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To cite this article: Daniel Chavez-Yenter, Avery Holton, Alexis Vega, Ginger Zamora & Kimberly A. Kaphingst (2023): “La Piedra Rosetta” Content Analysis of Health-Specific Stories on Genetic Testing From Spanish-Language News Outlets, *Howard Journal of Communications*, DOI: [10.1080/10646175.2023.2228232](https://doi.org/10.1080/10646175.2023.2228232)

To link to this article: <https://doi.org/10.1080/10646175.2023.2228232>



Published online: 12 Jul 2023.



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“La Piedra Rosetta” Content Analysis of Health-Specific Stories on Genetic Testing From Spanish-Language News Outlets

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ABSTRACT

Genetic testing (GT) for health purposes has grown exponentially in the past decade, with the ability to prescribe precision medicine regimens as well as preventative and preparatory actions. White and English-speaking populations have largely benefited from GT, leaving other groups, like Latinx populations, behind. Explanations for this disparity have cited a lack of awareness and knowledge of GT for health purposes but have generally only been studied in clinical settings. Mass and news media have virtually ignored this disparity. English-language news coverage of GT for health purposes has linked coverage to views of genetic determinism. Spanish-language news coverage of GT for health purposes has cited no published data, thus the current study is the first to characterize health-focused articles on GT from two U.S. Spanish-language news outlets, Telemundo and Univision. From March 2008 to August 2020, we identified only 49 published stories on health-focused stories on GT. Stories focused mostly on cancer and fertility types of GT and often did not attribute an author to the story. Spanish-language coverage is limited and may be contributing to the lack of knowledge of GT for health purposes. We offer potential future research opportunities in genomics from a mass media perspective.

KEYWORDS

Disparities; genetic testing; health communication; news media; Spanish

Introduction

Genetic testing (GT) has initiated an evolution of treatment, prevention, and care for several diseases, including identifying hereditary cancer, cardiovascular and metabolic gene variants, and tumor DNA composition for targeted treatment, and has drawn public fascination for its role in tracing ancestry. Likewise, the news media have provided increasing coverage of GT (Gallop et al., 2017), mainly focusing on English-language populations. GT use among Latinx populations (of any racial group) is significantly lower than among White non-Hispanic/Latinx populations (Canedo et al., 2019;

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Cruz-Correa et al., 2017). Though not directly linked to testing uptake, researchers hypothesize that the Latinx population's lower knowledge and awareness of GT, limited access, and greater concerns about GT may explain why they do not undergo GT (Canedo et al., 2019; Chavez-Yenter et al., 2021; Cruz-Correa et al., 2017). Though clinical studies have been able to gain some sense of attitudes, knowledge, and perceptions of Latinx people toward GT for health purposes (see Canedo et al., 2019; Cruz-Correa et al., 2017), such studies have been limited in generalizability. Further, little to no research has explored GT coverage from Spanish-language and Latinx media sources and their potential influence on attitudes, knowledge, and perceptions.

News media, like newspapers, television, and internet/digital media, play a substantial role in influencing attitudes, behaviors, and engagement (Darr et al., 2020; de Vreese & Boomgaarden, 2006; Moeller & de Vreese, 2013; Moy et al., 2004). However, their role as related to GT for health purposes and Latinx populations, particularly Spanish-language news outlets and their audience members, remains underexplored. Health communication in mass media for languages other than English remains woefully understudied. Though media scholars have assessed media effects on voting engagement among Latinx populations (Garcia-Rios & Barreto, 2016; Gomez-Aguinaga, 2021; Soto-Vásquez, 2020), little to no research has considered nonethnic issues like abortion, same-sex marriage, or GT (Darr et al., 2020; Kerevel, 2011). Consistent with a proposed model of informal scientific learning from news media for GT (Gallop et al., 2017) and previous literature demonstrating effects of English-language media contributing to genetic determinism in audiences (Donovan & Venville, 2012; Gallop et al., 2017; Lynch et al., 2008; Rundgren et al., 2012), we posit that Spanish-language news media may set baseline attitudes and perceptions toward scientific topics. GT coverage may influence an individual's decision-making process regarding testing. Because this has not been well studied within Spanish-language news outlets in the United States, like Telemundo and Univision, we believe this study fills a critical gap for Latinx and Spanish-speaking populations. Latinx groups are considered one of the fast-growing minority groups in the United States. By 2050, 1 out of every 3 U.S. individuals is predicted to identify as Latinx (Passel & Cohn, 2008; U.S. Census Bureau, 2021), meaning any individual who has Latin American origins, either born domestically or internationally (Velasco-Mondragon et al., 2016), with culture and language attributions (Vidal-Ortiz & Martínez, 2018). Latinx groups tend to experience health inequities, especially those who prefer speaking Spanish (an estimated 11.5 million U.S. residents), and are an important group to study in the U.S. context, especially in genetics, where less research has been conducted (Green et al., 2020; U.S. Census Bureau, 2021). Thus, the current study is an exploratory examination of the most recent health-focused news coverage from the two most prominent Spanish-language news outlets in the United States, Univision and Telemundo. Our study seeks to understand how these outlets cover and present GT for health purposes to Latinx and Spanish-speaking populations.

