



Effects of the exposure of peruvian older adults to the infodemic on COVID-19: a cross-sectional study

Efectos de la exposición de adultos mayores peruanos a la infodemia sobre COVID-19: um estudio transversal

Efeitos da exposição de idosos à infodemia sobre COVID-19: um estudo transversal

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ABSTRACT

Objective: To examine the association between exposure to information about Covid-19 and the presence of physiological and emotional symptoms and substance use in older adults. **Methods:** Quantitative and cross-sectional research with 387 older adults who responded to the web-based survey. Were used the instruments of demographic profile, the questionnaire of exposure to news and information related to the pandemic and, the Questionnaire for the Identification of Frequency of Physical and Emotional signs and symptoms and substance use. All statistical tests had a significance of $p < 0.05$. **Results:** There was a predominance of female participants with an average age of 70.1 years, living with a partner, with access to free health services and had a decrease in their economic income during the pandemic. There is a significant relationship between the time of exposure to the Internet and the media with the psychophysiological manifestations; the radio was related to digestive and nutritional problems and, talking to people around caused muscle pain. **Conclusions and implications for practice:** exaggerated information about Covid-19 led to harmful physiological and emotional symptoms and behaviors; it is suggested to implement post-pandemic social interventions for health problems; use virtual tools and telemedicine in care; improve intergenerational support programs.

Keywords: Older Adults; Coronavirus; Pandemics; Social network; Infodemic.

RESUMEN

Objetivo: Examinar la asociación entre la exposición a la información sobre COVID-19 y la presencia de síntomas fisiológicos, emocionales y el uso de sustancias en adultos mayores. **Métodos:** Investigación cuantitativa y transversal con 387 adultos mayores que respondieron al *web-based survey*. Se utilizaron los instrumentos de perfil demográfico, cuestionario de exposición a noticias e información relacionada con la pandemia y el Cuestionario de Identificación de Frecuencia de Signos y Síntomas físicos, emocionales y uso de sustancias. Todas las pruebas estadísticas tuvieron una significancia de $p < 0.05$. **Resultados:** Predominaron participantes del sexo femenino con media de edad de 70.1 años, viven con pareja, con acceso a los servicios de salud gratuitos y quienes disminuyeron sus ingresos económicos durante la pandemia. Existe relación significativa entre el tiempo de exposición a internet y medios de comunicación con las manifestaciones psicofisiológicas; la radio se relacionó con problemas digestivos y nutricionales, y el contacto con personas del entorno provocó dolores musculares. **Conclusiones e implicaciones para la práctica:** Información exagerada sobre COVID-19 provocó síntomas fisiológicos, emocionales y comportamientos nocivos; se sugiere implementar intervenciones sociales post-pandemia para los problemas de salud; utilizar herramientas virtuales y telemedicina en el cuidado; mejorar los programas de acompañamiento intergeneracional.

Palabras clave: Adulto mayor; Coranovirus; Pandemias; Red social; Infodemia.

RESUMO

Objetivo: Examinar a associação entre exposição a informações sobre COVID-19 e a presença de sintomas fisiológicos e emocionais e uso de substâncias em idosos. **Métodos:** Pesquisa quantitativa e transversal com 387 idosos que responderam ao *web-based survey*. Foram utilizados os instrumentos de perfil demográfico, o questionário sobre exposição a notícias e informações relacionadas à pandemia e o Questionário para Identificação da Frequência de Sinais e Sintomas físicos e emocionais e uso de substâncias. Todos os testes estatísticos tiveram significância de $p < 0,05$. **Resultados:** Predominaram participantes do sexo feminino com média de idade de 70,1 anos, vivendo com companheiro, com acesso a serviços de saúde gratuitos e que diminuíram sua renda econômica durante a pandemia. Existe uma relação significativa entre o tempo de exposição à internet e outros meios de comunicação com manifestações psicofisiológicas; o rádio estava relacionado a problemas digestivos e nutricionais; e o contato com pessoas ao redor causava dores musculares. **Conclusões e implicações para a prática:** Informações exageradas sobre a COVID-19 levaram a sintomas e comportamentos fisiológicos e emocionais nocivos; sugere-se a implementação de intervenções sociais pós-pandemia para problemas de saúde; utilizar ferramentas virtuais e telemedicina no atendimento; melhorar os programas de apoio intergeracional.

