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Effects of media, emotional impact and compliance with health recommendations in university students during the coronavirus (Covid-19) quarantine period in Peru (2021)

Efectos de los medios de información, impacto emocional y cumplimiento de recomendaciones de salud en estudiantes universitarios durante el periodo de cuarentena del coronavirus (Covid-19) en Perú (2021)

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Abstract

The present study aims to identify the impact generated by the information media, social networks and the media on Peruvian university students in the context of the COVID19 quarantine in Peru, and to know how it relates to the emotional state, and to the compliance with health recommendations. This retrospective correlational study collected information from 396 students from a Peruvian university, Universidad Nacional Mayor de San Marcos, through a virtual survey conducted during two weeks of the Peruvian quarantine (March 13 – May 13, 2021). The main results show that there is an association between the effects of the media and compliance with health recommendations. The most reassuring messages came from authorities such as the president of Peru, the university, and government text messages; as well as television; while the most disturbing messages were spread through social networks and other media. Furthermore, the findings show that university students mostly complied with the main recommendations of the Peruvian government and the WHO.

Keywords: Emotional impact; effects of media; health recommendations; COVID19.

Resumen

El presente estudio tiene como objetivo identificar el impacto que generan los medios de información, las redes sociales y los medios de comunicación en los estudiantes universitarios peruanos en el contexto de la cuarentena de COVID19 en Perú, y conocer cómo se relaciona con el estado emocional y el cumplimiento de las recomendaciones de salud. Este estudio correlacional retrospectivo recopiló información de 396 estudiantes de una universidad peruana, la Universidad Nacional Mayor de San Marcos, a través de una encuesta virtual realizada durante dos semanas de la cuarentena peruana (del 13 de marzo al 13 de mayo del 2021). Los principales resultados muestran que existe una asociación entre los efectos de los medios y el cumplimiento de las recomendaciones sanitarias. Los mensajes más tranquilizadores vinieron de autoridades como el presidente del Perú, la universidad y los mensajes de texto del gobierno; así como de la televisión; mientras que los mensajes más inquietantes se difundieron a través de las redes sociales y los otros medios de comunicación. Además, los hallazgos muestran que los estudiantes universitarios cumplieron mayormente con las recomendaciones principales del gobierno peruano y de la OMS.

Palabras clave:

Impacto emocional; efecto de los medios de información; recomendaciones sanitarias; COVID19.

Introduction

COVID-19, a recent coronavirus disease that emerged in 2019, was found to spread mainly through respiratory droplets (Bonilla et al., 2020; Farfán-Cano, 2022; Martínez et al., 2020; Ramos, 2020; World Health Organization [WHO], 2020a). It goes beyond a public health crisis, triggering global social and economic consequences ([WHO], 2020b; Gozzer, 2020; Salomon, 2020). Latin America, like Africa, experienced a delayed virus arrival. The first COVID-19 case in Latin America was reported on February 26, almost two months after the outbreak began, and the first death occurred on March 7. In response to global events, most Latin American countries closed borders, enforced isolation, and declared emergencies and curfews. Peru, the focus of the study, ranked fifth in first-year cases (CDC-Peru, 2020). Peruvian measures included mandatory isolation, border closure, suspension of activities, and support for health workers and low-income families.

Despite lower COVID-19 impact on youth (Liu et al., 2020), pandemic restrictions limited their social spaces, pushing them to rely on digital interactions. Excessive phone use can lead to sleep issues, loneliness, and depression (Chen et al., 2020). In Latin America, the impact of the pandemic has not been the same in countries with low income, digital gaps and inequality, as in Peru, where educational management faces different problems (Canaza-Choque, 2020). In the specific case of Lima, Lovón & Cisneros (2020), find that university students report feelings of stress and anxiety during the study cycle.

Due to the above, this research seeks to recognize what happened to the university students of Lima in relation to the three variables analyzed in this research from the case of the students of the Universidad Nacional Mayor de San Marcos (the largest in Lima).

Theoretical approach

1.1. Emotional impact

Emotion is defined as a complex state characterized by an excitement or disturbance that will lead to an action; it is the response to an external or internal event faced by the subject (Serrano y Ibañez, 2015). Emotional development involves physiological, expressive, and behavioral aspects, influenced by socio-cultural interactions and contextual stimuli (Echeverría et al., 1989; Serrano y Ibañez, 2015). Emotional responses can be categorized as fear, surprise, disgust, anger, joy, and sadness (Ekman y Friesen, 1978). This study, based on the proposals of Ponce et al. (2010), has worked with this scale to understand the emotional impact of the surveyed population.

