **46-55** **56-65**	146(48.7) 61(20.3) 50(16.7) 34(11.3) 9(3.0)	2.00	**1.175**
Education Levels	**University** **Middle Diploma** **High diploma** **PHD** **Master** **Primary School** **Secondary School**	195(65.0) 14(4.7) 24(8.0) 10(3.3) 30(10.0) 4(1.3) 23(7.7)	3.26	**1.091**
Economic levels	**Very Good** **Good** **Excellent** **Not Bad** **Other**	142(47.3) 111(37.0) 28(9.3) 15(5.0) 4(1.3)	1.76	**0.912**
Total		300(100)		

The largest proportion of university graduates was 195 (65%), followed by a percentage of 30 (10.0%), followed by high institutions by 24 (8.0%), and the lowest percentage was for PHD 10 (3.3%) and primary school 4 (1.3%), as shown in Figure 1: Percentage of Education Level.

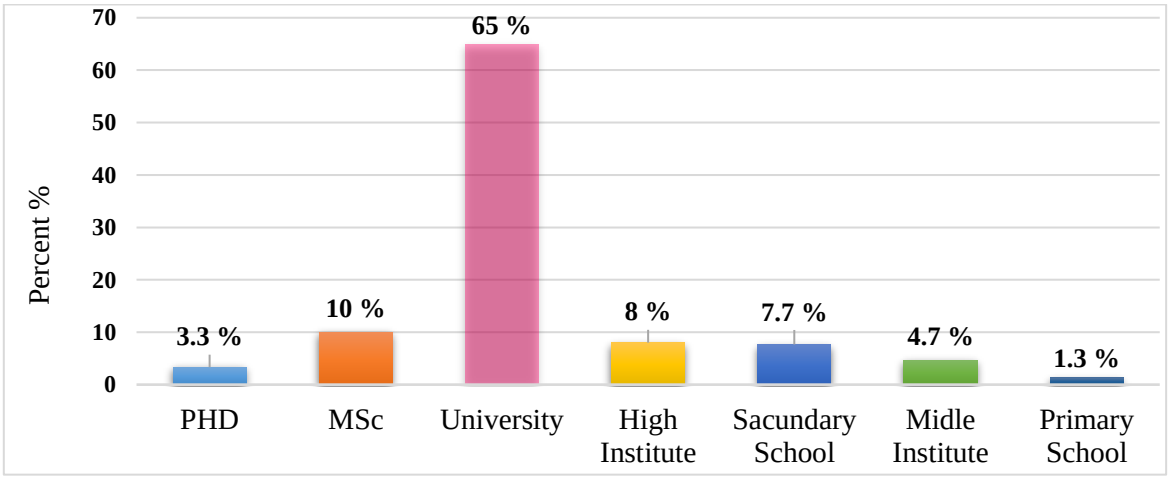

Figure (1) Percent % of Education Level

According to Figure 2, the biggest number of people had very good economic conditions (142, 47.35%), followed by good (111, 37%). The lowest percentage was for those in excellent economic condition (28, 9.3%), followed by not terrible (15, 5.0%) and other circumstances (4, 1.3%).

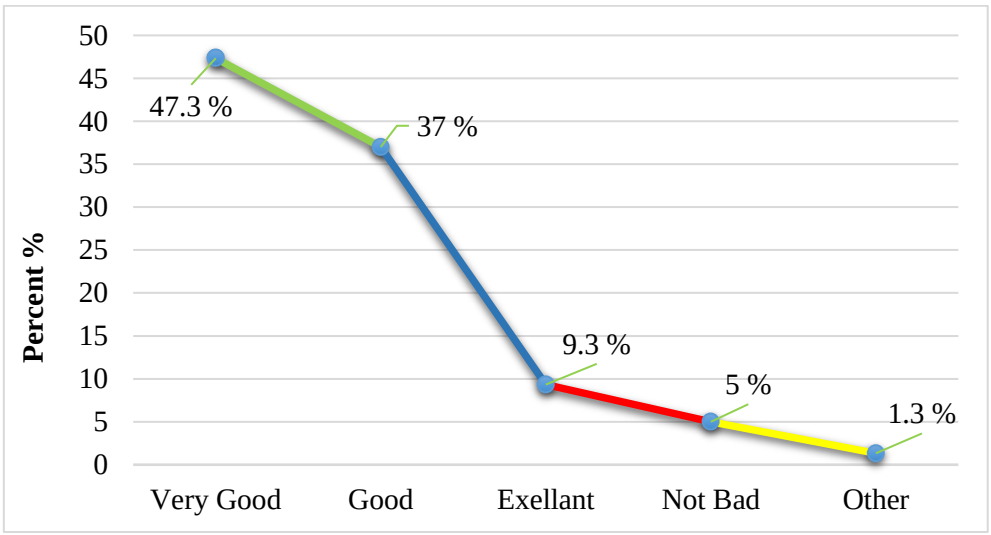

Figure (2) Percent % of Economic Level

The percentages of those with coronavirus (COVD-19), those with corona infection (110, 36.7%), those who are not infected (167, 57.7%), and the remainder (20, 6.7%) are shown in Figure 3.

