Changes in food consumption and body weight during social confinement by COVID-19.

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Introduction: SARS-CoV-2.

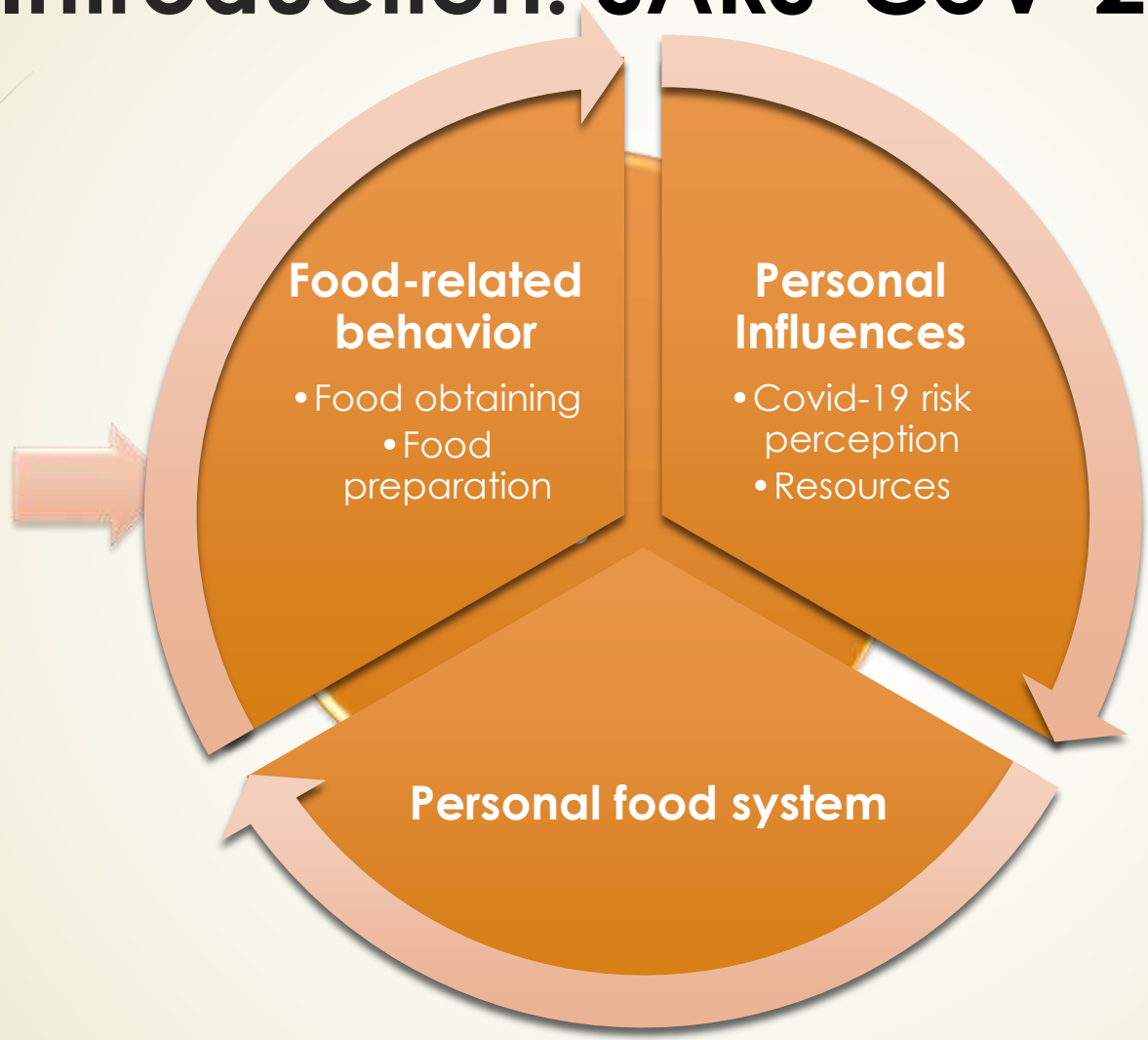
- **At the end of 2019**: Unknow etiology cases of pneumonia in Wuhan, China
- **January 21th 2020**: First situation report of the Sars-COV-2 virus
- **January 30th 2020**: WHO director declares the Covid-19 outbreak as a public health emergency worldwide
- **February 28th 2020**: First confirmed case of Covid-19 in Mexico
- **March 13th 2020**: Confinement strategy is placed at state level level in Jalisco
- **March 23th 2020**: Confinement strategy is placed at federal level in Mexico
- **June 1th 2020**: Confinement strategy ends at federal level
- **Till the date**: Many people remained confined waiting to receive the vaccine against the Sars-COV-2 virus

Hu, B., Guo, H., Zhou, P., & Shi, Z. L. (2021). Characteristics of SARS-CoV-2 and COVID-19. Nature Reviews Microbiology, 19(3), 141-154.
Gobierno de México, 2020, Dirección General de Epidemiología/ Dirección de Información Epidemiológica/ Equipo de trabajo, con corte al día 22/02/2021

Introduction: SARS-CoV-2 and food.