Latinx and Spanish-language news media outlets in the United States

Latinx-oriented media have a storied history in the United States and were highly influential in informing and at times swaying opinions of their readers, noting their power to influence audiences (Subervi-Velez, 2008). The pinnacle of Latinx-oriented

news media emerged in the 1960s at the birth of the civil rights movement, which advocated for autonomy and equal treatment and was able to shift attitudes and behaviors of Latinx members toward civic engagement and political engagement (Soto-Vásquez, 2020; Subervi-Velez, 2008). Ethnic media such as these tend to have a substantive positive impact on their audiences, with pride, representation, and performance (Ramasubramanian et al., 2017; Viswanath & Arora, 2000; Yu, 2016). Pushes to assimilate ethnic groups have reduced the number of ethnic media outlets at time; similarly, Spanish-language media tend to try to appeal to a pan-Hispanic identity (Johnson, 2000), especially large news networks. Telemundo and Univision are two U.S.-based Spanish-language networks that emerged from this era and have both national and local networks that provide programming for their Spanish-speaking audiences and had notable effects on improve political engagement for many of their audience members (Kerevel, 2011). Recent reports noted that Univision and Telemundo draw an average of 1.8 million and 1.5 million prime time viewers, respectively, making them the top Spanish-language news sources among all available news outlets in the United States (Darr et al., 2020; James, 2017; Wilkinson, 2015); via the TV platform, Univision and Telemundo have had a robust history in the United States for over 50 years among their Latinx and Spanish-speaking audiences (for a comprehensive review, see Wilkinson, 2015).

Historically, a sizeable portion of Spanish-speaking Latinx members report getting news from Spanish-language radio and television rather than Spanish-language print newspapers (Retis, 2019; Subervi-Velez, 2008). However, in larger hubs for Latinx populations, there still do exist Spanish-language print newspapers, like *El Nuevo Herald* in Miami, *Mundo Hispánico* in Atlanta, and *La Opinión* in Los Angeles, that remain an importance source of news for their Spanish-speaking audiences (City University of New York, 2017). Yet, similar to the larger news media industry, Spanish-language press has transitioned to the digital age (Retis, 2019). The digital space has presented better prospects for dailies, with average unique visitors having grown substantially from 2014 to 2015 (Pew Research Center, 2017). Latinx audiences have shifted with the digital transition, with 74% of Latinx respondents from a national survey reporting using the internet to find news (Retis, 2019). Because Univision and Telemundo have strong internet presences (Business Wire, 2020; Villafaña, 2020), they serve as appropriate news outlets to analyze how Spanish-language media may influence attitudes and behaviors toward health and health technology advancements like GT among Latinx and Spanish-language audiences. Though both media outlets likely have metrics of total visitors to their websites, these data are not publicly available. However, through analysis by a web tracker company, Similarweb, in April 2022, Telemundo had an estimated 7.7 million visitors to their website, and Univision had 96.4 million visitors (Similarweb, 2022a, 2022b).

Science and health communication from Latinx news media

Recent research has demonstrated that the scope of scientific topics covered by Univision and Telemundo is increasing to meet a demographic shift (younger, acculturated, etc.) of the Latinx community in the United States. Yet, coverage is still not as prevalent

as in English-language news media (Okamoto et al., 2011). With cultural shifts among environmental ideologies and with health topics becoming more pervasive, news media coverage has begun to align with these progressions with more culturally and politically relevant coverage of environmental and health topics for Latinx populations (Jacobson et al., 2019; Pinto & Vigón, 2018; Takahashi et al., 2015). GT is one such topic that has received increased interest among health and health communication scholars within English-language coverage (see Galvin & Grill, 2009; Tercyak et al., 2012; Wöhlke & Perry, 2021) but remains essentially unexplored in a Latinx context. Though studies have shown how news media and social media provide GT content (see Canary et al., 2018; Chow-White et al., 2018; Gallop et al., 2017), these studies have not explicitly looked for racial, ethnic, or cultural cues. Thus, understanding what kind of coverage GT is given and its features for Spanish-speaking audiences can help better position the findings of previous studies at a time when researchers have called for improved research on news media coverage of GT for health purposes (see Canary et al., 2018; Holton et al., 2017).

Spanish-language media are generally understudied in health communication and often do not have theoretical grounding. We were able to identify a limited number of studies that have assessed coverage of health topics in Spanish-language news media in the United States (Ortega, 2013; Wilkin & Ball-Rokeach, 2006). One of those studies was Subervi-Velez's study in 1999 assessing health coverage from Spanish-language television, specifically Telemundo and Univision's coverage in local networks across the United States, topics covered, impact, relevancy, inclusion, and local angle contextualization. He found coverage focused on specific diseases or medical conditions (high blood pressure, diabetes, HIV/AIDS) and on educating the audience on management and/or prevention (Subervi-Velez, 1999). Yet, Subervi-Velez found that creating relevancy was often a challenge for these news media outlets. Often, they did not include Latino advocacy organizations or community perspectives, instead drawing much of their reporting from primary organizations (like governmental health agencies). With a lack of perceived relevancy, Latinx members may simply not attend to the coverage in meaningful ways. Often press releases or other materials for distribution are directly translated from English versions and can lose cultural appropriateness. To enhance relevancy, Subervi-Velez noted that six components should be incorporated to improve engagement of audience members: topic, stakeholders, impact, susceptibility, experts, and local community (or cultural) angle. By improving these subconstructs, especially those who feel marginalized or otherwise peripheral to mainstream news coverage, researchers posit that Latinx audiences will better attend to and retain important information in published reports (Ortega, 2013; Wilkin & Ball-Rokeach, 2006).

Media effects among Latinx news media

Media effects, as conceptualized as “direct effect” models of social cueing (attitudes, behavior change, etc.) via news communication (Zaller, 1992), have been understudied within Latinx and Spanish-language news media. Studies that have assessed media effects from Latinx media sources were mainly implemented in the 1980s drawing from news media conceptualizations of direct effects (propaganda era of World War II films, graphics, etc.). However, as Bennett and Iyengar (2008) noted, with the

changing media environments, there is a need for theoretical development and reconceptualizations that include diverse populations. Drawing from their conceptualization of minimal effects (marginal influence of persuasion, attitude formation, etc.) with historical examples of media effects on political engagement via Latinx news media, we believe Univision and Telemundo have the ability to influence their audiences' attitudes toward various events or technologies.

