

Seeking, scanning, and avoiding information about COVID-19 in Chile

Búsqueda, escaneo y evitación de información sobre COVID-19 en Chile

Buscar, escanear e evitar informações sobre a COVID-19 no Chile

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ABSTRACT | The SARS-CoV-2 pandemic has brought with it an information avalanche; thus, it is key to understand how people are informing themselves in this context. This study seeks to understand the patterns of information seeking, scanning or incidental exposure, and avoidance of coronavirus content in Chile, and to identify the individual characteristics that explain the three information behaviors. A survey of 3,592 people was conducted combining online (n=1,891) and telephone application (n=1,701) between September and November 2020. The data analysis included descriptive statistics and multivariate regression models. Scanning was found to be more prevalent than seeking. The preferred source for scanning was television while digital media were the most central for seeking. Age was negatively associated with scanning and seeking, and positively associated with avoidance. Women sought less than men and avoided more. People with lower educational levels scanned and sought to a lesser degree and avoided more than those with a higher education. This work shows important gaps in access to information about the pandemic by age, gender, and educational level in Chile. These findings underscore the importance of making active efforts to reach the audience segments less motivated to access to this content and they highlight the centrality of television in reaching these users.

KEYWORDS: health information; media use; risks; survey; quantitative analysis; coronavirus pandemic.

HOW TO CITE

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RESUMEN | La pandemia de SARS-CoV-2 ha traído consigo una avalancha informativa, por lo que resulta clave comprender cómo se están informando las personas en este contexto. Este estudio busca conocer los patrones de búsqueda informativa, escaneo o exposición incidental y evitación de contenidos sobre coronavirus en Chile, e identificar las características individuales que explican las tres conductas informativas. Se realizó una encuesta a 3592 personas que combinó aplicación en línea (n=1891) y telefónica (n=1701) entre septiembre y noviembre de 2020. El análisis de datos incluyó descriptivos y modelos multivariados de regresión. Se encontró que el escaneo era más prevalente que la búsqueda. La fuente preferida de escaneo fue la televisión y la de búsqueda, los medios digitales. La edad se asoció negativamente con escaneo y búsqueda y positivamente con evitación. Las mujeres buscaron menos que los hombres y evitaron en mayor medida. Las personas con menor nivel educacional escanearon y buscaron en menor grado y evitaron más que aquellas con mayor escolaridad. Este trabajo muestra importantes brechas de acceso a información acerca de la pandemia por edad, género y nivel educacional en Chile. Los hallazgos subrayan la importancia de realizar esfuerzos específicos para llegar a los segmentos menos motivados en acceder a estos contenidos y destacan la centralidad de la televisión para alcanzar a los usuarios que hacen menos esfuerzos activos.

PALABRAS CLAVE: información de salud; uso de medios; riesgos; encuesta; análisis cuantitativo; pandemia de coronavirus.

RESUMO | A pandemia de SARS-CoV-2 trouxe consigo uma avalanche informativa; e, portanto, é fundamental entender como as pessoas estão obtendo informações nesse contexto. O presente estudo visa compreender os padrões de busca de informações, escaneamento ou exposição incidental e evitação de conteúdo de coronavírus no Chile, e identificar as características individuais que explicam os três comportamentos de informação. Uma pesquisa com 3.592 pessoas foi realizada combinando aplicativo online (n= 1.891) e telefone (n=1.701) entre setembro e novembro de 2020. A análise dos dados incluiu estatística descritiva e modelos de regressão multivariada. O escaneamento foi mais prevalente do que a busca. A fonte preferida para escaneamento foi a televisão, enquanto a mídia digital foi a mais central para busca. A idade foi associada negativamente com o escaneamento e a busca, e positivamente associada com a evitação. As mulheres procuravam menos do que os homens e evitavam mais. Pessoas com menor nível educacional escanearam e procuraram em menor grau e evitaram mais do que aquelas com ensino superior. Este trabalho mostra importantes lacunas no acesso à informação sobre a pandemia por idade, gênero e escolaridade no Chile. As conclusões reforçam a importância de um esforço ativo para atingir os segmentos menos motivados a acessar esses conteúdos e destacam a centralidade da televisão no alcance desses usuários que fazem menos esforço ativo.

PALAVRAS-CHAVE: informações de saúde; uso de mídia; riscos; pesquisa; análise quantitativa; pandemia de coronavírus.

INTRODUCTION

The SARS-CoV-2 pandemic has been an enormous public health challenge for humanity, leaving more than six million deaths in just over two years. In the context of this global health crisis, communication has played a key role, as it has become necessary to reach people with the right messages and through the most effective channels to provide them with timely, scientifically validated information so that they can adopt preventive measures (Ratzan et al., 2020). Knowing how people have been informed during the pandemic is of utmost relevance to guide risk communication strategies, including those aimed at minimizing the negative effects of false information that has circulated during this crisis (Gracia & Martínez, 2020; Mora-Rodríguez & Melero-López, 2021). This paper seeks to account for the informational environment of adults in Chile in the context of the COVID-19 pandemic by exploring three informational behaviors: information seeking, scanning or incidental exposure, and information avoidance. Each of the concepts involved in this study is defined below and the guiding questions or hypotheses are presented.

Search and scanning

There are two complementary concepts that have been developed to study access to health information. On the one hand, searching refers to active efforts to acquire information regarding a health topic of interest (Niederdeppe et al., 2007). On the other hand, scanning or incidental exposure describes the acquisition of information that occurs in the context of natural, everyday consumption of messages, without making specific efforts to obtain them, but paying enough attention to them to leave a record of this exposure in memory (Niederdeppe et al., 2007).

Both informational behaviors, searching and scanning, are considered precursors of individuals' health decisions (Shim et al., 2006). Searching has been linked to physical activity practice and fruit and vegetable consumption (Colón-Ramos et al., 2015; Lewis et al., 2012; Ramírez et al., 2013), and to cancer screening behaviors (Lee et al., 2016; Shim et al., 2006). Scanning has been less studied than searching, despite being more prevalent (Hornik et al., 2013). However, empirical studies have shown associations between scanning and preventive practices, such as fruit and vegetable consumption and physical activity (Biggsby & Hovick, 2018), as well as with the likelihood of having early cancer screening (Hornik et al., 2013; Shim et al., 2006). At the same time, scanning negative information regarding vaccines has been associated with anti-inoculation beliefs (Moran et al., 2016) and scanning positive information about tobacco is associated with its use (Liu et al., 2020; Zhu, 2017).