Palavras-chave: Idoso; Coronavírus; Pandemias; Rede social; Infodemia.

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INTRODUCTION

The disease produced by SARS-CoV-2, since its health declaration as a pandemic, has wreaked havoc on the lives of the population, causing millions of confirmed cases and deaths in all countries. In addition, a significant proportion of the world's inhabitants suffer from physical, psychological and substance use symptoms that continue to negatively affect their health.¹

As the epidemic outbreaks appeared, states of health emergency were declared in the different countries of the world due to the presence of COVID-19.² In Peru, since the beginning of the pandemic, measures to confine the inhabitants in their homes have been in order to avoid the acceleration of contagion and take care of vulnerable populations such as older adults;³ added to this, information on the disease process and prevention and care measures were diffuse.

Since the beginning of the pandemic, older adults began to listen that because they were many years old they were the most vulnerable group⁴, a natural reaction of the human being is to seek, listen to or read information regarding the Wuhan Coronavirus infection, but found that the media propagated and provided news, photos, videos, messages without knowing if they were true or alarmist. Reports were made on the number of deaths, the increase in the number of patients and health protection measures, the insufficient health resources and food shortages⁵; all this information explosion gave rise to an infodemic situation, which in current health emergency situations and with modern information technologies were quickly disseminated.^{5,6}

Older adults in social isolation due to the pandemic found a way to stay informed through the different means of communication. In the United States, it was reported that, during the first week of the pandemic, the audience increased by 19% in the four big television networks, 73% got information from the news on digital cable television and the number of weekly visits to websites increase to 68% in relation to the same week of the year 2019.⁷

According to the informational behavior theory⁸, in the face of a serious socio-health event, such as the Wuhan Coronavirus epidemic, people perceive the need for information to make sense of and understand what is happening. In this regard, a study reported that the greater the degree of health threat, there will be more submission to information from the media and the exchange of opinions with other people in their environment or social network.⁹ The demand for information can be obtained through formal and informal sources in order to reduce insecurity in the face of a crisis in order to calm uncertainty and stress.

A study in China showed that 73% of the participants had anxiety and more than 30% suffered from panic and fear at the news of the pandemic.⁷ A similar result was presented in a study from the United States in which 90% of the participants expressed that their lives changed drastically with the COVID-19 outbreak.¹⁰

Stress is defined as a coping or fight reaction towards a threat to survival or personal self-esteem. This response produces a neuro-hormonal storm with psychobiological reactions. When the pandemic occurred, the older adults faced a series of stressors that activated the different systems and organs of the body, making it evident through psychosomatic symptoms.¹¹

In this regard, a study in Nepal reported that an average of 12 to 34% of older adults felt fear when overwhelmed with information about COVID-19¹² and that exposure to the media was related to the presence of adverse psychological symptoms in different contexts, when facing natural disasters, epidemics, or wars.^{13,14} At the same time, it is identified that social networks can increase the spread of harmful behaviors during an epidemic and these effects can extend to the network of friends.¹⁵

However, studies with the older adults population regarding the raised problem are limited and scarce, research is necessary to help explain the wide range of psychosocial and behavioral problems during the mandatory confinement of this group of the older population; once secluded, the person faces a decrease in physical activity, social isolation, decreased social well-being and repeated speeches that the person belongs to a fragile and endangered group; this situation has required physical and psychological effort to adapt to confinement and accept their status as a fragile and risky person.

Given this context, the objective was to examine the association between exposure to information about COVID-19 with the presence of physiological and emotional symptoms and substance use in older adults.

METHOD

Descriptive and analytical study¹⁶ carried out in the city of Chiclayo, in the department of Lambayeque, located in northern Peru, during the months of April – May of 2021.