Even though social science-based studies about media effects cannot conclusively determine whether news media can impact public thinking (see Hopkins et al., 2017), there are sufficient grounds to suggest media effects from previous studies on political processes and contexts. Support for media effects perspectives has empirical evidence and theoretical foundations related to civic attitudes and voting behaviors (Graber & Dunaway, 2017; Jeffres, 1999, 2000; Kenamer, 1987). Put simply, it is argued that exposure to specific media and specific content can have particular effects. For example, political communication coverage from Spanish-language outlets like Telemundo and Univision regarding immigration topics likely influenced opinions of political candidates and, ultimately, audience voting (Soto-Vásquez, 2020; Subervi-Velez, 2008). Though most of these studies were situated in political engagement as their primary outcomes (voting intention, political socialization, participation, etc.), media exposure was a key predictor indirectly influenced via cognitions, attitudes, and behaviors (mediating variables). As such, an existing hypothesis is that media exposure for some Latinx individuals should have some effect on knowledge, attitudes, and/or behaviors in a given context (Soto-Vásquez, 2020; Subervi-Velez, 2008). Though this current study does not directly assess media effects, we want to note how recent coverage of GT for health purposes can potentially influence attitudes.

Genetics and news media

A fair amount of research has reviewed GT coverage from a news media perspective but has been primarily within English-language contexts. Extant literature notes that news media has become the main source of scientific information after formal education (Gallop et al., 2017). As such, the ways in which the news media frame and present such information is key to improved health efficacy and behaviors. A media frame contains critical words, phrases, metaphors, or other textual materials used when presenting media content and is based on (perceived) salience (Entman, 1993). Framing of these topics is crucial in the accuracy of communications of scientific information to the public (Nisbet & Mooney, 2007; Reis, 2008). However, the media often create simplified accounts of genetic research, emphasizing genetic explanations without consideration of gene-environment interactions (Bubela & Caulfield, 2004; Eyck & Williment, 2003), which may lead to perceptions of genetic determinism.

Various researchers have expressed concern about news media coverage of genetics as deterministic or discriminatory (Gallop et al., 2017; Lynch et al., 2008). Genetic determinism is the idea that without considerations of environment, epigenetics, or probabilistic inputs, genetics explain our selves at a molecular level and are the sole sources of personality, health, or other individual characteristics (Condit, 1999; Conrad, 1999). Individuals feel “doomed” to develop certain conditions based on their genomic

profile without accounting for other factors (environment, behavior, etc.) through such a perspective. In other words, if an individual receives a result indicating a gene mutation that elevates their risk for cancer, through a genetic determinism perspective, that person may feel that developing cancer is unavoidable even if there are actionable steps to mitigate the risk. With this perception, one may hold fatalistic attitudes toward GT and potentially avoid testing to avoid psychological stress. *Fatalismo* (fatalism) has been a common perspective found among Latinx populations when offered GT within clinical settings and cited by some as a reason they do not test (Almeida et al., 2021; Chavez-Yenter et al., 2021; Kinney et al., 2010; Pacyna et al., 2021; Srinivasan et al., 2021). However, it is unclear whether news coverage may be setting a *fatalismo* or genetic determinism grounding for Spanish-speaking Latinx populations.

Past research has found that genetic misconceptions are common among children exposed to genetic determinism-type stories (though not a causal relationship) and likely can influence adult attitudes over time (Donovan & Venville, 2012; Rundgren et al., 2012). As such, there is empirical evidence in English-speaking populations to support how news media can influence attitudes toward genetics knowledge. Spanish-language news media have not been studied in this context. Without a robust understanding of this media coverage, efforts to engage Latinx populations in GT for health purposes will likely fail, and health disparities will continue with GT service delivery (Green et al., 2020).

This study is interested in how health-focused news stories of GT are covered within Spanish-language news media as more Latinx populations report seeking and receiving news online (Retis, 2019). As clinical and direct-to-consumer GT is continually growing, there is a need to better understand how non-English news sources are covering the technology and their potential for influence. Such analysis can reveal how health-specific GT is presented to Latinx and Spanish-speaking communities, thereby indicating how to improve engagement with Latinx populations.

Thus, this study asks the following research questions:

Research Question 1: How much health-focused genetic testing coverage has been published by two key Spanish-media outlets in the United States?

Research Question 2: In that health-focused news coverage, what health topics were covered, what sources were referenced, and what features of coverage were noted, specifically the (a) length, (b) tone, and (c) journalist byline attribution?

Method

Using an Advanced Google search of Univision and Telemundo, published articles that included GT from 2008 to 2020 were collected through a directed query search within specified web domains and time frames. As major television stations that have transitioned along with others to digital platforms, news coverage for Univision and Telemundo is readily available online. A common challenge for studying Spanish-language news coverage is a lack of a consistent and publicly available data repository (Retis, 2019). We therefore used *Prueba Genetica* (genetic testing) as the main keyword to search the entire web domains of both Univision.com and Telemundo.com from 2008 to 2020. We used GT specifically related to the technology itself rather than genetics

as a topic and used 2008 as a starting point, because this was the time frame when GT began receiving more coverage broadly in English-language outlets (Lynch et al., 2011). Further, 2008 appeared to be the start of an increase in publication of Spanish-language articles by Univision based on our data collection processes. We believe a 12-year time range provides a vital data set to address this research gap.