Serrano y Ibañez (2015) explain that there are three ways in which the negative emotional impact on a person is manifested: the neuro-physiological dimension (linked to physical effects such as tachycardia, sweating, altered blood pressure, etc.), the cognitive dimension (experiencing cognitive distortions, anxiety disorders, irrational thinking, etc.) and the behavioral dimension (which can manifest itself in irritability and personality disorders or, on the opposite side, somatization as a result of inadequate emotional management). Each of these three dimensions has an impact on coping with a specific situational demand. For this reason, the present study understands 'emotional impact' as the way in which the studied population faced the context of Covid-19 in Peru. In other words, this study is interested in analyzing the "emotional state at the present time in the face of the health situation experienced" (Ponce et al., 2010, p. 10).

1.2. Effects of the Media

The media occupy a central place in the configuration of contemporary culture through the system of beliefs that structure our perception of reality and of all that they validate and make visible: media representation (Ferguson, 2007; Hall, 2013). This constitutes a fundamental source not only for the circulation of information, but also in the production and transmission of symbolic forms, the outlining of new subjectivities, the legitimization or rejection of ideologies (Thompson, 1993). Berger y Luckman (1968), noted mass media's role in shaping public reality, defining significant events and their interpretations for the majority. Social public health is no stranger to this understanding.

Several studies agree that, in the context of the influenza A(H1N1) pandemic, during 2009, the mass media played an important role in informing and misinforming on this issue: they influenced the decision-making of health professionals and civil society in general (Atlani-Dualut et al., 2015; Tuells et al., 2013) Thus, for example, the mass media often ended up complementing the information provided by doctors and nurses (Tuells et al., 2013). As a result, the mass media -the dissemination of their messages and the way they are received- is an important tool for measuring the perception of social issues in general and of public health issues in particular (as is currently the case with the pandemic unleashed by CoVID-19).

Finally, for this research it is assumed that information from the media, social actors and social networks has an effect on the behavior and actions of people: "media reports and education have the potential to affect the awareness of the public, thus can modify the community's behaviors during the infectious disease outbreak" (Zhou et al., 2020, p. 2694).

1.3. Compliance with Health Recommendations

Compliance with health recommendations is related to two attitudes: on the one hand, the continuation of a set of activities that are good for one's health, that is, what people should do; and, on the other hand, the rejection of practices that are harmful to health or what people should not do. Furthermore, as Pavey et al. (2018) point out, "[t]he distinction between should and should not is related to two forms of morality that have been identified in the literature: proscriptive morality (what we should not do) vs. prescriptive morality (what we should do)" (p. 345).

The importance of health recommendations, in cases of infections and serious diseases, has been documented in studies that found compliance with them in contexts of epidemics or outbreaks (Atlani-Duault et al., 2015; Bradol, 2017; Edirne et al., 2011; Li et al., 2016). During the Coronavirus pandemic (CoVID-19), health recommendations were mainly given by the World Health Organization, which called for "frequent cleaning of hands using alcohol-based hand rub or soap and water; covering the nose and mouth with a flexed elbow or disposable tissue when coughing and sneezing; and avoiding close contact with anyone that has a fever and cough" (WHO, 2020b, párr. 1).

For proper compliance regarding these health recommendations, Peru opted for a period of quarantine throughout the country, in addition to constant messages through the media, daily press briefings conducted by the president, text messages, and other information pointing in both directions: on the proscriptive side, hand washing, use of masks and covering when sneezing; and on the prescriptive side, mandatory social isolation and curfew starting at 20:00 (Decreto Supremo N° 044-2020-PCM y Decreto de Urgencia N° 026-2020).

Various information channels, including state, mass media, and social networks, directly influence viewers' emotions based on provided information and narrative tools. Media responsibility is crucial in times of epidemics, impacting public perception and health recommendations. Inaccurate reporting fosters confusion and public skepticism (Giron & Martins, 2010; Serrano-Puche, 2016; Salcudean y Muresan, 2017; Vallance et al., 2018; Akingbade, 2018; Rodríguez, 2006). Media's role in transmitting risk information efficiently is evident from past outbreaks (Sugerman et al., 2012; Bergeron y Sanchez, 2005).