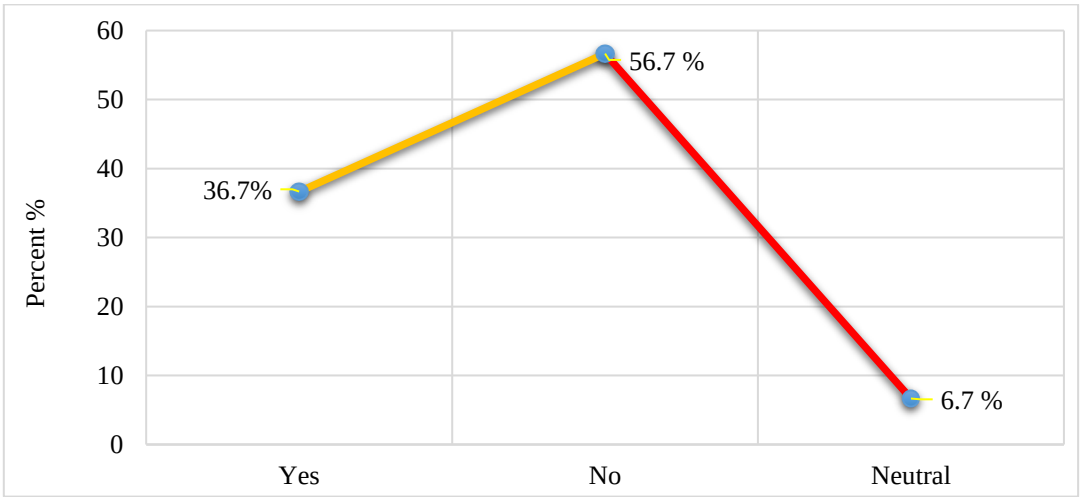

Figure (3) Percent % of who have corona virus (COVD-19)

Table 2 demonstrates that the P-value, R (0.012, 0.145*), for the link between awareness of healthy foods and education level, is significant at the p-value 0.05 level. Economic Level, P-Value, R (0.086, 0.099), Correlation is not significant at the 0.05 level, X2 education level and economic level (641.313, 258.500), and the association between who has the COVID-19 coronavirus and Education Level, P-Value, R (0.010, 0.148*). Correlation is significant > the 0.05 level (p-value). Economic Level, Level, P-Value, R (0.490, 0.040), Correlation is not significant above the 0.05 level (p-value), and economic level and education level are independent variables (641.313, 258.500).

Table 2: the correlations between knowledge of healthy foods, coronavirus (COVID-19) infection, and education level and economic status.

Correlations		Education Level	Economic Level
Knowledge by Healthy Food	**R**	0.145*	0.099
	X^2	641.313	258.500
	P-Value	0.000	0.000
	N	300	300
Who have Coronavirus (COVID-19)	**R**	0.148*	0.040
	X^2	641.313	258.500
	P-Value	**0.010**	**0.490**
	N	300	300
*. Correlation is significant at the 0.05 level (P-Value).			

Table 3 provided examples of the frequency and percentage of responses to questionnaires regarding citizen behavior.

Table (3) the frequency and the percent of questionnaire

	Question	Answer		
		No (n %)	**Yes (n %)**	**Normal (n %)**
1	Do you have knowledge of healthy food?	37(12.3%)	210(70.0%)	53(17.0%)
2	Did you follow a healthy diet during the Corona Pandemic (COVID-19)?	158(52.7%)	101(33.7%)	41(13.7%)
3	Have you taken nutritional supplements (vitamins) during the Corona pandemic (COVID-19)?	121(40.3%)	169(56.3%)	10(3.3%)
4	Do your meals contain carbonated water during the Corona pandemic (COVD-19)?	151(50.3%)	119(39.7%)	30(10.0%)
5	Do your meals contain natural juices during the Corona pandemic (COVD-19)?	57(19.0%)	202(67.3%)	41(13.7%)
6	Do your diets contain vegetables during the COVID-19 pandemic?	15(6.7%)	265(88.3%)	20(6.7%)
7	Do you have fruits in your diet during the Corona pandemic (COVID-19)?	22(7.3%)	246(82.0%)	32(10.7%)
8	Did I follow a healthy diet while I was infected with Corona (COVID-19)?	167(55.7%)	75(25.0%)	58(19.3%)
9	Did you follow a healthy diet before and after you were infected with Corona (COVD-19)?	167(55.7%)	62(20.7%)	71(23.7%)
10	Did you use a nutritionist to help you with your diet before, after and during the Corona pandemic (COVD-19)?	253(84.3%)	28(9.3%)	19(6.3%)