Individuals may scan and search for information from a variety of sources (Anker et al., 2011; Niederdeppe et al., 2007), even though recent studies show that searching takes place mostly through the Internet (Halpern et al., 2015; Huerta et al., 2016) compared to other media or platforms. Regarding scanning, this is expected to occur through multiple channels, either mediated or interpersonal, but empirical explorations of this informational behavior are more limited.

In the pandemic context, the volume of health information has increased considerably, which would be conducive to a very high level of information scanning. At the same time, the uncertainty that has characterized this public health crisis could fuel search practices as a way to reduce uncertainty through obtaining more information (Brashers, 2001). The first two questions in this study point to the prevalence of both informational behaviors and the preferred sources in each case.

RQ1. (a) How common is the practice of seeking information about COVID-19? and (b) What are the sources through which people report seeking information?

RQ2. (a) How common is the scanning of COVID-19 information? and (b) What are the sources through which people report scanning information?

Several studies have explored the factors that explain the acquisition of information via scanning, but above all via searching. Educational level has been found to have a large impact on information searching and scanning behaviors, both in the prevalence of these information behaviors (Shim et al., 2006) and in the diversity of sources used (Ramanadhan & Viswanath, 2006; Viswanath & Ackerson, 2011). For example, it has been found that people from more disadvantaged groups are less likely to seek health information on the Internet (Shim, 2008). Meanwhile, women, older people, and those with higher education and income tend to scan for cancer information to a greater extent (Kelly et al., 2010). The same trend has been found for information seeking (Rutten et al., 2006), but studies on scanning and information searching on other health topics are scarce. A previous study in Chile about general health information search through the Internet showed no differences by socioeconomic level; however, this has the limitation of being a convenience sample obtained through an online panel (Halpern et al., 2015). In the context of the coronavirus pandemic, a study in the United States showed that women, people with higher educational level and young people searched more through all sources (Ali et al., 2020). No international studies have been found that account for trends regarding scanning, nor is there clarity about the factors

that could be associated with searching in the Chilean context, so we pose the following research question:

RQ3. Which sociodemographic factors are associated (a) with COVID-19 information seeking and which (b) with scanning?

Avoidance

Avoidance is a behavior through which people make efforts not to expose themselves to certain content (Sweeny et al., 2010); it is considered a mechanism for dealing with the uncertainty that comes with a health threat and is opposed to search insofar as, while the latter aims to reduce uncertainty, the objective of avoidance is to maintain it (Barbour et al., 2012; Brashers, 2001; Chae, 2016). Avoidance is not only absence of search, as it also involves evading information that would come through scanning (Barbour et al., 2012; Chae et al., 2020). Studies in the context of cancer communication have shown that fear of the disease is associated with high levels of information avoidance regarding it (Chae, 2015).

In the coronavirus pandemic, it is possible that those who avoid information are uninformed about its evolution and are unaware of the recommended measures to prevent infection. Meanwhile, the context of uncertainty and information overload that occurs in the pandemic may favor information avoidance (Soroya et al., 2021). Knowing the prevalence of avoidance is important for designing communication strategies to keep people alert to this public health threat and to ensure that key messages are reaching individuals, so we pose the following research question:

RQ4. How common is COVID-19 information avoidance in Chile?

Few studies have explored sociodemographic factors that would be linked to information avoidance. A study on cancer communication in a U.S. sample found that men reported higher levels of avoidance than women, while age, educational level, and education were not associated with avoidance (Chae et al., 2020). In a sample also from the United States, it was shown that the higher the income level, the lower the levels of cancer information avoidance (Chae, 2016). However, there are no studies in the context of the COVID-19 pandemic or in Chile that shed light on the sociodemographic factors that would be associated with avoidance. In this context, we pose the following question:

RQ5. What sociodemographic factors are linked to COVID-19 information avoidance?

Risk perception

Risk perception is a cognitive process that accounts for how individuals assess the severity of a threat and the probability that it will affect them directly (Strecher & Rosenstock, 1997). Risk perception is a rational response and is therefore distinct from fear, which is an emotional response to threat (Witte, 1992). In the context of health communication, risk perception has been operationalized, following the precepts of the health belief model, as severity perception and susceptibility perception (Freimuth & Hovick, 2012; Leppin & Aro, 2009).

Several conceptual models propose that the risk perception of a health threat would be a motivator of search. For example, the planned model of risk information seeking (Kahlor, 2010) states that risk perception would be a determinant of information seeking behavior. In the context of cancer communication, risk perception has been found to be positively associated with information seeking about the disease (Chae, 2015). It is less clear whether risk perception would be associated with higher levels of exposure by scanning, because scanning is not fully active as is searching. However, greater awareness of risk to the COVID-19 threat could impact the decision to place oneself in a more information-rich environment (Chae, 2015). Along these lines, we hypothesize the following:

H1. There will be a positive association between risk perception and (a) searching for and (b) scanning COVID-19 information.

Regarding avoidance, it is important to determine how risk perception affects this behavior. Following the literature on fear appeals as persuasive tools, individuals exposed to messages that increase their perception of risk to a health threat and who, at the same time, do not find efficacy components in the messages that allow them to cope with the threat, exhibit maladaptive responses to the messages, one of which is avoidance (Witte, 1992). However, such models are intended to understand how specific messages affect people's responses and may not apply to natural information exposure contexts. Therefore, we pose the following question:

RQ6. What is the relationship between risk perception and information avoidance?

METHOD

Data collection procedure

This study is part of a research study on access to and use of information on coronavirus in Chile. The sample was probabilistic, stratified by geographic macrozone (N=3592); recruitment and fieldwork were conducted by the Feedback public opinion research company between September and November 2020 and two complementary data collection techniques were used: an online survey using the Computer Aided Web Interviewing (CAWI, n=1891) system and a telephone survey with the Computer Assisted Telephones Interviewing (CATI, n=1701) system. The online (n=23) and telephone (n=25) questionnaires were pilot tested to assess their length and response rate.

For the CAWI survey, the contact base consisted of 2,307,295 e-mails. Of these, 784,044 records were randomly selected and invitations were sent to them, achieving effective contact with 50,367 for a total of 1,891 surveys, with an average application time of 16 minutes. For the CATI survey, the contact base was composed of 3,493,599 records, of which 92,357 were randomly selected, achieving a total of 15,728 effective calls that allowed 1,701 surveys to be carried out with an average application time of 20 minutes. Before answering the survey, participants signed an informed consent form approved by the ethics committee of the university responsible for the study.