1.4. Background to the study

The World Health Organization (WHO) and Dimensions (SCOPUS, WOS and others) database of publications related to coronavirus has some studies related to "media", "health recommendations" and "emotional impact".

Parsons et al. (2020) surveyed 1996 Canadian citizens in the first year of the pandemic and observed that 39% reported experiencing emotional impact due to the pandemic. Similarly, 80% of the respondents indicated adherence to health recommendations. Likewise, in this country, Cyrkot et al. (2024) interviewed and followed

21 parents of individuals under 18 years old, discovering that they primarily relied on the internet for COVID-19 information, focusing on sources deemed credible, reliable, simple, and engaging.

Scheinfeld & Voorhees (2022) examine the influence of social media on the behavior of 459 individuals in the United States between 2021 and 2022. The researchers note that digital social networks generated a high level of FoMo (Fear of Missing Out), yet this did not directly impact non-compliance with health recommendations. Consequently, the fear of contracting the virus persisted more prominently.

In Asia, specifically in Malaysia, surveyed 827 citizens and conducted interviews with 19 individuals between the first and second year of the pandemic. The results revealed that "The internet and social media were vital platforms to mitigate against the impact of public health measures" (Cheah et al., 2023, p. 1).

In Europe, specifically in Spain, Torralbo et al. (2024) identified that adolescents and young people between 16 and 20 years old primarily sought information about COVID-19 through social media, leading to emotional impacts such as anxiety, irritability, apathy, and notably, 17% sought help from a mental health professional.

Lastly, a singular study addresses the three variables analyzed in this research (media, health recommendations, and emotional impact). This investigation targeted the Venezuelan migrant population and found that although there exists a slight positive correlation between emotional impact and media effects, as well as between the first category and adherence to health recommendations; there is no correlation between the variables of effect of media and compliance with health recommendations (Angulo-Giraldo et al., 2021).

The three variables analyzed in this research are directly related and allow us to respond to the general objective of the investigation: to understand the relationship between emotional impact, media effects and compliance with health recommendations during the coronavirus quarantine period (COVID-19) in Peru (2020).

Methods

Following the associative paradigm¹, this research is correlational, collecting non-changing data, retrospective and cross-sectional, capturing one-time population characteristics. About the unit of analysis, around 1,299,251 undergraduates exist in Peru, 4.2% of the total population (Superintendencia Nacional de Educación Superior Universitaria [SUNEDU], 2022). In Lima, with high COVID-19 cases, 48% of 17-25-year-olds attend university (Instituto Nacional de Estadística e Informática [INEI], 2017). This study focuses on Lima's Universidad Nacional Mayor de San Marcos (UNMSM), established in 1551, the city's largest national university, where students are connected to various regions through socio-demographic ties. (Burga, 2019; Giraldo, Díaz & Calderón, 2019; Lynch, 1990; UNMSM, 2007). Out of 13,901 UNMSM enrollees (SUNEDU, 2022), a simple random sample of 418 was obtained with a 5% margin of error and 95% confidence. However, the non-probabilistic sampling method was used, involving virtual distribution through social networks, email, and WhatsApp groups, with a 10% increase to account for potential loss or rejection (Figure 1).

¹ The associative paradigm, according to Balluerka & Vergara (2002), differs from the experimental paradigm of research in that it does not seek a causal relationship when analyzing variables. Additionally, variables are not manipulated, there is no control group, and it follows an observational or survey design.

A questionnaire validated by Ponce et al. (2010)² was modified in relation with the COVID-19 and the country. This survey modified was applied in Peru and validated through the study by Angulo-Giraldo et al. (2021) for the three variables analyzed. The emotional impact³ variable was evaluated based on the confluence of the following: (a) the rating of their emotional state at the current time of the situation with respect to COVID-19 ("calm", "worried", "fearful", "terrified", "angry", "disoriented" and "excited"); with (b) the Likert-type rating scale ("not at all", "very little", "little", "regularly", "much" and "very much").