The population in the city of Chiclayo is made up of 150.270 older adults; according to data from the 2017-Peru census¹⁷, the sample was estimated using the formula for finite populations. A total of 387 participants were interviewed. The sampling was non-probabilistic for convenience. The inclusion criteria were: older adults of both sexes, who had access to the Internet and were able to answer the interview, and older adults who did not answer all the questions in the questionnaire were excluded.

The collection was carried out by means of a web-based survey. The link was sent to public and private institutions that work on issues related to aging in order to have access to telephone data; after that, the researchers contacted the older adults who had access to email and/or social networks and a telephone with an Internet connection.

When accessing the link, the older adults were directed to the digital Informed Consent, for the respective acceptance. Participation or not in the study was automatically recorded in the database generated by the survey, and will be stored for a period of 5 years. Those who agreed to participate had access to the study questions.

The following questionnaires were used to collect the data:

- Demographic profile: information was collected on: gender, age, marital status, level of education, number of children, type of housing, residence, use of health services, and economic income.
- Exposure to news and information related to the pandemic questionnaire, containing four open questions that inquire about how many hours a day they are exposed to information about COVID-19 on the internet, television, radio, written press, and people around them. This questionnaire was adapted from the study carried out by Gao Juling and collaborators in 2020 in China.¹⁸
- Questionnaire to identify the frequency of physical and emotional signs and symptoms, and substance use: contact with information about the pandemic and how they felt in the last 15 days. Composed of 34 questions (14 physical symptoms, 17 psychological symptoms, and three related to substance use) with Likert-type responses with response options: never, a few, some, and many times.

The data were processed in the Excel® 2016 spreadsheet and the statistical analysis was performed with the Statistical Package for the Social Sciences, SPSS v. 25. Descriptive statistics were used for sociodemographic characteristics, with frequencies and proportions being used for categorical variables and dispersion measures such as mean and standard deviation for numerical ones.

In addition, in order to identify the bivariate associations, the t-test was used, having as a dependent variable the hours of exposure to information about the pandemic by television, radio, internet and newspapers and as independent variables the presence of physical, psychological and substance use symptoms.

To establish the associations between the study variables, the multiple linear regression analysis was carried out, having as a dependent variable the time of exposure to the news about the pandemic with the use of television, radio, internet and newspapers with the demographic variables and the presence of physical, psychological and substance use symptoms. All statistical analyses considered $p < 0.05$.

This study was submitted to the Ethics Committee of the Universidad Peruana Unión, with approval number 2021-CE-EPG-000003, in accordance with the Declaration of Helsinki of the World Medical Association on ethical principles for medical research in humans. The participation of the study units was voluntary, through the acceptance of the digital informed consent, prior information from the research team.

RESULTS

The sample consisted of 387 people; the main sociodemographic characteristics are reported in Table 1. It was found that 68.7% were women. The age of the participants ranged from 60 to

98 years with a mean of 70.1; the average number of children per person was 3.7. Regarding marital status, 56.8% had a partner, 36.1% reached a higher education level, 86.3% had their own home, 87.1% live in urban areas, 46.8% have access to state health services and 51.2% perceived that their income decreased during the pandemic.

Table 1. Sociodemographic characteristics of older adults in the city of Chiclayo, Peru, 2021.

Variables	Categories	n	%
Gender	Male	121	31.3
	Female	266	68.7
Age	60 – 70	234	60.5
	71 – 80	105	27.1
	> 80	48	12.4
Number of Children	0	29	7.5
	1 – 5	282	72.9
	6 – 9	65	16.8
	10 – 12	11	2.8
Marital status	Single	42	10.8
	Married/cohabiting	220	56.8
	Divorced/separated	29	7.5
Level of Education	Widower	96	24.8
	No studies	27	7.0
	Primary	103	26.6
	Secondary	117	30.2
	Superior	129	33.3
Race	Postgraduate	11	2.8
	White	70	18.1
	Black	18	4.7
	Mixed race	292	75.5
	Brown	4	1.0
Housing	Other	3	0.8
	Own house	334	86.3
	Rent house	12	3.1
	Family home	39	10.1
Residence	Others	2	0.5
	Rural area	50	12.9
	Urban area	337	87.1
Use of health services	Free health services	181	46.8
	Paid health services	82	21.2
	I use both	116	30.0
	None	8	2.1
Affected income	No	165	42.6
	Income has increased	24	6.2
	Income has decreased	198	51.2