While the response rates of both surveys are low considering the total contacts made, these numbers are consistent with international surveys using remote methodologies (Weinberg et al., 2014). Compared to the Chilean population, the study sample is composed of more women, middle-aged people (between 34 and 64 years old), and with a higher socioeconomic level. Considering the representativeness limitations that each of the data collection methodologies has, we generated a post-stratified weighting using data from the 2017 National Census in order to adjust for the over -or under- representation of certain social segments in the sample.

Study variables

Scanning. Participants were asked whether they had come across information about COVID-19 in the past 30 days from any source, without intentionally searching for it. In order to distinguish this type of exposure from active searching, we provided the following introduction to the question, “Some people actively seek information about COVID-19, e.g., by asking questions or actively searching, while other times they simply hear or come across, unintentionally, this information” (Hornik et al., 2013; Peña-y-Lillo, 2016). The response options were yes and no. Those who answered yes were asked how often they had accessed

information about COVID-19 through conversations with family members, with friends or co-workers, television, radio, social networks (Facebook, Instagram, Twitter and WhatsApp), and the Internet. Response options were between 1 = never and 6 = several times a day. For the multivariate models, a scanning index was generated from the mean of the six items above with excellent internal consistency ($\alpha=.90$).

Search. Participants were asked whether they had actively searched for information on COVID-19 in the last 30 days, with possible yes and no responses, following the model of the Health Information National Trends Survey (HINTS; Rutten et al., 2006). Those who answered yes were asked which was the first source they turned to. The participants had to provide only one answer, among whose options were: social networks, Ministry of Health website, health center, family, friends or coworkers, physician or health personnel, Internet (Google), the dedicated telephone information number *Salud Responde*, complementary, alternative, or nonconventional medicine therapists, social organizations, and other sources.

Information avoidance. Participants were asked, using a four-point Likert scale with response options between strongly disagree and strongly agree their degree of agreement with five statements derived from items previously used to measure cancer information avoidance (Chae et al., 2020; Miles et al., 2008) and adapted to the COVID19 context with items such as “I avoid reading things about COVID-19” and “I do not want more information about COVID-19”. A confirmatory factor analysis was performed to test the structure of this scale and the model was found to be a good fit (Hu & Bentler, 1999), $\chi^2(5)=12.56$, $p=.028$, RMSEA=.02; 90% CI [.01, .04], CFI=.99, TLI=.99, SRMR=.006; furthermore, the internal consistency of the scale was excellent ($\alpha=.85$).

Risk perception. To measure this construct, we adapted the Krieger and Sarge (2013) items to the context of COVID-19. For severity, we asked the degree of agreement with the following statements, “COVID-19 is a serious threat to my quality of life” and “COVID-19 is a serious threat to my health”. For susceptibility, the statements were “I am at risk of getting COVID-19” and “The probability that I will get COVID-19 is high”. The response options were on a scale between 1 = Strongly disagree and 4 = Strongly agree. The factor structure of the measurement with two latent variables of two indicators each fitted correctly (Hu & Bentler, 1999) $\chi^2(1)=1.29$, $p=.256$, RMSEA=.009; 90% CI [.00, .05], CFI=1.00, TLI=1.00, SRMR=.002, and the internal consistency of both scales was good ($\alpha=.76$ and $\alpha=.74$, respectively).

Sociodemographics. Participants were asked their age, gender, region of residence, employment status, educational level, healthcare system to which they were affiliated, and presence of chronic disease. Region of residence was coded as 1 for residents of the Metropolitan Region of Santiago and 0 for residents of other regions of Chile. Employment status was coded in order to compare those who had a job with those who did not. In the case of health insurance, those affiliated to the National Health Fund (Fonasa, public insurance) were compared with those who had private or other insurance. For chronic diseases, we asked whether they had been diagnosed by a doctor or other health professional with diabetes, high blood pressure, obesity or another chronic disease affecting their immune system and created a variable in which those who answered yes to any of the four categories above were coded with 1 and those who answered no to all were coded with 0. For educational level, the response options were presented in 10 categories with no formal education being the lowest and postgraduate (postgraduate as diploma, master's degree, doctorate), the highest. The responses were grouped into four categories: incomplete secondary education or less, complete secondary education, incomplete technical or university higher education, and complete university education or more.

Analysis procedure

To answer RQ1, we performed a descriptive analysis of the weighted data for the search and first search source variables. To answer RQ2, the same analysis was performed for the variable scanning and scanning by source. To answer RQ3(a) and H1(a), we performed a logistic regression model with the dichotomous variable information search as the dependent variable and the sociodemographic variables and risk perception as independent variables. For RQ3(b) and H1(b) we conducted a linear regression model with the scanning index as the dependent variable with the same predictors as the previous model. To answer RQ4, we dichotomized the items of the avoidance scale to account for prevalence in each case; responses 3 = Somewhat agree and 4 = Strongly agree were considered as indicators of having avoided. For RQ5 and RQ6, we used a linear regression model with the avoidance index as the dependent variable and the sociodemographic and risk perception variables as independent variables.

RESULTS

Table 1 shows a characterization of the sample for all the variables involved in this study. For RQ1, which addressed the prevalence of information seeking, 39.6% of those consulted said they had sought information on COVID-19 in the last 30 days. Of the group that searched, 32.2% said they did so several times

a week and 21% once a day or more. Overall, more than half of those who had searched did so several times a week or more. The first most common search source was the Internet (Google), with 53.8% of mentions. This was followed by the Ministry of Health website (15.7%), and social networks (12.2%). For RQ2, regarding the prevalence of scanning, 89.4% of the participants said they had come across information on COVID-19 in the last 30 days. The most recurrent source of scanning was television, which 74.8% reported having scanned several times a week or more. Some 68.9% scanned the Internet several times a week or more and 67.6% scanned social networks.