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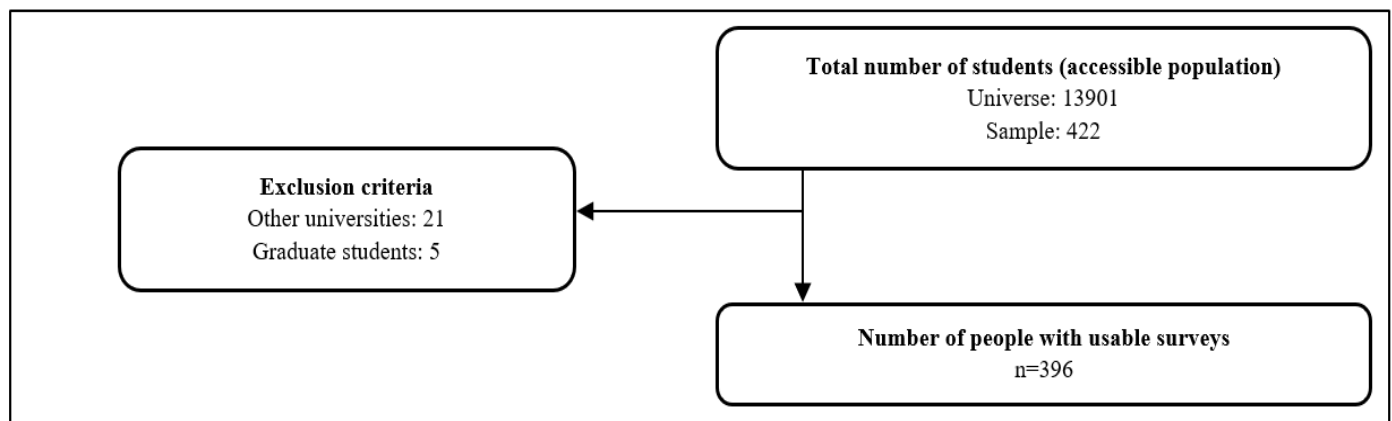


Fig. 1: Flowchart of universe and sample selection

² The original questionnaire categorized the dimensions and items in the following way:

“Risk perception was assessed in six areas: 1. concern about infecting family members, 2. contracting the virus at work, 3. contracting the virus during transportation, 4. the economic repercussions of the illness, 5. the possibility of hospitalization, and 6. the possibility of death. Participants were asked to assign a number from 1 to 6, with 1 representing the highest level of concern and 6 representing the lowest.

Emotional impact was evaluated by asking participants to rate their current emotional state in response to the health situation experienced in the city: 1. calm, 2. worried, 3. fearful, 4. terrified, 5. angry, 6. disoriented, 7. excited, with response options ranging from nothing, very little, little, moderate, much, to very much.

The influence of media information - newspapers, television, radio, Internet, press conferences by health authorities, bulletins or circulars from the workplace management or institution, information from immediate superiors, and information from colleagues - was evaluated with three response options: reassuring, unsettling, none. Lastly, compliance with health recommendations was assessed with response options: always, almost always, sometimes yes/sometimes no, almost never, and never.” (Ponce et al., 2010, p. 10).

³ The variable "emotional impact" is addressed through 7 dimensions which include the following emotions (calm, worry, fear, terror, angry, disorientation, and excitement). The list of questions or items includes the following:

1. At this moment, do you feel calm?
2. At this moment, do you feel worried?
3. At this moment, do you feel fearful?
4. At this moment, do you feel terrified?
5. At this moment, do you feel angry?
6. At this moment, do you feel disoriented?
7. At this moment, do you feel excited?

The variable effects of media⁴ took into account information distributed by 3 informative spaces: the media (television, radio, press), the digital social media (WhatsApp groups with friends, family, co-workers or bosses, in addition to Twitter, Facebook and text messages) and messages from authorities (university, press conferences and briefings from authorities (university, press conferences and briefings from president Francisco Sagasti). These were evaluated with the three options suggested by Ponce et al. (2010): "reassuring information," "disturbing," and "none".

Finally, for the variable compliance with health recommendations⁵ implemented by the Peruvian government, three widespread measures were considered: social isolation; frequent handwashing with soap and water for 20 seconds; and covering nose and mouth with tissue paper when coughing/sneezing or doing it into the bend of the elbow. Response options were classified as "always", "almost always", "sometimes", "almost never" and "never". The survey was conducted between March 13 (2021) and May 13 (2021).

The data was collected through a virtual survey, and corrections were made in Microsoft Excel by one of the researchers, the same person who reviewed the database for errors. Then, the information was processed in the software Python 3.8.2 version. The Pearson correlation was considered valid with a significance of $p < 0.05$.