In Table 2, the exposure times were compared according to the types of substances consumed. Significant differences were found in the average exposure times to social networks between consumers and non-consumers of alcohol, tobacco, illegal substances, and psychotropic drugs (p values between <0.05 and <0.000, chi square). Older adults were informed about the pandemic on social networks and were exposed to information on the web between

2.4 and -5.1 hours and watched news on television between 1.90 and 2.94 hours.

Regarding the presence of physical symptoms presented by exposure to the different media (Table 3), the existence of common symptoms was identified: such as dry mouth, cold sweats, chills, and chest tightness. Additionally, exposure to television caused difficulty breathing, tremor, headache, and palpitations.

Table 2. Physiological symptoms associated with the exposure of the older people to information about the pandemic, Chiclayo, Peru, 2021.

Physical symptoms	Internet M (=DS)	p	Television M (=DS)	p	Radio M (=DS)	p	Newspaper M (=DS)	P
Cold sweats or chills								
No	1.19 (1.8)	0.15	1.77 (1.5)	0.00**	0.68 (1.1)	0.00**	1.35 (2.5)	0.00**
Yes	1.75 (3.9)		2.78 (3.3)		2.17 (4.8)		2.69 (3.9)	
Decreased sexual desire								
No	1.41 (2.8)	0.34	2.01 (2.2)	0.07	1.13 (3.2)	0.00	1.86 (3.1)	0.29
Yes	1.43 (3.1)		2.76 (3.2)		1.79 (3.3)		2.00 (3.5)	
Digestive problems								
No	1.14 (2.1)	0.66	2.02 (2.3)	0.12	0.79 (1.9)	0.00**	1.70 (3.1)	0.01*
Yes	1.80 (3.6)		2.39 (2.6)		1.96 (4.4)		2.16 (3.3)	
Dry mouth								
No	1.28 (1.8)	0.02*	1.81 (1.5)	0.02*	0.74 (1.1)	0.01*	1.66 (2.9)	0.10
Yes	1.60 (3.8)		2.68 (3.2)		2.02 (4.7)		2.20 (3.6)	
Lack of energy								
No	1.18 (1.8)	0.55	1.83 (1.6)	0.23	0.88 (1.3)	0.58	1.85 (3.2)	0.73
Yes	1.54 (3.2)		2.36 (2.8)		1.49 (3.9)		1.91 (3.2)	
Chest tightness								
No	1.17 (1.6)	0.12	1.76 (1.4)	0.02*	0.76 (1.2)	0.05*	1.73 (3.1)	0.00**
Yes	1.73 (3.8)		2.71 (3.2)		1.93 (4.6)		2.09 (3.3)	
Difficulty breathing								
No	1.40 (2.5)	0.14	1.76 (1.4)	0.02*	1.14 (3.2)	0.03*	1.73 (2.8)	0.18
Yes	1.43 (3.3)		2.87 (3.4)		1.50 (3.3)		2.15 (3.7)	
Tremor								
No	1.34 (2.5)	0.39	1.81 (1.6)	0.01*	1.06 (3.1)	0.00**	1.66 (2.8)	0.00**
Yes	1.55 (3.5)		2.88 (3.4)		1.69 (3.4)		2.33 (3.8)	
Headache								
No	1.06 (1.4)	0.27	1.64 (1.5)	0.00**	0.60 (0.9)	0.00**	1.43 (2.8)	0.00**
Yes	1.71 (3.6)		2.63 (2.9)		1.85 (4.2)		2.28 (3.5)	
Muscle pains								
No	1.40 (2.7)	0.16	1.87 (1.6)	0.40	1.24 (3.7)	0.15	1.73 (3.2)	0.01*
Yes	1.42 (2.9)		2.41 (2.9)		1.30 (2.8)		2.01 (3.2)	
Sleeping problems								
No	1.43 (2.9)	0.44	1.79 (1.6)	0.14	1.54 (4.1)	0.73	1.99 (3.4)	0.76
Yes	1.40 (2.8)		2.38 (2.7)		1.14 (2.6)		1.83 (3.1)	
Nutritional problems								
No	1.39 (2.5)	0.06	1.80 (1.4)	0.17	1.10 (3.3)	0.00**	1.67 (2.9)	0.00**
Yes	1.45 (3.2)		2.66 (3.3)		1.50 (3.1)		2.17 (3.5)	
Palpitations								
No	1.37 (2.5)	0.11	1.75 (1.4)	0.00**	1.11 (3.2)	0.01*	1.61 (2.8)	0.00**
Yes	1.48 (3.3)		2.86 (3.4)		1.55 (3.3)		2.33 (3.7)	
Fatigue								
No	1.09 (1.7)	0.67	1.91 (1.6)	0.83	0.79 (1.0)	0.72	1.60 (3.0)	0.21
Yes	1.59 (3.3)		2.32 (2.8)		1.54 (3.9)		2.05 (3.3)	