Table 2 presents the estimates of the regression models used to determine the factors linked to the three information behaviors. For RQ3, which addressed the determinants of searching and scanning, women searched for information on COVID-19 to a lesser extent than men, but there were no gender differences in scanning. Age was negatively associated with both searching and scanning for information, such that the older the age, the lower the report of both information behaviors. Having a job was positively associated with scanning for COVID-19 information, but not with searching. People with incomplete high school education or less reported lower levels of scanning than people with higher educational levels (figure 2). People with incomplete high school education or less also showed lower levels of scanning than those with some higher education, either complete or incomplete (figure 1), but did not differ significantly in searching from the group with complete high school education. Region of residence, living with a chronic health condition or having public health insurance had no impact on levels of searching or scanning for COVID-19 information.

Regarding RQ4, about the prevalence of information avoidance, 47% of respondents avoided watching TV programs, 34% avoided reading about the subject, and 33.5% avoided conversations. Some 40.4% said they preferred not to think about COVID-19 and 27.7% said they no longer wanted information about the pandemic. In response to RQ5, women reported higher levels of avoidance than men. Residents of the Metropolitan region reported lower levels of avoidance compared to residents of other regions of the country. People using public health insurance reported higher levels of information avoidance than people with other types of health insurance, and people with the lowest educational level -i.e., with incomplete secondary education or less- reported higher levels of information avoidance compared to people with all other educational levels (Figure 3).

	N (%)
Survey type	
By phone	1701 (47.4)
On line	1891 (52.6)
Gender	
Woman	2101 (58.5)
Men	1491 (41.5)
Region	
Metropolitan	1295 (36.1)
Other regions	2297 (63.9)
Employment status (working)	2393 (66.6)
Healthcare (Fonasa)	2105 (58.6)
Educational level	
Incomplete secondary education or less	434 (12.3)
Secondary education complete	684 (19.0)
Technical or higher education incomplete	1012 (28.2)
Higher education complete or more	1386 (38.6)
Has a chronic health condition	1964 (54.7)
Has searched for information	1370 (38.1)
	M(SD)
Age	47.15 (14.82)
Risk perception	
Severity	3.44 (.78)
Susceptibility	3.00 (.90)
Scanning	4.07 (.99)
Avoidance	2.10 (.90)

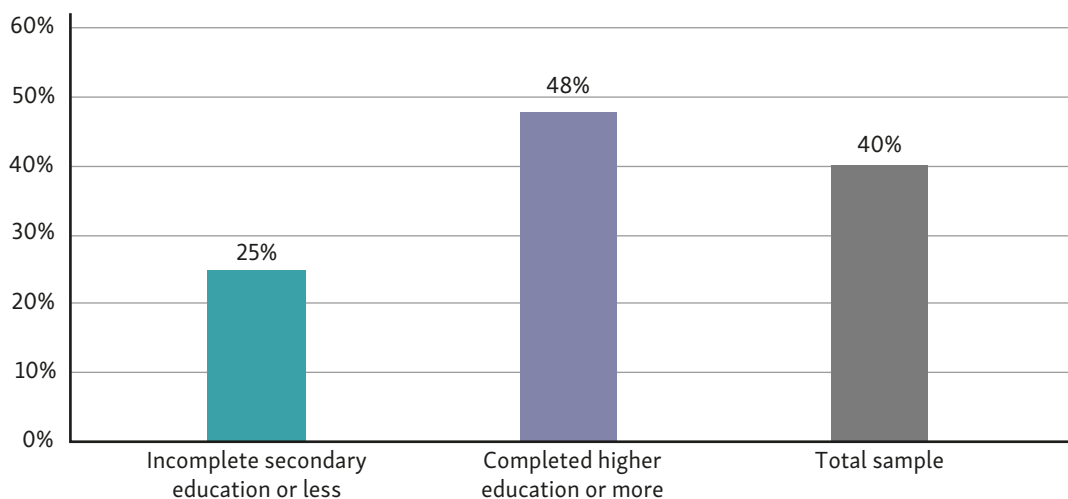
Table 1. Descriptive statistics for the sample*Source: Own elaboration.*

	Search		Scanning		Avoidance	
	B	SE	B	SE	B	SE
Gender (woman)	-.395***	.074	-.045	,067	,142***	,031
Age	-.014***	.002	-.016***	,002	,002*	,001
Resident of the Metropolitan Region	-.010	.075	-.075	,065	-,105***	,037
Has a chronic health condition	.025	.077	.038	,067	-,024	,032
Employment status (working)	.160	.084	.317***	,03	,052	,035
Healthcare (Fonasa)	-.015	.080	.078	,070	,070*	,034
Secondary education complete	.276	.147	.656***	,121	-,284***	,059
Technical or higher education incomplete	.485***	.141	.670***	,117	-,350***	,056
Higher education complete or more	.845***	.139	.772***	,115	-,499***	,056
Severity	.194***	.056	.143**	,047	-,178***	,023
Susceptibility	.075	.047	.139***	,041	-,030	,020
Survey tipe: by phone	.085	.077	.061	,07	-,151***	,032

Note. SE = standard error * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$.

Table 2. Regression models for information search, scanning, and avoidance

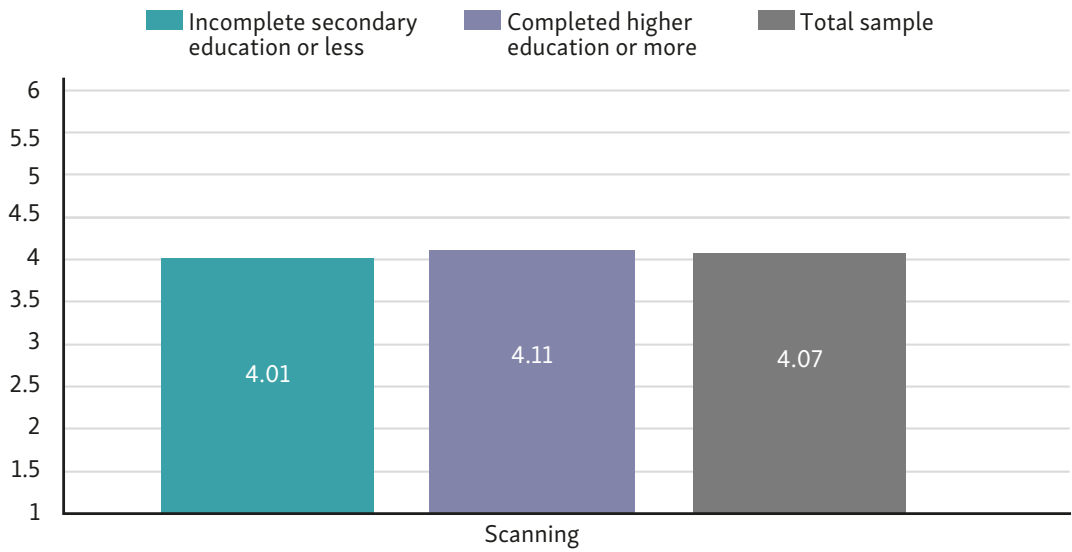
Source: Own elaboration.