Results

The main findings show that there is not a positive correlation⁶ between the variables emotional impact and effects of the media (5.4%) with a not significant association ($p=0.28$). The same happens with the correlation between the variables emotional impact and compliance with health recommendations (9.5%), which is not significant ($p=0.05$). However, there is a weak negative correlation (-23.3%) between the variables effect of the media and compliance with health recommendations ($p=0.00$).

⁴ The variable "effect of media" is examined across 3 dimensions (traditional media, digital social media, and information from authorities). The list of questions or items is as follows:

1. How would you rate the information provided by television channels?
2. How would you rate the information provided by printed newspapers?
3. How would you rate the information provided by radio stations?
4. How would you rate the information provided by your workplace?
5. How would you rate the information provided by the National University of San Marcos?
6. How would you rate the information provided in press conferences and national addresses by President Francisco Sagasti?
7. How would you rate the information provided via WhatsApp with family members or coworkers?
8. How would you rate the information provided via WhatsApp with friends?
9. How would you rate the information provided on Twitter?
10. How would you rate the information provided on Facebook?
11. How would you rate the information provided via text messages?

⁵ The variable "health recommendations" is assessed across 7 dimensions (staying at home, handwashing, covering nose and mouth, wearing a mask, social distancing, using a face shield, and maintaining distance). The list of questions or items is as follows:

1. Did you comply with staying at home except when necessary during the quarantine period?
2. Did you comply with handwashing with soap and water (for at least 20 seconds)?
3. Did you comply with covering your nose and mouth with your forearm when coughing?
4. Did you comply with wearing a mask when leaving the house?
5. Did you comply with staying at home during total lockdown days or during curfew hours?
6. Did you comply with using a face shield when boarding public or private transportation?
7. Did you comply with maintaining a meter of distance in public spaces?

⁶ This paper works with Pearson correlation.

By emphasizing the dimensions of the related variables, this research finds that there are only significant correlations between the effect of the media and compliance with health recommendations during the COVID-19 situation in Peru, as shown in Table 1. However, there are few significant correlations between the dimensions of emotional impact, effects of the media and compliance with health recommendations (Table 2 and Table 3).

Table 1- Significant correlations between effect of the media and compliance with health recommendations

Media	Compliance with health recommendations						
	Not leaving home except when it was necessary during the quarantine period	Handwashing with soap and water (20 seconds minimum)	Covering nose and mouth with tissue paper/bend of elbow when coughing	Use of the mask	Mandatory social isolation	Use of a face shield when boarding public or private transport	Keeping the distance in public spaces
Television	0.00	0.00	1e-08	0.00	0.00	0.00	0.44
Newspapers	0.62	0.53	0.00	0.1	0.02	0.06	0.03
Radio	0.69	0.0	0.00	0.00	0.00	0.87	0.99
Workplace	0.74	0.01	0.97	0.34	0.96	0.08	0.39
University	0.49	0.18	0.84	0.45	0.64	0.25	0.18
Press conferences and briefings — president Francisco Sagasti	0.69	0.01	0.84	0.86	0.74	0.52	0.17

Compliance with health recommendations

Media	Not leaving home except when it was necessary during the quarantine period	Handwashing with soap and water (20 seconds minimum)	Covering nose and mouth with tissue paper/bend of elbow when coughing	Use of the mask	Mandatory social isolation	Use of a face shield when boarding public or private transport	Keeping the distance in public spaces
Bosses or co-workers	0.49	0.84	0.10	0.26	0.62	0.89	0.56
WhatsApp groups (family members or co-workers)	0.03	0.22	0.00	0.03	0.06	0.61	0.77
WhatsApp groups with friends	0.25	0.89	0.28	0.05	0.03	0.51	0.49
Twitter	0.37	0.18	0.00	0.01	0.21	0.03	0.18
Facebook	0.77	0.38	0.03	0.01	0.07	0.14	0.41
SMS	0.85	0.91	0.91	0.00	3.62e-0	0.78	0.29

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Table 2- Significant correlations between emotional impact and effect of the media