* p < 0.05 ** p<0.01

Table 3. Psychological symptoms associated with the exposure of the older adults to information about the pandemic, Chiclayo, Peru, 2021.

Psychological symptoms	Internet M (=DS)	p	Television M (=DS)	p	Radio M (=DS)	p	Newspaper M (=DS)	P
Lack of hope								
No	1.11 (1.5)	0.96	1.78 (1.8)	0.02*	0.78 (1.0)	0.56	1.92 (3.5)	0.68
Yes	1.53 (3.2)		2.33 (2.6)		1.47 (3.7)		1.88 (3.1)	
Irritation								
No	1.04 (1.4)	0.45	1.60 (1.4)	0.00**	0.71 (1.1)	0.01*	1.41 (2.7)	0.00**
Yes	1.75 (3.7)		2.71 (3.0)		1.79 (4.3)		2.33 (3.5)	
Unwillingness								
No	1.10 (1.7)	0.50	1.74 (1.6)	0.02*	0.93 (1.9)	0.25	1.90 (3.2)	0.87
Yes	1.59 (3.3)		2.42 (2.8)		1.47 (3.8)		1.89 (3.2)	
Fear of getting sick								
No	0.57 (1.0)	0.01*	1.58 (1.4)	0.06	0.84 (1.2)	1.00	1.41 (3.6)	0.01*
Yes	1.52 (3.0)		2.25 (2.5)		1.33 (3.4)		1.95 (3.1)	
Nervousness								
No	0.72 (1.0)	0.01*	1.64 (1.5)	0.01*	0.77 (1.2)	0.21	1.48 (3.2)	0.00**
Yes	1.70 (3.3)		2.39 (2.7)		1.48 (3.7)		2.06 (3.2)	
Panic								
No	1.01 (1.2)	0.30	1.68 (1.4)	0.00**	0.74 (1.2)	0.01*	1.36 (2.7)	0.00**
Yes	1.77 (3.7)		2.61 (3.0)		1.75 (4.2)		2.35 (3.5)	
Fear of dying								
No	0.66 (1.0)	0.00**	1.73 (1.8)	0.04*	1.00 (1.4)	0.52	1.58 (3.2)	0.04*
Yes	1.60 (3.1)		2.29 (2.6)		1.34 (3.5)		1.97 (3.2)	
Lack of interest								
No	1.23 (2.1)	0.30	1.98 (1.8)	0.62	1.07 (1.9)	0.57	1.99 (3.2)	0.45
Yes	1.53 (3.2)		2.30 (2.8)		1.41 (3.8)		1.82 (3.2)	
Worry								
No	0.58 (0.8)	0.00**	1.81 (1.2)	0.84	0.80 (1.1)	0.54	1.47 (3.2)	0.22
Yes	1.56 (3.0)		2.24 (2.6)		1.36 (3.5)		1.96 (3.2)	
Willingness to die								
No	1.47 (2.5)	0.00**	1.91 (1.7)	0.29	1.13 (3.1)	0.00**	1.84 (3.0)	0.09
Yes	1.26 (3.6)		2.90 (3.8)		1.66 (3.5)		2.03 (3.8)	
Anxiety								
No	0.76 (1.3)	0.00**	1.83 (1.4)	0.61	0.94 (1.4)	0.98	1.81 (3.5)	0.53
Yes	1.64 (3.2)		2.30 (2.7)		1.39 (3.7)		1.92 (3.1)	
Sadness								
No	0.96 (2.9)	0.02*	2.04 (2.9)	0.41	1.04 (2.9)	0.27	2.01 (4.8)	0.03*
Yes	1.52 (2.8)		2.21 (2.3)		1.33 (3.3)		1.86 (2.7)	
Unjustified fear								
No	0.99 (1.3)	0.94	1.60 (1.2)	0.00**	0.64 (1.1)	0.00**	1.32 (2.4)	0.00**
Yes	1.72 (3.5)		2.60 (2.9)		1.74 (4.1)		2.31 (3.7)	
Discouragement								
No	1.23 (2.5)	0.79	2.03 (2.5)	0.65	1.00 (2.4)	0.44	1.95 (3.7)	0.30
Yes	1.51 (3.0)		2.26 (2.4)		1.42 (3.6)		1.86 (2.9)	
Anger								
No	0.99 (1.4)	0.71	1.72 (1.6)	0.00**	0.63 (1.1)	0.00**	1.58 (2.7)	0.00**
Yes	2.10 (4.2)		2.92 (3.3)		2.32 (4.9)		2.39 (3.9)	
Fear of loved ones dying								
No	0.68 (1.2)	0.02*	1.76 (1.4)	0.49	0.84 (1.0)	0.80	1.60 (3.5)	0.29
Yes	1.51 (3.0)		2.23 (2.5)		1.33 (3.4)		1.93 (3.2)	
Willingness to be alone								
No	1.54 (2.6)	0.00**	1.90 (1.7)	0.22	1.13 (3.2)	0.00**	1.66 (2.9)	0.00**
Yes	1.17 (3.2)		2.71 (3.4)		1.55 (3.2)		2.33 (3.7)	