Note: The figure shows the percentages of participants who answered “yes” to the question about whether they had searched for information about COVID-19 in the last 30 days.

Figure 1. Search for information on COVID-19 by educational level

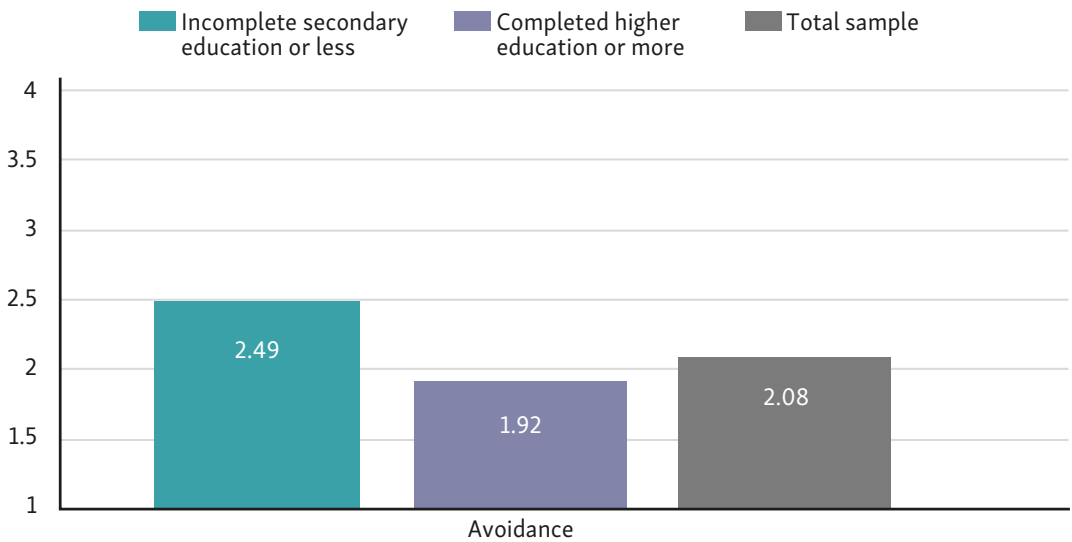
Source: Own elaboration.



Note. The figure shows the mean of the scanning variable measured on a scale of 1 to 6.

Figure 2. Scanning of COVID-19 information by educational level

Source: Own elaboration.



Note: The figure shows the mean of the avoidance variable measured on a scale of 1 to 4.

Figure 3. Avoidance of COVID-19 information by educational level

Source: Own elaboration.

H1 was partially supported. Perception of severity with regarding COVID-19 was positively associated with both information searching and scanning. Perceived susceptibility was positively associated only with scanning, but not with searching.

Finally, regarding RQ6, perceived severity was negatively related to avoidance, whereas there was no connection between avoidance and perceived susceptibility.

DISCUSSION

This study sought to account for three informational behaviors in the Chilean population in the context of the coronavirus pandemic: information search, scanning, and avoidance. The results are consistent with international evidence that scanning is more prevalent than searching (Kelly et al., 2010). The data show that, in the pandemic context, digital channels have been key for searching and television for scanning. Among those who searched, more than 80% chose to do so through a digital source, which aligns with international trends revealing that people increasingly prefer these channels (Prestin et al., 2015; Zhang et al., 2020). The centrality of digital channels may also explain the gaps found by age and educational level in information seeking.

The gaps in access to information on COVID-19 between people with higher and lower educational levels are this study's most relevant finding. People with lower educational levels not only presented lower levels of searching-which is consistent with international evidence (Fareed et al., 2021)-but also reported lower levels of informational scanning. This result shows that people in disadvantaged positions in society tend to make fewer active efforts to obtain information, perhaps due to lack of time, interest or even lacking the digital skills to access this content. Likewise, people in more disadvantaged positions are also situated in information environments poor in COVID-19 content, which is demonstrated by the lower level of scanning they report. The lower levels of scanning can be explained by low motivation, but also by having a more overloaded daily schedule due to work and other domestic responsibilities that put informational acquisition on a secondary plane.

The groups with less education, in turn, present higher levels of avoidance, which shows that people in this segment make active efforts to avoid information in the context of the pandemic. This may be because people with lower educational levels have fewer tools to process data in a context of an overabundance of confusing and contradictory information (Aleixandre-Benavent et al., 2020; Costa-Sánchez & López-García, 2020; Mohammed et al., 2021). For example, a study among Latina women in the United States showed that the excess of information about nutrition and food in their environment made them experience information overload (Ramírez & Arellano Carmona, 2018), which is a predictor of information avoidance (Chae, 2016). Research at the international level shows

that the journalistic coverage of the pandemic, especially in its early stages, was characterized by alarmism and sensationalism (Costa-Sánchez & López-García, 2020), which could also motivate the avoidance of these contents. Additionally, it should be considered that the lower income sectors in Chile were the hardest hit by the pandemic in terms of number of infections and deaths (Mena et al., 2021), so it is possible that avoidance in these segments is a way to protect themselves from content that can damage mental health or open wounds from recent losses or bad experiences with the disease.

That women seek information about COVID-19 less frequently than men runs counter to what previous studies have found in the context of cancer communication (Kelly et al., 2010), but could be due to particularities of the pandemic context, such as that women have had to cope to a greater extent with caregiving responsibilities in the face of school closures (Jara et al., 2021). These same reasons could explain why they tend to avoid information more than men.

Regarding risk perception, consistent with theoretical models on informational search (Griffin et al., 1999; Kahlor, 2010; Yang et al., 2014), this study shows that perception of COVID-19 as a serious threat is positively associated with searching and scanning. Those with higher risk perception furthermore avoid information less. This finding shows that risk perception does not cause mental overload that could lead to avoidance, but instead motivates informational exposure (Chae, 2015). This study has important theoretical and practical implications. First, the results extend the predictions of information acquisition models to a context other than the one in which they are traditionally tested, in the global North and in cancer communication, and apply them to the context of the coronavirus pandemic in a Latin American country. Secondly, they confirm the existence of gaps by age, gender, and educational level in COVID-19 information behaviors that should be taken into account, especially considering that it is the most disadvantaged segments of the population that have been most affected by this crisis. In this regard, it is essential that communication strategies to address health crises of this nature address disparities in access to and use of information, since these gaps can result in inequalities in the adoption of preventive measures and, therefore, in the likelihood of becoming ill.