Current emotional state

Media	Calm	Worried	Fearful	Terrified	Angry	Disoriented	Excited
Television	0.03	0.02	0.19	0.53	0.51	0.18	2.62e
Newspapers	0.08	0.22	0.00	0.08	0.09	0.89	0.06
Radio	0.27	0.00	0.00	0.90	0.60	0.13	0.02
Workplace	0.16	0.53	0.52	0.31	0.45	0.43	0.00
University	0.56	0.65	0.59	0.18	0.55	0.06	0.96
Press conferences and briefings — president Francisco Sagasti	0.85	0.94	0.83	0.06	0.80	0.97	0.40
Bosses or co-workers	0.67	0.30	0.76	0.28	0.11	0.78	0.67
WhatsApp groups (family members or co-workers)	0.68	0.23	0.00	0.71	0.97	0.02	0.00
Whatsapp groups with Friends	0.36	0.77	0.08	0.57	0.66	0.69	0.31

Twitter	0.43	0.50	0.12	0.01	0.87	0.42	0.22
Facebook	0.22	0.90	0.82	0.20	0.19	0.37	0.00
SMS	0.92	0.95	0.01	0.78	0.21	0.08	0.00

Font: Elaboration by the authors

Table 3- Significant correlations between emotional impact and compliance with health recommendations

Current emotional state	Compliance with health recommendations						
	Not leaving home except when it was necessary during the quarantine period	Handwashing with soap and water (20 seconds minimum)	Covering nose and mouth with tissue paper/bend of elbow when coughing	Use of the mask	Mandatory social isolation	Use a face shield when boarding public or private transport	Keeping distance in public spaces
Calm	0.20	0.62	0.62	0.75	0.68	0.00	0.15
Worried	0.81	0.25	0.25	0.14	0.09	0.74	0.95
Fearful	0.27	0.88	0.88	0.71	0.24	0.28	0.10
Terrified	0.28	0.22	0.22	0.06	0.22	0.08	0.57
Angry	0.08	0.11	0.11	0.19	0.94	0.09	0.50
Disoriented	0.61	0.75	0.75	0.56	0.45	0.60	0.49

Excited	0.14	0.06	0.06	0.06	0.02	0.41	0.93
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The results of this research show that the emotional impact of COVID-19 on the lives of university students was not very relevant during the period in question (March 13 - May 13, 2021). Firstly, most students reported feeling "regularly calm" (27%) and "regularly excited" (28%); they also reported feeling "a little worried" (29%), "a little fearful" (29%), "a little terrified" (28%), "a little angry" (28%) and "a little disoriented" (28%). This shows that the group of students is perceived as distant and unaware of the development of emotions to a superlative degree, that is, the findings show the absence of a serious effect on the emotional state of young university students.

Secondly, this moderation in the emotional impact of young university students is also related to the reception of informative messages, mainly from official sources and close contacts, which influence them directly. The results of this study show that the students described the information provided by the local television, as "reassuring" (41%); followed by the information sent by text messages (37%). However, information from the social media were relevant, but not in a positive way. The population surveyed indicated that the most "disturbing" information came mainly from social networks close to the subjects surveyed: Facebook (45%) and Twitter (43%). All the others sources of information were primarily classified as "none".

It is important to add that the information send by the institutional information channels —data sources and official measures—were important to send messages "reassuring", like the UNMSM (35%) or the messages from the President of Peru, Francisco Sagasti (34%). Moreover, it is important to note that during the period of this survey (March 13 - May 13, 2021), the President of Peru has held a one-hour press conference during 16 days.

Thirdly, regarding compliance with health recommendations, it is important to note that most of the population studied "always" and "almost always" complied with them. Thus, 84% indicated that they complied with the mandatory social isolation during the period studied, 85% stated that they did not leave home except when it was necessary, 82% kept the distance of 1.5 meter in public spaces, 77% mentioned that when they coughed, they covered their hands with a handkerchief or their forearm, and also the same percent of people admitted that used of a face shield when boarding public or private transport, finally only 69% stated that they washed their hands with soap and water for at least 20 seconds. These compelling results demonstrate the massive compliance with the norms and recommendations indicated by the Government of Peru in the period studied (2021).