News stories were initially screened by the lead author for relevancy. To be included in the final sample, stories needed to contain information about GT specifically—and not just a story related to genetics—and be published on Telemundo and Univision web domains (not hosted on another website or story aggregator). The current analysis is a subanalysis of a larger parent study of 235 news stories from Univision and Telemundo that met inclusion criteria and were aggregated into a database for further analysis. Only written stories were included, with video-only news coverage stories excluded for the current analysis. Our rationale for including written articles only was predicated on video content accessibility, because many Latinx populations report difficulties with internet bandwidth (Retis, 2019). Additionally, written stories are more easily accessible online than streaming videos and tend to be published much faster than videos.

Initial data collected included news source (Univision, Telemundo, etc.), publication date, author(s), categorization from the outlet (health, crime, etc.) and author-created categorization (forensics, health, celebrity, etc.), article length (short, under 250 words; medium, 250–500 words; long, 500 words or more), tone (positive, negative, neutral), video inclusion, and sources referenced (business representative, governmental official, individual, medical institutions, etc.). Author-created categorizations were used because the theme of some of the published news articles was not categorized by the news outlets. As such, we created the categorization scheme to discern the thematic topic of the article for the analysis. For the current analysis, only stories that focused on health applications of GT were included. Stories were cross-referenced from the outlet categorization and the author-created categorization and then reviewed by the lead author to ensure that they were indeed health-focused. Tone was more subjective and was based on the overall expression of GT as positive, negative, or neutral in the application. For example, articles often would highlight the power of GT to predict inherited health risks and allow proactive actions, and these were considered positive (one article even used the moniker Rosetta Stone). A quote from one of the article for prostate cancer noted, “Its treated like the ‘Rosetta stone’ of prostate cancer with its metastasis and being able to describe the complexity of the disease and translate that into personalized treatment plans” (Univision, 2015). An example of a negative tone was an article describing the experience of one woman who found she had a gene mutation increasing her risk for breast cancer, leading to her undergoing a mastectomy only to learn that she had received an erroneous result. The article went on, “Although she knew she would survive either way, Maureen’s first reaction was doubt.

It was devastating, because I knew about our family history of breast and ovarian cancer. My first question was, is there a possibility that this [result] is wrong? And the researcher said “no.” ... As a cause of this result, Maureen made the difficult choice to undergo a surgery that would remove her breasts to eliminate the risk of developing cancer (Telemundo, 2019).

Neutral coverage was used for an article that had no clear expression of positive or negative emotion and more information presentation; for example, one article that reported matter-of-factly on GT being used to identify whether certain blood types were more susceptible to the COVID-19 virus and testing positive. The article noted, “In a 23&me study non-peer reviewed, they found that people with Type O blood seem less susceptible for the virus: specifically 18% less at risk to give a positive results on a COVID-19 test than other types of blood” (Univision, 2020).

Two bilingual coders were recruited to ensure that the data abstraction of the articles was accurate and interpretation was consistent. Of the total 235 articles in the parent study, each coder was given 78 articles to review. To ensure reliability, a second coder was assigned to review 20% of all stories collected ($n=49$ from 235 articles in the complete parent study), which included the health-specific stories ($n=10$ of the 49 health-specific stories were reviewed). The lead author met with both coders to train them on the data abstraction protocol. The codebook was first tested and adapted as needed based upon Scott’s pi, which calculates the reliability score for data abstraction and interpretation (Scott, 2009). The mean reliability was 0.714, ranging from 0.59 to 1. Reliability scores above 0.7 are considered good, and scores above 0.4 are considered medium. Variables with medium reliability scores were improved with additional intercoder discussions in case of uncertainties. Intercoder agreement rates ranged from 68% to 100% for variables listed above for the complete parent dataset of 235 articles. The author-created categorization initially had the lowest reliability and agreement rate but was adapted by including crime in a forensics theme. With a change to this code based on a discussion of the coding team, the agreement rates reached 100%. To address any other discrepancies, the coding team met, discussed, and reached consensus on codes used in the analysis. Statistical analysis and graphic development were completed in R (R Core Team, 2021).

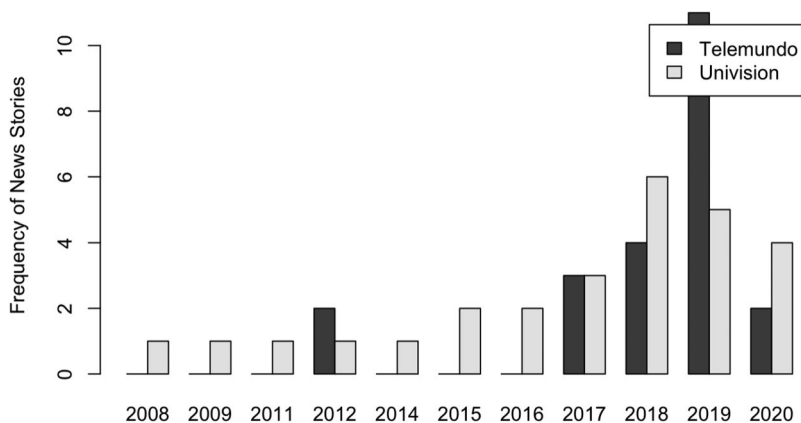
Results

From our parent study, we identified 49 health-specific news stories (20.9%) from the total of 235 collected from March 2008 to August 2020 (Chavez-Yenter et al., in press). Univision ($n=27$) had slightly more published stories regarding health-focused GT than Telemundo ($n=22$), with trends across news outlet being mostly nominal small differences (nonsignificant associations via chi-square tests; Table 1). Health-specific GT coverage has been more common in the past few years, with 2019 having the most publications for a year ($n=16$, 32.7%), with Telemundo publishing more recent health-specific stories than Univision. However, Univision has more consistent publication practices, with at least one story each year with a GT health focus since 2008. Telemundo did not start covering GT for health purposes until 2012 (see Figure 1). Coverage seemingly has decreased or plateaued, likely concurrent with the plateaued popularity of testing (Regalado, 2018). Topics of the health-specific GT news coverage focused primarily on cancer ($n=14$, 28.6%) and fertility (prenatal, reproductive purposes, etc.; $n=11$, 22.4%). Other topics were covered but not at the same frequency as cancer or fertility. Additionally, there was a sizeable number of stories that did not fit into any of the other topics; for example, coverage of less common genetic diseases/conditions (*Linfedema/lymphedema*, Kawasaki syndrome, etc.), the All of Us research initiative, direct-to-consumer testing for health purposes, etc.