* p < 0.05 ** p<0.01

Table 4. Use of substances associated with the exposure of the older adults to information about the pandemic, Chiclayo, Peru, 2021.

Substance Use	Internet M (=DS)	p	Television M (=DS)	p	Radio M (=DS)	p	Newspaper M (=DS)	p
Alcohol or Tobacco								
No	1.37 (2.4)	0.04*	2.08 (1.9)	0.76	1.18 (2.9)	0.53	1.85 (2.9)	0.82
Yes	1.77 (5.1)		2.94 (4.9)		1.99 (5.0)		2.22 (4.9)	
Illegal substances								
No	1.41 (2.4)	0.00**	2.09 (1.8)	0.09	1.16 (2.9)	0.07	1.86 (2.9)	0.76
Yes	1.47 (5.0)		2.80 (5.1)		2.17 (5.0)		2.12 (4.8)	
Psychoactive drugs								
No	1.47 (2.6)	0.00	1.90 (1.7)	0.07	1.19 (3.3)	0.11	1.76 (2.8)	0.29
Yes	1.30 (3.3)		2.74 (3.4)		1.44 (3.2)		2.16 (3.9)	

* p < 0.05 ** p < 0.01

Table 5. Use of the Internet, television, radio, and newspapers associated with demographic variables and physiological and emotional symptoms of the older adults to exposure to information about the pandemic, Chiclayo, Peru, 2021.