From a practical standpoint, the findings of this research provide elements to generate risk communication strategies. Inequalities by gender, age, and educational level show that additional efforts should be made to reach groups that are not only less exposed to the messages, but also make active efforts to avoid them. Campaigns to inform the population and promote the practice of preventive behaviors should consider these gaps and thus tend to draw attention

to all the information circulating and not focus on negative aspects that could favor more information avoidance. In that vein, persuasive strategies such as the use of narratives could be more successful than an abundance of factual information (Murphy et al., 2015). Following the findings of this study, messages alluding to the pandemic should be oriented to increase or maintain the perception of risk, considering that this is a motivation to acquire information and, at the same time, protects from information avoidance.

This study has some limitations that are worth explaining. In the first place, caution should be exercised when generalizing the results to the Chilean national reality, since, despite the efforts to recruit a diverse sample, there is an overrepresentation of women, middle-aged segments, and people with a higher educational level. The use of weights in the analysis seeks precisely to attenuate the effect of this overrepresentation. Secondly, this work is descriptive and exploratory in nature, as it sought to determine the distribution of informative behaviors in the population during the coronavirus pandemic in Chile and to examine which social and demographic factors were associated with each of them. Future studies could go beyond the description and address how these informative behaviors affect the practice of preventive behaviors. Likewise, and considering the context of infodemia that has marked the coronavirus crisis (Aleixandre-Benavent et al., 2020), future studies could delve into other informative behaviors, such as the information checking practices so necessary in situations where fake news abounds, especially in digital spaces (López-García et al., 2021; Salaverría et al., 2020).

Despite its limitations, this study is a first approximation to informational behaviors in the context of the pandemic in Chile. The findings of this work underscore the importance of monitoring these behaviors in health crisis contexts and using these inputs in the generation of communication strategies to maximize the positive effects of these efforts in all segments of the population, especially in the most disadvantaged groups.

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REFERENCES

- Aleixandre-Benavent, R., Castelló-Cogollos, L., & Valderrama-Zurián, J.-C. (2020). Información y comunicación durante los primeros meses de Covid-19. Infodemia, desinformación y papel de los profesionales de la información (Information and communication during the early months of Covid-19: infodemics, misinformation, and the role of information professionals). *Profesional de la Información*, 29(4). <https://doi.org/https://doi.org/10.3145/epi.2020.jul.08>
- Ali, S. H., Foreman, J., Tozan, Y., Capasso, A., Jones, A. M., & DiClemente, R. J. (2020). Trends and Predictors of COVID-19 Information Sources and Their Relationship with Knowledge and Beliefs Related to the Pandemic: Nationwide Cross-Sectional Study. *JMIR Public Health and Surveillance*, 6(4), e21071. <https://doi.org/10.2196/21071>
- Anker, A. E., Reinhart, A. M., & Feeley, T. H. (2011). Health information seeking: A review of measures and methods. *Patient Education and Counseling*, 82(3), 346-354. <https://doi.org/10.1016/j.pec.2010.12.008>
- Barbour, J. B., Rintamaki, L. S., Ramsey, J. A., & Brashers, D. E. (2012). Avoiding Health Information. *Journal of Health Communication*, 17(2), 212-229. <https://doi.org/10.1080/10810730.2011.585691>
- Bigsby, E. & Hovick, S. R. (2018). Understanding Associations between Information Seeking and Scanning and Health Risk Behaviors: An Early Test of the Structural Influence Model. *Health Communication*, 33(3), 315-325. <https://doi.org/10.1080/10410236.2016.1266575>
- Brashers, D. E. (2001). Communication and Uncertainty Management. *Journal of Communication*, 51(3), 477-497. <https://doi.org/10.1111/j.1460-2466.2001.tb02892.x>
- Chae, J. (2015). A Three-Factor Cancer-Related Mental Condition Model and Its Relationship with Cancer Information Use, Cancer Information Avoidance, and Screening Intention. *Journal of Health Communication*, 20(10), 1133-1142. <https://doi.org/10.1080/10810730.2015.1018633>
- Chae, J. (2016). Who Avoids Cancer Information? Examining a Psychological Process Leading to Cancer Information Avoidance. *Journal of Health Communication*, 21(7), 837-844. <https://doi.org/10.1080/10810730.2016.1177144>
- Chae, J., Lee, C.-J., & Kim, K. (2020). Prevalence, Predictors, and Psychosocial Mechanism of Cancer Information Avoidance: Findings from a National Survey of U.S. Adults. *Health Communication*, 35(3), 322-330. <https://doi.org/10.1080/10410236.2018.1563028>
- Colón-Ramos, U., Finney Rutten, L. J., Moser, R. P., Colón-Lopez, V., Ortiz, A. P., & Yaroch, A. L. (2015). The Association Between Fruit and Vegetable Intake, Knowledge of the Recommendations, and Health Information Seeking Within Adults in the U.S. Mainland and in Puerto Rico. *Journal of Health Communication*, 20(1), 105-111. <https://doi.org/10.1080/10810730.2014.914607>
- Costa-Sánchez, C. & López-García, X. (2020). Comunicación y crisis del coronavirus en España. Primeras lecciones (Communication and coronavirus crisis in Spain. First lessons). *Profesional de la Información*, 29(3). <https://doi.org/https://doi.org/10.3145/epi.2020.may.04>
- Fareed, N., Jonnalagadda, P., Swoboda, C. M., Samineni, P., Griesenbrock, T., & Huerta, T. (2021). Socioeconomic Factors Influence Health Information Seeking and Trust Over Time: Evidence From a Cross-Sectional, Pooled Analyses of HINTS Data. *American Journal of Health Promotion*, 35(8), 1084-1094. <https://doi.org/10.1177/08901171211018135>