Table 1. News coverage characteristics.

News coverage characteristics	<i>n</i> (%)		
News outlet			
Telemundo	22 (44.9)		
Univision	27 (55.1)		
Primary topic focus		Telemundo, n (%)	Univision, n (%)
Cancer	14 (28.6)	7 (50.0)	7 (50.0)
Fertility/prenatal	11 (22.4)	4 (36.4)	7 (63.6)
Alzheimer's	3 (6.1)	2 (66.7)	1 (33.3)
COVID-19	5 (10.2)	3 (60.0)	2 (40.0)
Down syndrome	2 (4.1)	2 (100.0)	0 (0.0)
Nutrition	1 (2.0)	1 (100.0)	0 (0.0)
Heart attack	1 (2.0)	0 (0.0)	1 (0.0)
Type 2 diabetes	1 (2.0)	0 (0.0)	1 (0.0)
Other	11 (22.4)	4 (36.4)	7 (63.6)
Tone			
Positive	27 (55.1)	11 (40.7)	16 (59.3)
Neutral	13 (26.5)	8 (61.5)	5 (38.5)
Negative	9 (18.4)	3 (33.3)	6 (66.7)
Length			
Short (<250 words)	2 (4.1)	1 (50.0)	1 (50.0)
Medium (250–500 words)	17 (34.7)	8 (47.1)	9 (52.9)
Long (>500 words)	30 (61.2)	13 (43.3)	17 (56.7)
Video included			
No	32 (65.3)	13 (40.6)	19 (59.4)
Yes	17 (34.7)	9 (52.9)	8 (47.1)
Author(s) attributed			
Journalist(s)	8 (16.3)	1 (12.5)	7 (87.5)
Telemundo	21 (42.9)	—	—
Univision	19 (38.8)	—	—
Other (Cronkite Noticias)	1 (2.0)	0 (100.0)	1 (100.0)
Total	49 (100)		

Note. Reported are row percentages of the total *n* reported in the second column. Pearson's chi-square tests were also completed but were nonsignificant and thus are not reported.

**Figure 1.** Health-specific stories publications by year and news outlet.

Features of the published news stories varied. The majority of articles had a positive tone and covered ways in which GT could help address health problems through prevention, treatment, or care. The majority of articles were long pieces (over 500 words; $n = 30$, 61.2%) rather than short or medium lengths. Seventeen articles included a video in their published article (34.7%). From all of the stories reviewed, only 8 had an actual

Table 2. Source referenced in health-focused news coverage.

Sources referenced	<i>n</i> (%)
Business	11 (8.7)
Governmental agency/representative	16 (12.7)
Individual	17 (13.5)
Medical institution/representative	43 (34.1)
News agencies	26 (19.0)
Other	13 (10.3)
Total	126 (100)

Note. Articles could have more than one source referenced.

author attributed for the publication (16.3%). Telemundo and Univision were more frequently noted in the byline. However, Univision had many more bylines by actual journalists compared to Telemundo ($n=8$, 87.5% to $n=1$, 12.5%). Across all 49 health-focused stories, there were a total of 126 sources referenced (see Table 2). Sources tended to be from medical institutions ($n=43$, 34.1%), followed by other news agencies ($n=26$, 19.0%) and individuals from the community ($n=17$, 13.5%). Telemundo and Univision frequently do not seem to use wire service articles about GT. Articles from the Associated Press, EFE (a Spain-based media agency), and others only represented 4% of published stories ($n=9$ of 235 total stories; 2 of 49 health-specific stories).

Discussion

This study extends the research on communication about GT by focusing on coverage of GT for health purposes among two major Spanish-language news outlets in the United States. These findings suggest that coverage of health-focused GT among Spanish news outlets is limited. Direct comparison with U.S. English-language media was beyond the scope of this project. However, a comparative study done in Europe found English-language coverage from the United Kingdom had 2.5 times more general GT coverage than their Swiss German-language media (Zimmermann et al., 2019), suggesting that English-language media coverage may be more prevalent than coverage in other languages. The scientific reporting process from these outlets is not clear, such as whether there are designated scientific journalists at these outlets charged with collecting scientific and health information for publication, and more research is needed to understand this process. Taken together, our results suggest that Spanish-language news outlets may be missing an opportunity to better engage, explain, and contextualize health-focused GT for their audiences.

Though the data for this study do not offer a direct comparison to U.S. English-language news coverage of GT for health purposes, previous research has found that compared to Spanish-language news coverage, science and health communication coverage is often significantly less than English-language news (Takahashi et al., 2015). Explanations for this gap have varied, with some citing Telemundo and Univision's business model focusing on stories that will get them clicks and advertising dollars (Coffey & Sanders, 2009), which may reduce the importance of investigative and more in-depth stories. However, this is not unique to Spanish-language media, because many U.S. media agencies have adopted this model. Another potential explanation could be these news agencies' confidence in reporting on GT for health purposes. In English-language news, researchers have found that coverage of genetics is often

inaccurate (Abrams et al., 2016; Gallop et al., 2017; Lanie et al., 2004). A potential compounding challenge for Spanish-language media, a common trend seen in non-English language media markets is limited time and attention to given to scientific topics (Lublinski et al., 2014; Nguyen & Tran, 2019). Furthermore, with limited attention comes limited resources, in particular perhaps dedicated health/scientific journalists. In non-English media markets, general reporters are assigned to reporting these types of stories, where their lack scientific knowledge and specialized reporting skills may impact reporting for lay publics (Appiah et al., 2015; Aram, 2011; Kakonge, 2013; Shanahan, 2009). This potential explanation is worth further exploration for Spanish-language media by directly asking editors and journalists at these outlets about the availability of resources (i.e., journalists who can cover health and science issues) and their confidence in understanding and communicating GT for health purposes to their broader audiences.