Variable	Internet			Television			Radio			Newspapers		
	Beta	p	CI 95%	Beta	p	CI 95%	Beta	P	CI 95%	Beta	p	CI 95%
Age	-0.09	<0.001	-0.13- -0.05	-	-	-	-	-	-	-	-	-
Anger	1.58	0.001	1.65-2.51	-	-	-	1.86	<0.001	1.87-2.85	-	-	-
Digestive problems	1.24	0.002	1.46-2.01	-	-	-	-	-	-	-	-	-
Nutritional problem	-1.41	0.001	-2.23- -0.59	-	-	-	-	-	-	-	-	-
Worry	1.04	0.01	1.23-1.85	-	-	-	-	-	-	-	-	-
Decreased libido	-1.10	0.04	-2.19- -0.01	-	-	-	-	-	-	-	-	-
Fear	1.36	0001	1.59-2.14	0.61	0.02	0.09-0.14	-	-	-	1.19	0.01	1.23-2.15
Irritation	-	-	-	0.60	0.02	0.09-0.11	-	-	-	-	-	-
Sleep problems	-	-	-	-	-	-	-1.13	0.004	-1.89- -0.37	-	-	-
Chills	-	-	-	-	-	-	1.51	0.002	1.57-2.46	1.22	0.02	1.13-2.31
Tremors	-	-	-	-	-	-	-1.92	0.002	-3.16- -0.69	-	-	-
Headache	-	-	-	-	-	-	1.12	0.01	1.26-1.98	-	-	-
Lack of hope	-	-	-	-	-	-	-	-	-	-1.04	0.02	-1.96- -0.12

Added to this, exposure to radio information was associated with the presence of digestive problems, nutritional problems. In addition, being informed through newspapers was associated with decreased sexual desire and muscle pain. (p<0.05, chi square).

Regarding the correlations between the presence of emotional reactions and the use of means of information (Table 4); significant relationships were identified with common symptoms for the different media such as: nervousness, fear of dying, willingness to die, willingness to be alone. For the Internet, a relationship was also evidenced with: fear of getting sick, worry, anxiety, sadness, fear of loved ones dying. (Table 5)

Moreover, lack of hope, irritation, unwillingness, panic, unjustified fear, and anger were correlated with television use. In addition to this, the information by radio was related to irritation, panic, unjustified fear, anger (p<0.05 to <0.000, chi square).

DISCUSSION

The data from the study indicate that older adults were affected by the abundance of information disseminated on the web, affecting physical and emotional health and altering the habits in the consumption of legal and illegal substances, and medicines.

Since the start of the pandemic, older adults have heard the news describing them as five times more likely to become seriously ill or die than younger people.¹⁸ In addition, they had to undergo mandatory distancing, face preventive social confinement and lack of knowledge about the sick process of COVID-19.

All these drastic changes affected their daily lives and placed the older adults in a situation of uncertainty, since the conceptual framework they had about the disease was new and the social imaginaries about the disease were aggravated by the large amount of information that circulated in different news media.¹⁹ To deal with uncertainty, these people needed to familiarize themselves with the disease, find explanations for the health event that was devastating all areas of life, and to improve their cognitive capacity, they resorted to the information that circulated in the different news media.^{20,21}

The findings confirm that older adults use the Internet for 1.41 hours, a similar time was evidenced in the use of television and radio. In this regard, Sholten, et al., sustains that the use of social networks for more than 5 hours has negative consequences²², and this information overload probably produced situations of consumption of alcohol, tobacco, and psychotropic drugs.

The results showed that access to information via the internet motivated the older people to consume legal substances: alcohol, tobacco ($p=0.045$), illegal substances ($p=0.000$) and psychotropic drugs ($p=0.005$). Contextual situations such as quarantine and social isolation lead to drug use and may arise as a way of coping with or avoiding situations of uncertainty.²³

In addition, altering the normal life routine, not knowing the risk of real contagion, social distancing from family and friends also caused changes in the intake of substances such as alcohol, drugs and psychotropic drugs during the COVID-19 pandemic²⁴, it should be noted that these substances can affect the aging process since they alter the immune system and cause situations of dependency and addiction²⁵, which could have caused older adults to reduce their health care when faced with the information received.