At the correlational level between dimensions of the variables, we can see that the association between categories of the variables "compliance with health recommendations" and "effects of media" shows that the impact of television is negatively and yet weak correlated with all dimensions of the former variable except "keeping the distance in public spaces". Similarly, the impact of newspapers is weakly and negative significantly correlated with compliance in "handwashing with soap and water" (0,00), "mandatory social isolation" (0,02), and "keeping the distance in public spaces" (0,03). Radio also exhibits weak and negatively significant correlations with "handwashing with soap and water", "covering nose and mouth when coughing",

"use of masks", and "mandatory social isolation" (0.00 for each). Messages sent via WhatsApp groups (family members or co-workers) similarly maintain significant yet weak and negative associations with various compliance measures, including not leaving home except when necessary (0,03), "covering nose and mouth when coughing" (0,00), "use of masks" (0,03), and "mandatory social isolation" (0,06). Similar patterns are observed with WhatsApp groups with friends, which exhibit a negative and weak association with compliance with social isolation measures (0,03). In contrast, messages in workplace settings show only weak correlations with "handwashing with soap and water" (0,01). Regarding digital social media, correlations were consistently negative, with Twitter messages significantly impacting "handwashing with soap and water" (0,00), "covering nose and mouth when coughing" (0,01), and "use of masks" (0,03), while Facebook information significantly influenced these latter two dimensions (0.03 and 0.01 respectively). Finally, text message information exhibited weak negative correlations with "covering nose and mouth when coughing" (0,03), "use of masks" (0,00), and "mandatory social isolation" (0,00). Significant correlations between the dimensions of the variables "emotional impact" and "effect of the media" indicate that "worried" had a significant, albeit weak, impact with television (0.02) and radio (0.00) information, while "fearful" was weakly associated with newspaper (0.00) and radio (0.00) information, as well as with WhatsApp groups (family members or co-workers) (0.00) and SMS (0.01). Moreover, the emotion of "disoriented" also showed a weak significant relationship with the WhatsApp group with family. Finally, the emotion of "excited" was the most significantly associated with various sources of information: positively with messages in the workplace (0.00) and negatively with messages from TV (0.00), radio (0.02), WhatsApp groups (family members or co-workers) (0.00), Facebook (0.00), and SMS (0.00).

Finally, significant correlations between the dimensions of the variables "compliance with health recommendations" and "current emotional state" consistently demonstrated weak associations, indicating that being "calm" is positively associated with "use of the mask" ($p=0.00$), while being "excited" is associated with "mandatory social isolation" ($p=0.02$).

Discussion

As explained in previous sections, in the context of COVID-19 pandemic in Peru, the emotional impact on the population is associated with the effect of the media (radio, television, text messages, social networks, among others) and also with compliance with health recommendations. Although Peru's objective in the face of the pandemic is to comply with WHO recommendations, the population is reacting not only to the risk of the disease, but also to the crisis that it generates in the economic, political, social and educational aspects, etc. These aspects are interrelated not only with the way in which each person will carry out their daily work, but also with the emotional state with which information will be sought to answer their doubts and concerns about issues that may generate curiosity.

Firstly, regarding emotional impact, the literature shows that the emotional impact of pandemics or outbreaks has an effect on the emotions of medical health professionals and the population in general. In Australia, a high emotional impact was reported in the face of Equine Influenza (EI): "many person-related risk factors for adverse psychosocial response" (Taylor et al., 2010, párr. 1), such as a sense of poor ability to adapt to change and poor ability to recover from adversity. The same occurred in Sierra Leone following the Ebola outbreak (2014-2015) during which health workers described experiencing "'suffering', 'loneliness', being 'isolated' and feeling 'full of sadness' since the onset of Ebola" (McMahon et al., 2016, p. 1236). Similarly, in

the face of COVID-19, Tavares et al. (2020) state that fear is quickly perceived as a consequence of mass quarantine. Lelis et al. (2020) found that 52% of higher education students from health sciences courses in Minas Gerais (Brazil) presented symptoms of depression, while 41% of anxiety. In Peru, Yarlequé et al. (2020) show that more than 50% of Peruvian university students are in the medium or high level of anxiety. These results are close to the results of Gonzáles et al. (2020), who found 40% confinement anxiety in university students in Mexico. 7 out of 10 Peruvians have mental health problems in the context of the pandemic. However, this study indicated that the group of students is perceived as distant and unaware of the development of emotions to a superlative degree, that is, the findings show the absence of a serious effect on the emotional state of young university students.