Only 8 of the 49 stories had an actual attributed journalist as the author; however, Univision had much better journalist attribution than Telemundo. Though the editorial process is proprietary knowledge, it seems that teams of journalists and editors work together on stories without receiving attribution. The lack of attribution could suggest that the news organizations in this study relied on coverage pulled from other news outlets. This would not be surprising given news outlets' cutbacks on critical areas of coverage such as health and science over the last decade (see Holton, 2016). This warrants further analysis and again calls into question the availability of journalists and other resources to cover complex health topics such as GT.

Despite the limited coverage over the years, the coverage topics mainly focused on GT related to cancer and fertility purposes. Because these are generally the most well-known purposes for GT (Becker et al., 2011), this may explain Telemundo's and Univision's coverage focus on these topics. Many of the sources are other news agencies and primary sources (medical institutions). However, there are times when the stories included the experiences of community members with cancer or fertility-related GT. In this sense, the news outlets may be trying to provide a relevant narrative to the audience members by bringing in key stakeholders and drawing from experts when they can. With this inclusion, they can show the impact of GT for preventative services or treatment. The stories could also highlight potential risk and susceptibility by noting the prevalence of certain conditions and potential risk factors that could make one susceptible (without scaring their viewers too much because most stories were framed positively). Though the limited coverage may reflect reduced confidence or even a perceived apathy toward these topics from their audiences to fully understand and communicate scientific findings of GT for health purposes, the news outlets in this study seemingly understand the importance of communicating about GT to their audiences. Though their main topics may very well reflect the most prominent health-focused GT, more coverage is needed to educate audience members, especially primarily Spanish-speaking populations, on the purposes of genetic tests and their relevance to the community. As Canary and her colleagues (2018) noted, simply offering more coverage of GT may not be enough to convey the ethical, legal, and personal implications of GT. Thus, news organizations should find ways to enhance their coverage of GT, especially as it continues to become more accessible, in more meaningful ways for audiences who may need to make health decisions using their knowledge of GT.

This study is not without limitations. First, we collected news coverage from 2008, which represents a time when GT was beginning to receive news coverage more broadly and from Spanish-language outlets specifically. Still, there may be GT content published outside of the collection window of this study. Accessing such information remains a challenge in Spanish-language news media research because there are no centralized repositories of previously published news coverage (Retis, 2019). Still, we believe we have been successful in covering the past 12 years as a way to characterize the current landscape of news coverage of health-focused GT from these two Spanish news outlets. Second, we used only one term in collecting news stories. When initial data collection was being done, other terms like genetics and DNA testing were used and yielded primarily studies outside the scope of GT. However, it is possible that articles were inadvertently excluded from this analysis. Third, we reviewed written news coverage that appeared online from Telemundo and Univision. Our initial analysis found a sizeable amount of video clips regarding GT for health purposes. Though we were assessing digital media, our focus was to review written articles to determine their topic and characteristics. However, we do plan to review these video clips in future research. Fourth, because this study is descriptive and exploratory, we can only speculate and pose future research questions. Taking a quantitative content analysis approach limits what we can conclude. However, this study is the first step in understanding how news coverage from these Spanish news outlets can serve as informal networks of education for GT and serve as entry points in developing initial attitudes and perceptions of GT. We plan to do a more in-depth qualitative content analysis with these data to explore the uses of narrative and other characteristics. Finally, we largely take an atheoretical approach with this analysis. We argue that this is appropriate, however, because there are no extant theories of science or health communication with Spanish-speaking Latinx populations, especially from mass media. However, our findings highlight mass media's role in science and health communication for Spanish-speaking populations through source expertise, cultural relevancy, and framing that can advance theoretical understanding.

In sum, U.S. Spanish-language news coverage of GT for health purposes is limited. However, the increase in coverage more recently may suggest that news organizations are taking GT and its relation to their audiences more seriously. This may also reflect an increased fascination with ancestry testing as well as increased use of health-related GT in clinical and direct-to-consumer settings (Regalado, 2018). That being said, Latinx and Spanish-speaking populations continue to be less knowledgeable about GT than White populations (Canedo et al., 2019). News media outlets like Telemundo and Univision have the potential to serve as informal learning outlets as an entry point to attitude formation and engagement. With the limited coverage, this may very well explain the lack of knowledge Latinx members have with GT for health purposes. As such, we have highlighted future potential research to better understand how coverage can be made more relevant to audience members, media effects, the editorial process, and the confidence of these news outlets to report on these technologies. With a better understanding of these questions, we posit that we can leverage these networks to increase coverage and potentially improve awareness and attitudes about GT for health purposes in Latinx communities and improve engagement.

Disclosure statement

The authors have no conflicts of interest to report.

Funding

Research reported in this article was supported by the Utah Center for Excellence in ELSI Research (UCEER). UCEER is supported by the National Human Genome Research Institute of the National Institutes of Health under Award No. P20HG007249. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Data availability

Data are available for review upon reasonable request from the lead author.