- Freimuth, V. S. & Hovick, S. R. (2012). Cognitive and Emotional Health Risk Perceptions Among People Living in Poverty. *Journal of Health Communication, 17*(3), 303-318. <https://doi.org/10.1080/10810730.2011.626505>
- Gracia, A. D. V. & Martínez, V. C. (2020). Bulos durante la pandemia del COVID-19 en España: un estudio a través de Google Trends (Fake news during the COVID-19 pandemic in Spain: a study through Google Trends). *Revista Latina de Comunicación Social, (78)*, 169-182. <https://doi.org/10.4185/RLCS-2020-1473>
- Griffin, R. J., Dunwoody, S., & Neuwirth, K. (1999). Proposed Model of the Relationship of Risk Information Seeking and Processing to the Development of Preventive Behaviors. *Environmental Research, 80*(2), S230-S245. <https://doi.org/10.1006/enrs.1998.3940>
- Halpern, D., Peña-y-Lillo, M., Goic, F., Reinoso-Aguiló, A., Figueroa-Zepeda, C., & Troncoso-Leiva, A. (2015). Autodiagnóstico y búsqueda de información médica online: el caso chileno (Self-diagnosis and online health information seekers: the Chilean case). *Profesional de la Información, 24*(5), 621-629. <https://doi.org/10.3145/epi.2015.sep.10>
- Hornik, R., Parvanta, S., Mello, S., Freres, D., Kelly, B., & Schwartz, J. S. (2013). Effects of Scanning (Routine Health Information Exposure) on Cancer Screening and Prevention Behaviors in the General Population. *Journal of Health Communication, 18*(12), 1422-1435. <https://doi.org/10.1080/10810730.2013.798381>
- Hu, L. t. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huerta, T. R., Walker, D. M., Johnson, T., & Ford, E. W. (2016). A Time Series Analysis of Cancer-Related Information Seeking: Hints from the Health Information National Trends Survey (HINTS) 2003–2014. *Journal of Health Communication, 21*(9), 1031-1038. <https://doi.org/10.1080/10810730.2016.1204381>
- Jara, M.-F., Leyton, B., Cuevas, C., & Galvez Espinoza, P. (2021). Women's perceptions about changes in food-related behaviors at home during COVID-19 pandemic in Chile. *Public Health Nutrition, 24*(14), 1-26. <https://doi.org/10.1017/S1368980021002639>
- Kahlor, L. (2010). PRISM: A Planned Risk Information Seeking Model. *Health Communication, 25*(4), 345-356. <https://doi.org/10.1080/10410231003775172>
- Kelly, B., Hornik, R., Romantan, A., Schwartz, J. S., Armstrong, K., DeMichele, A., Fishbein, M., Gray, S., Hull, S., Kim, A., Nagler, R., Niederdeppe, J., Ramírez, A. S., Smith-McLallen, A., & Wong, N. (2010). Cancer Information Scanning and Seeking in the General Population. *Journal of Health Communication, 15*(7), 734-753. <https://doi.org/10.1080/10810730.2010.514029>
- Krieger, J. L. & Sarge, M. A. (2013). A Serial Mediation Model of Message Framing on Intentions to Receive the Human Papillomavirus (HPV) Vaccine: Revisiting the Role of Threat and Efficacy Perceptions. *Health Communication, 28*(1), 5-19. <https://doi.org/10.1080/10410236.2012.734914>
- Lee, C.-J., Zhao, X., & Pena-y-Lillo, M. (2016). Theorizing the Pathways from Seeking and Scanning to Mammography Screening. *Health Communication, 31*(1), 117-128. <https://doi.org/10.1080/10410236.2014.942769>

- Leppin, A. & Aro, A. R. (2009). Risk Perceptions Related to SARS and Avian Influenza: Theoretical Foundations of Current Empirical Research. *International Journal of Behavioral Medicine*, 16, 7-29. <https://doi.org/10.1007/s12529-008-9002-8>
- Lewis, N., Martinez, L. S., Freres, D. R., Schwartz, J. S., Armstrong, K., Gray, S. W., Frazee, T., Nagler, R. H., Bourgoin, A., & Hornik, R. C. (2012). Seeking Cancer-Related Information From Media and Family/Friends Increases Fruit and Vegetable Consumption Among Cancer Patients. *Health Communication*, 27(4), 380-388. <https://doi.org/10.1080/10410236.2011.586990>
- Liu, J., Lochbuehler, K., Yang, Q., Gibson, L. A., & Hornik, R. C. (2020). Breadth of Media Scanning Leads to Vaping Among Youth and Young Adults: Evidence of Direct and Indirect Pathways from a National Longitudinal Survey. *Journal of Health Communication*, 25(2), 91-104. <https://doi.org/10.1080/10810730.2019.1709925>
- López-García, X., Costa-Sánchez, C., & Vizoso, Á. (2021). Journalistic Fact-Checking of Information in Pandemic: Stakeholders, Hoaxes, and Strategies to Fight Disinformation during the COVID-19 Crisis in Spain. *International Journal of Environmental Research and Public Health*, 18(3), 1227. <https://www.mdpi.com/1660-4601/18/3/1227>
- Mena, G. E., Martinez, P. P., Mahmud, A. S., Marquet, P. A., Buckee, C. O., & Santillana, M. (2021). Socioeconomic status determines COVID-19 incidence and related mortality in Santiago, Chile. *Science*, 372(6545), eabg5298. <https://doi.org/10.1126/science.abg5298>
- Miles, A., Voorwinden, S., Chapman, S., & Wardle, J. (2008). Psychologic Predictors of Cancer Information Avoidance Among Older Adults: The Role of Cancer Fear and Fatalism. *Cancer Epidemiology Biomarkers & Prevention*, 17(8), 1872-1879. <https://doi.org/10.1158/1055-9965.Epi-08-0074>
- Mohammed, M., Sha'aban, A., Jatau, A. I., Yunusa, I., Isa, A. M., Wada, A. S., Obamiro, K., Zainal, H., & Ibrahim, B. (2021). Assessment of COVID-19 Information Overload Among the General Public. *Journal of Racial and Ethnic Health Disparities*, 9, 184-192. <https://doi.org/10.1007/s40615-020-00942-0>
- Mora-Rodríguez, A. & Melero-López, I. (2021). Seguimiento informativo y percepción del riesgo ante el Covid-19 en España (News consumption and risk perception of Covid-19 in Spain). *Comunicar*, 66, 71-81. <https://doi.org/10.3916/C66-2021-06>
- Moran, M. B., Frank, L. B., Chatterjee, J. S., Murphy, S. T., & Baezconde-Garbanati, L. (2016). Information scanning and vaccine safety concerns among African American, Mexican American, and non-Hispanic White women. *Patient Education and Counseling*, 99(1), 147-153. <https://doi.org/10.1016/j.pec.2015.08.016>
- Murphy, S. T., Frank, L. B., Chatterjee, J. S., Moran, M. B., Zhao, N., Herrera, P. A. d., & Baezconde-Garbanati, L. A. (2015). Comparing the Relative Efficacy of Narrative vs Nonnarrative Health Messages in Reducing Health Disparities Using a Randomized Trial. *American Journal of Public Health*, 105(10), 2117-2123. <https://doi.org/10.2105/ajph.2014.302332>
- Niederdeppe, J., Hornik, R. C., Kelly, B. J., Frosch, D. L., Romantan, A., Stevens, R. S., Barg, F. K., Weiner, J. L., & Schwartz, J. S. (2007). Examining the Dimensions of Cancer-Related Information Seeking and Scanning Behavior. *Health Communication*, 22(2), 153-167. <https://doi.org/10.1080/10410230701454189>