The data also show the access to information from official sources and TV that the surveyed students have. In Peru, 55% of the urban population consumes more digital media and 45% more traditional media. However, there is an increase in traditional media consumption in low SES sectors, while digital media consumption is greater in high SES sectors (IPSOS, 2019). Likewise, 100% of people in Lima have a television, 91% a radio and 96% a cell phone, but only 87% have a cell phone with internet access (Consejo Consultivo de Radio y Televisión [ConcorTV], 2019). The high presence of televisions in Peruvian homes is also related to the increase in their consumption: the COVID19 pandemic implied an increase in 42% of the consumption of this medium, with a daily average of 6 and a half hours of viewing (El Comercio, 2020). In addition to this, Peruvians mainly consume news (27%) and consider that this is the closest medium (30%) (ConcorTV, 2019). In the same sense, it should be specified that the communication messages of the government authorities were transmitted mainly by television, which could explain the importance of television when sharing “reassuring” messages. In addition, these messages from the Peruvian government authorities were shared by text messages, which explains their relevance for university students. It should be noted that the percentage of respondents who felt calm with the messages of President Francisco Sagasti (34%) coincides with the percentage of approval that young Peruvians grant to his management during the month of April 2021 (33%) (IEP, 2021).

The academic literature (Wang, 2006; Sugerman et al., 2012) agrees that the information sent by official channels -especially when it is of a technical nature- avoids an increase of the crisis; however, this has not happened with the traditional media (radio and press) or with social networks., on the contrary, as the results of this study show, they are providing peace of mind and a sense of moderation in the population. Based on the mentioned, it remains to analyze the role of the press in contexts of social crisis, and consider it essential not to promote a social alarm, not to increase the perception of risk, but on the contrary, to contribute to the reduction of anxiety and panic (Jurado & Jurado, 2014; Lázaro-Rodríguez y Herrera-Viedma, 2020).

In relation with the information presented about compliance with health recommendations by university students coincides with the fact that 95% of Peruvians approve the declaration of obligatory social isolation (IPSOS, 2020) recommended by the WHO (2020b) and also with the compliances carried out in other countries such as Italy or the United States (Barari et al., 2020; Utych & Fowler, 2020). The importance of complying with health recommendations, and specifically with social distancing, has an impact on avoiding the exponential increase of infection (McCann, 2020; Telles, 2020).

Although this research does not find a correlation between the variables of emotional impact and compliance with health recommendations, recent studies find that restrictions on staying at home impact mental health



(depression, anxiety, insomnia, stress) compared to other populations (Killgore et al., 2021), which is worse for people in a state of greater vulnerability since they receive a greater impact on their mental health, as well as suffer more from the restrictions of mobilization or social isolation (Hyun-Soo & Laurence, 2020).

Conclusions

This research finds that there are no correlations between the variables studied (emotional impact, effects of the media and compliance with health recommendations). This finding coincides with that found by Angulo-Giraldo, Guanipa-Ramírez & Albites-Sanabria (2021) regarding the impact of the same variables studied on Venezuelan migrant women residing in Lima. Specifically, the media does not have a correlation with the emotional state of university students, but the media did have a relevant impact on young university students in complying with health recommendations, for this reason, it is necessary that future research clearly determines the role they played in this context and their contribution to emotional stability or compliance with health recommendations.

A second conclusion reveals that the information received by university students did not exhibit a direct correlation with their emotions, although some media did have a brief impact on their emotions. This underscores the need to delve deeper into how these young individuals interact with traditional media (especially television and radio) and nearby digital environments (such as WhatsApp groups).

A third conclusion is that while there was no significant correlation between compliance with health recommendations and emotional impact, some dimensions did show a minimal association between the two, primarily related to feeling "calm" and "excited" when indoors, suggesting that it was the safest place for them. Additionally, the use of masks, strongly reinforced by the Peruvian government as the safest method to prevent contagion, elicited emotions aligned with the sense of protection provided by this physical item, akin to when they were indoors.

Finally, a fourth conclusion arises from the minimal yet positive correlation between the effect of the media and compliance with health recommendations. The association between these variables indicates that certain messages managed to reinforce the perception of protection during the pandemic, instilling a sense of security amidst the crisis. This highlights the importance of adopting a coordinated strategy between traditional media, digital social platforms, and individuals themselves in disseminating alert messages to ensure pandemic precautions are adhered to. In times of crisis, it is evident that all channels play a crucial role in societal care, particularly among university students.



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