Macrocontex
- Government
- Society
- Economy.

Microcontex
- Family
- Friends
- Social circle



Changes in food consumption and body weight

Janssen, M., Chang, B. P., Hristov, H., Pravst, I., Profeta, A., & Millard, J. (2021). Changes in food consumption during the COVID-19 pandemic: analysis of consumer survey data from the first lockdown period in Denmark, Germany, and Slovenia. Frontiers in nutrition, 8, 60.

Jimenez, A., de Hollanda, A., Palou, E., Ortega, E., Andreu, A., Molero, J., ... & Moize, V. (2021). Psychosocial, lifestyle, and body weight impact of COVID-19-Related lockdown in a sample of participants with current or past history of obesity in spain. Obesity surgery, 31(5), 2115-2124.

General Objective

- The objective of this study was to evaluate the association in the changes of body weight with the alimentation from adults in the region of Los Altos, Jalisco derived by the COVID-19 social confinement

Specific Objectives

- Survey the diet of adults from the región of Los Altos, Jalisco during the confinement derived form the COVID-19 pandemic
- Determine whether the body weight of adults from the region of Los Altos, Jalisco changed after the confinement derived from the COVID-19 pandemic

Methodology

Study design	• Descriptive correlational
Universe of study	• Adults from Los Altos, Jalisco Mexico, 25-50 years old, this work shows partial results (n = 30)
Ethics	• This work follows local ethical guidelines • The participants signed a letter of consent under the information, which explained their rights and duties as participants.
Statistic analysis	• Differences between independent groups was tested using Mann-Whitney U test, Wilcoxon test and correlations were tested with Spearman's Rho, significant value P = <0.05
Practical procedure	• Modified questionnaire from M. Pellegrini et al 2020, (Google form surveys) • 24 hour food reminders

*Pellegrini, M., Ponzo, V., Rosato, R., Scumaci, E., Goitre, I., Benso, A., ... & Bo, S. (2020). Changes in weight and nutritional habits in adults with obesity during the "lockdown" period caused by the COVID-19 virus emergency. Nutrients, 12(7), 2016. of the researchers who validated the survey

Results

Table 1. Characteristics of the sample.

	Male			Female			P Value
Age (years)	27.69	±	2.09	33.06	±	7.50	**.041***
Actual weight (Kg)	75.29	±	13.42	68.30	±	11.82	.141
Usual weitght (Kg)	76.86	±	15.68	68.55	±	12.55	.117
Height (m)	1.71	±	0.06	1.61	±	0.06	**.000****
Waist (cm)	85.31	±	9.74	80.65	±	10.72	.230
Confinament (days)	57.00	±	37.95	42.08	±	36.21	.418

Data are shown as mean and standard deviation, they were tested using Mann-Whitney U test, * P <0.05, ** P <0.01.

Pérez León, S., & Díaz-Perera Fernández, G. (2011). Circunferencia de la cintura en adultos, indicador de riesgo de aterosclerosis. *Revista Habanera de Ciencias Médicas*, *10*(4), 441-447.
Instituto Nacional de Estadística y Geografía (INEGI) Censo de Población y Vivienda 2020

Results

Table 2: Usual daily intake of food and nutrients by sex.

Food/Nutrients	Male n=13			Female n=17			P value
Sugars (g/d)	70.9	±	51.6	27.4	±	27.5	**.013***
Sugary drinks (mL/d)	204.2	±	335.6	73.5	±	171.5	.217
Refined cereals (g/d)	101.2	±	106.4	87.1	±	108.6	.724
Read meat (g/wk)	116.3	±	70.0	77.4	±	53.7	.095
Cured meats (g/d)	45.5	±	85.3	23.9	±	25.4	.392
Saturated fatty acids(g/d)	3.6	±	5.5	3.5	±	3.2	.886
Alcohol (g/d)	1.2	±	4.0	2.7	±	6.1	.447
Whole grains (g/d)	61.2	±	125.8	37.6	±	50.4	.486
Fruit and vegatables (g/d)	418.3	±	325.4	296.1	±	188.2	.206
Fiber (g/d)	22.7	±	13.2	15.4	±	7.4	.067
Vitamin C (mg/d)	109.2	±	97.7	47.0	±	62.5	.060
Vitamin A (mg/d)	705.5	±	519.3	417.1	±	291.2	.063
Fish (g/wk)	38.8	±	98.6	6.7	±	17.0	.267

Data are shown as mean and standard deviation, they were tested using Mann-Whitney U test, * P <0.05.