References

- Abrams, L. R., Koehly, L. M., Hooker, G. W., Paquin, R. S., Capella, J. N., & McBride, C. M. (2016). Media exposure and genetic literacy skills to evaluate Angelina Jolie's decision for prophylactic mastectomy. *Public Health Genomics*, 19(5), 282–289. <https://doi.org/10.1159/000447944>
- Almeida, R., Lopez-Macha, A., Dugatkin, T., Joseph, G., Duron, Y., Hurtado de Mendoza, A., D. Graves, K., & Fejerman, L. (2021). Community research collaboration to develop a promotores-based hereditary breast cancer education program for Spanish-speaking Latinas. *Health Education Research*, 36(3), 319–336. <https://doi.org/10.1093/her/cyab011>
- Appiah, B., Gastel, B., Burdine, J. N., & Russell, L. H. (2015). Science reporting in Accra, Ghana: Sources, barriers and motivational factors. *Public Understanding of Science*, 24(1), 23–37. <https://doi.org/10.1177/0963662514547478>
- Aram, A. (2011). The fallacy of balance in communicating climate change. *Media Development*, 4, 24–27.
- Chavez-Yenter, D., Holton, A., Vega, AS., Zamora, G., & Kaphingst, K. Ciencia, Genética, y ¿Desinformación?: A content analysis of genetic testing coverage from U.S. Spanish-language news media. *Journal of Genetic Counseling* (in press).
- Becker, F., van El, C. G., Ibarreta, D., Zika, E., Hogarth, S., Borry, P., Cambon-Thomsen, A., Cassiman, J. J., Evers-Kiebooms, G., Hodgson, S., Janssens, A. C. J. W., Kaariainen, H., Krawczak, M., Kristoffersson, U., Lubinski, J., Patch, C., Penchaszadeh, V. B., Read, A., Rogowski, W., ... Cornel, M. C. (2011). Genetic testing and common disorders in a public health framework: How to assess relevance and possibilities. *European Journal of Human Genetics*, 19(S1), S6–S44. <https://doi.org/10.1038/ejhg.2010.249>
- Bennett, W. L., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication*, 58(4), 707–731. <https://doi.org/10.1111/j.1460-2466.2008.00410.x>
- Bubela, T., & Caulfield, T. (2004). Do the print media “hype” genetic research? A comparison of newspaper stories and peer-reviewed research papers. *CMAJ : Canadian Medical Association Journal=Journal de L'Association Medicale Canadienne*, 170(9), 1399–1407. <https://doi.org/10.1503/cmaj.1030762>
- Business Wire. (2020). Univision's portfolio of T.V. networks grows faster than any other media group in the U.S., outperforming FOX, Disney-ABC, NBCUniversal, ViacomCBS and others, during the 2019/2020 broadcast season. <https://www.businesswire.com/news/home/20200515005329/en/Univision%E2%80%99s-Portfolio-of-TV-Networks-Grows-Faster-than-Any-Other-Media-Group-in-the-U.S.-Outperforming-FOX-Disney-ABC-NBCUniversal-ViacomCBS-and-Other-s-During-the-20192020-Broadcast-Season>

- Canary, H. E., Clark, Y. K., & Holton, A. (2018). Structuring expanded genetic carrier screening: A longitudinal analysis of online news coverage. *Journal of Health Communication, 23*(6), 534–541. <https://doi.org/10.1080/10810730.2018.1477884>
- Canedo, J. R., Miller, S. T., Myers, H. F., & Sanderson, M. (2019). Racial and ethnic differences in knowledge and attitudes about genetic testing in the U.S.: Systematic review. *Journal of Genetic Counseling, 28*(3), 587–601. <https://doi.org/10.1002/jgc4.1078>
- Chavez-Yenter, D., Chou, W.-Y S., & Kaphingst, K. A. (2021). State of recent literature on communication about cancer genetic testing among Latinx populations. *Journal of Genetic Counseling, 30*(3), 911–918. <https://doi.org/10.1002/jgc4.1351>
- Chavez-Yenter, D., Vagher, J., Clayton, M. F., Rindler, M., Shukovich, M., & Kaphingst, K. A. (2021). “Being proactive, not reactive”: Exploring perceptions of genetic testing among White, Latinx, and Pacific Islander Populations. *Journal of Community Genetics, 12*(4), 617–630. <https://doi.org/10.1007/s12687-021-00542-3>
- Chow-White, P., Struve, S., Lusoli, A., Lesage, F., Saraf, N., & Oldring, A. (2018). ‘Warren Buffet is my cousin’: Shaping public understanding of big data biotechnology, direct-to-consumer genomics, and 23andMe on Twitter. *Information, Communication & Society, 21*(3), 448–464. <https://doi.org/10.1080/1369118X.2017.1285951>
- City University of New York. (2017). The state of Latino media: The industry at a glance. <https://thelatinomediareport.journalism.cuny.edu/the-industry-at-a-glance/>
- Coffey, A. J., & Sanders, A. K. (2009). Defining a product market for Spanish-language broadcast media: Lessons from United States v. Univision Communications, Inc. and Hispanic broadcasting. *Communication Law and Policy, 15*(1), 55–89. <https://doi.org/10.1080/10811680903446232>
- Condit, C. M. (1999). How the public understands genetics: Non-deterministic and non-discriminatory interpretations of the “blueprint” metaphor. *Public Understanding of Science, 8*(3), 169–180. <https://doi.org/10.1088/0963-6625/8/3/302>
- Conrad, P. (1999). A mirage of genes. *Sociology of Health and Illness, 21*(2), 228–241. <https://doi.org/10.1111/1467-9566.00151>
- Cruz-Correa, M., Pérez-Mayoral, J., Dutil, J., Echenique, M., Mosquera, R., Rivera-Román, K., Umpierre, S., Rodriguez-Quilichini, S., Gonzalez-Pons, M., Olivera, M. I., & Pardo, S.; Puerto Rico Clinical Cancer Genetics Consortia. (2017). Clinical cancer genetics disparities among Latinos. *Journal of Genetic Counseling, 26*(3), 379–386. <https://doi.org/10.1007/s10897-016-0051-x>
- Darr, J. P., Perry, B. N., Dunaway, J. L., & Sui, M. (2020). Seeing Spanish: The effects of language-based media choices on resentment and belonging. *Political Communication, 37*(4), 488–511. <https://doi.org/10.1080/10584609.2020.1713268>
- de Vreese, C. H., & Boomgaarden, H. (2006). News, political knowledge and participation: The differential effects of news media exposure on political knowledge and participation. *Acta Politica, 41*(4), 317–341. <https://doi.org/10.1057/palgrave.ap.5500164>
- Donovan, J., & Venville, G. (2012). Exploring the influence of the mass media on primary students’ conceptual understanding of genetics. *Education 3-13, 40*(1), 75–95. <https://doi.org/10.1080/03004279.2012.635058>
- Entman, R. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Eyck, T., & Williment, M. (2003). The national media and things genetic. *Science Communication, 25*(2), 129–152. <https://doi.org/10.1177/1075547003259212>
- Gallop, L., Chapman, R., Selita, F., & Kovas, Y. (2017). Effects of education and media framing on genetic knowledge and attitudes. *The European Proceedings of Social and Behavioural Sciences ICPE 2017, 08-09, 121-141*. <https://doi.org/10.15405/epsbs.2017.12.13>
- Galvin, K. M., & Grill, L. H. (2009). Opening up the conversation on genetics and genomics in families the space for communication scholars. *Annals of the International Communication Association, 33*(1), 213–257. <https://doi.org/10.1080/23808985.2009.11679088>
- Garcia-Rios, S. I., & Barreto, M. A. (2016). Politicized immigrant identity, Spanish-language media, and political mobilization in 2012. *RSF: The Russell Sage Foundation Journal of the Social Sciences, 2*(3), 78–96. <https://doi.org/10.7758/rsf.2016.2.3.05>