Table 4: the qui Squair X^2, Mean, and standard deviation (SD) of questionnaire equations answers of citizen behavior

	Question	X^2	Mean	S.D
1	Do you have knowledge of healthy food?	182.780a	1.48	0.778
2	Did you follow a healthy diet during the Corona Pandemic (COVID-19)?	68.460a	1.80	0.659
3	Have you taken nutritional supplements (vitamins) during the Corona pandemic (COVID-19)?	133.020a	1.47	0.563
4	Do your meals contain carbonated water during the Corona pandemic (COVD-19)?	78.620a	1.70	0.640
5	Do your meals contain natural juices during the Corona pandemic (COVD-19)?	157.340a	1.46	0.724
6	Do your diets contain vegetables during the COVID-19 pandemic?	408.500a	1.18	0.533
7	Do you have fruits in your diet during the Corona pandemic (COVID-19)?	320.240a	1.29	0.647
8	Did I follow a healthy diet while I was infected with Corona (COVID-19)?	68.780a	1.94	0.665
9	Did you follow a healthy diet before and after you were infected with Corona (COVD-19)?	67.740a	2.03	0.666
10	Did you use a nutritionist to help you with your diet before, after and during the Corona pandemic (COVD-19)?	351.540a	1.97	0.395

Discussion

The questionnaire was completed by 300 participants, Most of them completed the survey in the Arabic language followed by English. The demographic characteristics of the study population are presented in Table 1. The frequency and percent of males were 95(31.7%), and the female was 205(68.3%), the Mean & S.D (1.83, 0.379). Ages between 15 - 65 years old, the Mean & S.D (2.00, 1.175). In Figure (2) Percent % of Education Level, It was the highest percentage of university graduates by 195(65%), then followed by a percentage 30(10.0%) and then followed by high institution by 24(8.0%), and the lowest percentage was for PHD10 (3.3%), primary School 4(1.3%). Figure 3 shows the economic level, the highest percentage was for those whose condition was very good 142(47.35%), followed by good 111(37%), and the lowest percentage was the excellent economic condition 28(9.3%) and the lowest percentage was for not bad 15(5.0%), for other circumstances 4(1.3%). Figure 4 shows the Percent % of who have corona virus (COVD-19), which have corona infection 110(36.7%), not infected 170(57.7%), and the rest of cases 20(6.7%).Table 2 shows that the relationship between Knowledge by Healthy Food and Education Level, P-Value, R (0.012, 0.145*), Correlation is significant at the p-value < 0.05 level. Economic Level, P-Value, R (0.086, 0.099), Correlation is not significant p-value > the 0.05 level. Table 3 shows that the relationship between who have coronavirus (COVID-19) and Education Level, P-Value, R (0.010, 0.148*), Correlation is significant > 0.05 level (p-value). Economic Level, Level, P-Value, R (0.490, 0.040), Correlation is not significant > the 0.05 level (p-value). Table 4, illustrated the frequency and the percent of answers questionnaire equations of citizen behavior , Table 5 shows the qui Squair X2, Mean, and standard deviation S,D of answers questionnaire equations of citizen behaviour.

This result agree with previous study as Assessment of eating habits and lifestyle during the coronavirus 2019 pandemic in the Middle East and North Africa region by [7], and the Effect of the coronavirus pandemic on nutrition and health of adults in Calabar, Nigeria by [24], the Food Systems in the Era of the Coronavirus (COVID-19) Pandemic Crisis by [5], The eating habits dgainges during COVD-19 pandemic lockdown by [10], Preliminary Trajectories in Dietary Behaviors during the COVID-19 Pandemic: A Public Health Call to Action to Face Obesity, by [25], Food Choice Motives Changes Caused by the Coronavirus Pandemic by [26], Impacts of the COVID-19 pandemic on food security and food consumption: Preliminary insights from the gulf cooperation council region by [12], [13], [14], [16], [17], [18], [7], [10], [1], [27], [25], [26], [3], [9], [19], [27], [15], [17], [18], [8], and [14].

Conclusion

There was a relationship between the level of education and citizens' practices regarding food quality with a virus, but there was no relationship between education levels and the economic situation during the Corona pandemic. There is also a relationship between economic status and healthy food intake.

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