Results

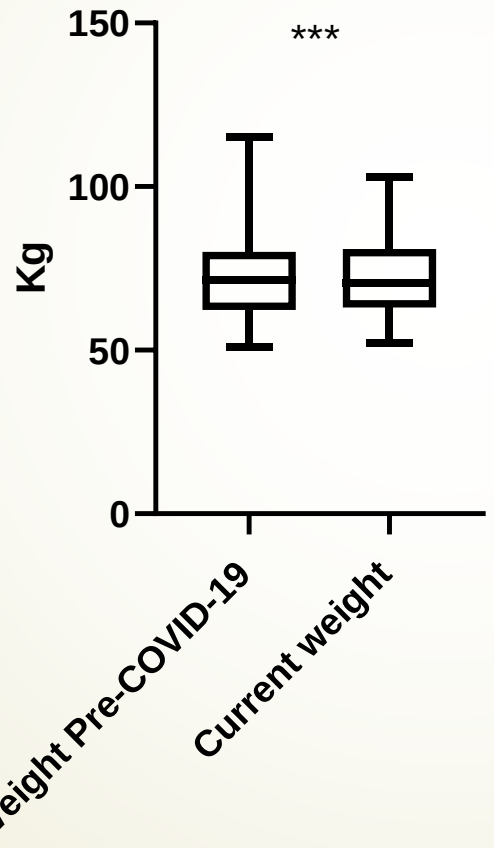
Table 3: Weekend food and nutrient intake by sex.

Food/nutrients	Male n=13			Female n=17			P Value
Sugars (g/d)	35.5	±	35.4	41.0	±	33.3	.669
Sugary drinks (mL/d)	220.4	±	296.0	180.7	±	221.1	.690
Refined cereals (g/d)	147.3	±	172.3	71.9	±	88.8	.130
Read meat (g/wk)	116.3	±	70.0	77.4	±	53.7	.095
Cured meats (g/d)	53.4	±	58.6	40.1	±	62.5	.557
Saturated fatty acids(g/d)	6.5	±	6.6	2.8	±	2.2	.075
Alcohol (g/d)	48.1	±	58.1	13.3	±	24.0	.061
Whole grains (g/d)	60.1	±	119.7	31.9	±	60.5	.449
Fruit and vegatables (g/d)	205.6	±	110.5	231.5	±	159.1	.604
Fiber (g/d)	20.1	±	11.7	13.4	±	6.3	.054
Vitamin C (mg/d)	30.8	±	21.4	51.4	±	62.0	.262
Vitamin A (mg/d)	545.5	±	384.9	388.7	±	281.0	.229
Fish (g/wk)	38.8	±	98.6	6.7	±	17.0	.196

Data are shown as mean and standard deviation, they were tested using Mann-Whitney U test, * P <0.05

Results

Graph 1.Self-reported weight comparison, Pre and During confinement.



Data are shown as Median, minimum and maximum values, they were tested using Wilcoxon test, *** P <0.000

Results

Data shown are R from Spearman's test, * P <0.05, ** P <0.01.

Table 4. Food consumption during the COVID-19 confinement and body weight correlation		
Food consumption and current body weight correlation		
	Rs	**P values**
Whole Grains	0.05796	**0.007****
Fruit and vegetables	0.39822.	**0.02***
Fiber	0.33011.	0.07
Fish	0.03033.	0.87
Sugar	-0.03673.	0.87
Sugary beverages	0.03372.	0.85
Refined Cereals	0.037	0.84
Red Meat	0.47519.	**0.0079****
Cured meats	-0.00798.	0.96
Fats with no protein	0.09935	0.6
Alcohol	0.16986	0.3
Food consumption and body weight before the COVID-19 correlation		
Whole Grains	-0.00392	0.98
Fruit and vegetables	0.31486	0.09
Fiber	0.30673	0.099
Fish	-0.02476	0.89
Sugar	-0.05696	0.76
Sugary beverages	-0.1395	0.94
Refined Cereals	0.14548	0.44
Red Meat	0.55283	**0.005****
Cured meats	-0.09318	0.62
Fats with no protein	0.11246	0.55
Alcohol	0.07776	0.68
Food consumption and body weight delta correlation		
Whole Grains	0.12438	0.51
Fruit and vegetables	0.12589	0.49
Fiber	-0.02341	0.9
Fish	0.28441	0.12
Sugar	0.1092	0.95
Sugary beverages	0.06111	0.74
Refined Cereals	-0.37956	**0.03***
Red Meat	-0.33735	0.06
Cured meats	0.30295	0.1
Fats with no protein	0.11386	0.54
Alcohol	0.43031	**0.01***
Confinament (days)	0.1613	0.2311

Romo-Romo, A., Reyes, C., Janka-Zires, M., & Almeda-Valdés, P. (2020). El rol de la nutrición en la enfermedad por coronavirus 2019 (COVID-19). The role of nutrition in the coronavirus disease 2019 (COVID-19). *Revista Mexicana de Endocrinología Metabolismo y Nutrición*, *7*, 132–143. https://doi.org/10.24875/RME.20000060
Instituto Nacional de Salud Publica (INSP) 2020

Conclusion

- The confinement had serious repercussions on the lifestyle of people, diet and weight are some of those affected.
- Alcohol consumption has a significant positive correlation for weight gain during confinement.
- The effects that confinement by COVID-19 may have depend on an intricate network of variables, within the context of the individual, that is why we believe that it should continue to be studied, in this way to understand the repercussions that it will have in the long term.