- Peña-y-Lillo, M. (2016). Hábitos de Búsqueda y Escaneo de Información sobre Salud en Adultos Chilenos (Habits of Seeking and Scanning Health Information in Chilean Adults). *Revista de Comunicación y Salud*, 6, 29-42. [https://doi.org/10.35669/revistadecomunicacionysalud.2016.6\(1\).29-42](https://doi.org/10.35669/revistadecomunicacionysalud.2016.6(1).29-42)
- Prestin, A., Vieux, S. N., & Chou, W.-y. S. (2015). Is Online Health Activity Alive and Well or Flatlining? Findings from 10 years of the Health Information National Trends Survey. *Journal of Health Communication*, 20(7), 790-798. <https://doi.org/10.1080/10810730.2015.1018590>
- Ramanadhan, S. & Viswanath, K. (2006). Health and the Information Nonseeker: A Profile. *Health Communication*, 20(2), 131-139. https://doi.org/10.1207/s15327027hc2002_4
- Ramírez, A. S. & Arellano Carmona, K. (2018). Beyond fatalism: Information overload as a mechanism to understand health disparities. *Social Science & Medicine*, 219, 11-18. <https://doi.org/10.1016/j.socscimed.2018.10.006>
- Ramírez, A. S., Freres, D., Martínez, L. S., Lewis, N., Bourgoin, A., Kelly, B. J., Lee, C.-J., Nagler, R., Schwartz, J. S., & Hornik, R. C. (2013). Information Seeking From Media and Family/Friends Increases the Likelihood of Engaging in Healthy Lifestyle Behaviors. *Journal of Health Communication*, 18(5), 527-542. <https://doi.org/10.1080/10810730.2012.743632>
- Ratzan, S. C., Gostin, L. O., Meshkati, N., Rabin, K., & Parker, R. M. (2020). COVID-19: An Urgent Call for Coordinated, Trusted Sources to Tell Everyone What They Need to Know and Do. *Journal of Health Communication*, 25(10), 747-749. <https://doi.org/10.1080/10810730.2020.1894015>
- Rutten, L. J. F., Squiers, L., & Hesse, B. (2006). Cancer-Related Information Seeking: Hints From the 2003 Health Information National Trends Survey (HINTS). *Journal of Health Communication*, 11(sup001), 147-156. <https://doi.org/10.1080/10810730600637574>
- Salaverría, R., Buslón, N., López-Pan, F., León, B., López-Goñi, I., & Erviti, M.-C. (2020). Desinformación en tiempos de pandemia: tipología de los bulos sobre la Covid-19 (Disinformation in times of pandemic: typology of hoaxes on Covid-19). *Profesional de la Información*, 29(3). <https://doi.org/https://doi.org/10.3145/epi.2020.may.15>
- Shim, M. (2008). Connecting Internet Use with Gaps in Cancer Knowledge. *Health Communication*, 23(5), 448-461. <https://doi.org/10.1080/10410230802342143>
- Shim, M., Kelly, B., & Hornik, R. (2006). Cancer Information Scanning and Seeking Behavior is Associated with Knowledge, Lifestyle Choices, and Screening. *Journal of Health Communication*, 11(sup001), 157-172. <https://doi.org/10.1080/10810730600637475>
- Soroya, S. H., Farooq, A., Mahmood, K., Isoaho, J., & Zara, S.-e. (2021). From information seeking to information avoidance: Understanding the health information behavior during a global health crisis. *Information Processing & Management*, 58(2), 102440. <https://doi.org/https://doi.org/10.1016/j.ipm.2020.102440>
- Strecher, V. J. & Rosenstock, I. M. (1997). *The Health Belief Model* (Vol. 113). Jossey-Bass.
- Sweeny, K., Melnyk, D., Miller, W., & Shepperd, J. A. (2010). Information Avoidance: Who, What, When, and Why. *Review of General Psychology*, 14(4), 340-353. <https://doi.org/10.1037/a0021288>
- Viswanath, K. & Ackerson, L. K. (2011). Race, ethnicity, language, social class, and health communication inequalities: A nationally-representative cross-sectional study. *PloS One*, 6(1), e14550. <https://doi.org/10.1371/journal.pone.0014550>

- Weinberg, J. D., Freese, J., & McElhattan, D. (2014). Comparing Data Characteristics and Results of an Online Factorial Survey Between a Population-Based and a Crowdsourced-Recruited Sample. *Sociological Science*, 1, 292-310. <https://doi.org/10.15195/v1.a19>
- Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*, 59(4), 329-349. <https://doi.org/10.1080/03637759209376276>
- Yang, Z. J., Aloe, A. M., & Feeley, T. H. (2014). Risk Information Seeking and Processing Model: A Meta-Analysis. *Journal of Communication*, 64(1), 20-41. <https://doi.org/10.1111/jcom.12071>
- Zhang, L., Qin, Y., & Li, P. (2020). Media Complementarity and Health Information Acquisition: A Cross-Sectional Analysis of the 2017 HINTS-China Survey. *Journal of Health Communication*, 25(4), 291-300. <https://doi.org/10.1080/10810730.2020.1746868>
- Zhu, Y. (2017). Pro-smoking information scanning using social media predicts young adults' smoking behavior. *Computers in Human Behavior*, 77, 19-24. <https://doi.org/10.1016/j.chb.2017.08.004>

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