The confined older adults related themselves with the extradomestic context through the news; but the television, radio and press media monopolized the news of COVID-19, during the year 2020, with headlines such as: *“Peru, the worst country in handling the pandemic”* and *“third country with the worst management of the pandemic”*, *“Peru registers the highest mortality in the world from COVID-19”*²⁵; context that classified the Peruvian territory with high infodemic risk.²⁶

Faced with this context, older adults received information that probably caused them a feeling of stress, uncertainty, and danger, which cause a series of physiological and psychological symptoms in humans that are evidenced through behavioral, emotional, and social symptoms. The literature reports that during a defense response, a neuro-hormonal response occurs, affecting the muscular and gastric organs, the brain, and the vegetative nervous system²⁷; all of them cause a series of similar symptoms as those reported by the interviewees; as the Wuhan coronavirus pandemic has spread for several months, these symptoms will probably become chronic, irreversibly affecting the health of the older people.

Similar results were observed in China, whose participants reported headache, myalgia, and chills.^{23,25} During confinement, the older adults received alarming news from the media to which they had access; causing somatic symptoms and mental health disorders.^{26,27}

In the study, the participants had different emotional reactions according to the information medium used; older adults who received information through the internet presented anger, worry and fear. Those who watched the news on television reported fear of getting sick and irritation; those who read the news in the newspaper fear and lack of hope.

These reactions can probably be influenced by the personality of the older adults and that to change these negative emotions it is necessary to work on family support, since it can reduce uncertainty, this indication is facilitated by the fact that older people live with a partner and have more than two children. In Mexico, it was evidenced that 72.7% improved their relationship with their partner during confinement, since feelings of fear and vulnerability are present on a daily basis and are compensated by the presence of the partner.²⁸

The use of the internet due to its speed of sharing information about COVID-19 increased the risk of suffering from digestive and nutritional problems, and decreased libido in older adults, it is also the medium that was significantly associated with the greatest number of emotional and physiological symptoms. The use of the Internet has a high potential to disseminate erroneous, alarmist, and exaggerated information that can cause fear, stress, and depression in people with or without psychiatric illnesses.^{21,27}

The results of the study indicate that the information received by newspapers has also caused a negative physical and emotional impact. Manifested by physical signs such as sweating, chest tightness, headache and tremors and emotional symptoms of irritation, fear, and panic. Many of these signs reveal that older adults probably presented anxiety and depression. Previous research has indicated that emotional disorders are a widespread phenomenon in countries severely affected by the pandemic, since loneliness and social isolation increased the risk of these pathologies.²⁷

In China, anxiety symptoms have been of moderate to severe intensity in 28% of the older population. These results can be explained by the home confinement imposed on older adults, from one moment to the next their family and friends network was limited, all of which caused uncertainty and feelings of loss of control of daily life.²⁸

The results demonstrate the importance of having a greater number of professionals qualified and trained in caring for the older people and in mental health, in order to identify problems that can often go unnoticed. It is important that longitudinal studies are carried out for early identification and timely intervention of the health professional.

In this time of pandemic, older adults were the most vulnerable population group in the world. The use of technology increased access to information to the population, but adequate filters are necessary to avoid the dissemination of false information that could harm the health of older adults.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

This study concludes that the different news about the pandemic disseminated by different media (internet, radio, television and newspapers) had an impact on the health of older adults in the physical, psychological and emotional aspect, which led them to the consumption of substances (legal, illegal and psychotropic drugs), although no statistical significance was identified when associated with their consumption.

The study brings an important contribution to gerontological nursing, since with the evaluation of the elderly it is possible to identify possible alterations in mental and physical health among older people. In addition, the formation of multidisciplinary teams aimed at caring for the older adult who lives at home and applying new forms of care with the use of technology.

The study presented the following limitations: 1) it was a homogeneous sample and for convenience, which did not allow interviewing older adults who do not have and do not use a telephone or internet, in addition it is not possible to make statistical inferences for the general population, and 2) the study was cross-sectional, which does not allow an inference of cause and effect. However, the number of study participants allows us to identify this problem in the older adults and its consequences, requiring further study of how the pandemic has affected this population.

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