- Gomez-Aguinaga, B. (2021). One group, two worlds? Latino perceptions of policy salience among mainstream and Spanish-language news consumers. *Social Science Quarterly*, 102(1), 238–258. <https://doi.org/10.1111/ssqu.12884>
- Graber, D. A., & Dunaway, J. (2017). *Mass media and American politics*. C.Q. Press.
- Green, E. D., Gunter, C., Biesecker, L. G., Di Francesco, V., Easter, C. L., Feingold, E. A., Felsenfeld, A. L., Kaufman, D. J., Ostrander, E. A., Pavan, W. J., Phillippy, A. M., Wise, A. L., Dayal, J. G., Kish, B. J., Mandich, A., Wellington, C. R., Wetterstrand, K. A., Bates, S. A., Leja, D., ... Manolio, T. A. (2020). Strategic vision for improving human health at the forefront of genomics. *Nature*, 586(7831), 683–692. <https://doi.org/10.1038/s41586-020-2817-4>
- Holton, A. E. (2016). Intrapreneurial informants: An emergent role of freelance journalists. *Journalism Practice*, 10(7), 917–927. <https://doi.org/10.1080/17512786.2016.1166069>
- Holton, A. E., Canary, H. E., & Wong, B. (2017). Business and breakthrough: Framing (expanded) genetic carrier screening for the public. *Health Communication*, 32(9), 1051–1058. <https://doi.org/10.1080/10410236.2016.1196515>
- Hopkins, D. J., Kim, E., & Kim, S. (2017). Does newspaper coverage influence or reflect public perceptions of the economy? *Research & Politics*, 4(4), 205316801773790. <https://doi.org/10.1177/2053168017737900>
- Jacobson, S., Pinto, J., Gutsche, R. E., & Wilson, A. (2019). Goodbye, Miami? Reporting climate change as a local story. In J. Pinto, R. E. Gutsche, & P. Prado (Eds.), *Climate change, media & culture: Critical issues in global environmental communication*. (pp. 53–71). Emerald. <https://doi.org/10.1108/978-1-78769-967-020191006>
- James, M. (2017). Univision's latest drama is behind the scenes: It's losing young Latino viewers to the competition. *Los Angeles Times*. <https://www.latimes.com/entertainment/envelope/cotown/la-fi-ct-univision-telenovelas-20170102-snap-20161220-story.html>
- Jeffres, L. W. (1999). The impact of ethnicity and ethnic media on presidential voting patterns. *Journalism & Communication Monographs*, 1(3), 198–262. <https://doi.org/10.1177/152263799900100302>
- Jeffres, L. W. (2000). Ethnicity and ethnic media use: A panel study. *Communication Research*, 27(4), 496–535. <https://doi.org/10.1177/009365000027004004>
- Johnson, M. A. (2000). How ethnic are the US ethnic media: The case of Latina magazines. *Mass Communication and Society*, 3(2-3), 229–248. https://doi.org/10.1207/S15327825MCS0323_04
- Kakonge, J. O. (2013). Fostering partnerships with media organizations to improve climate change coverage in Africa. *Science Communication*, 35(3), 411–416. <https://doi.org/10.1177/1075547012464216>
- Kennamer, J. D. (1987). How media use during campaign affects the intent to vote. *Journalism Quarterly*, 64(2-3), 291–300. <https://doi.org/10.1177/107769908706400202>
- Kerevel, Y. P. (2011). The Influence of Spanish-language media on Latino public opinion and group consciousness*: Influence of Spanish-language media on Latinos. *Social Science Quarterly*, 92(2), 509–534. <https://doi.org/10.1111/j.1540-6237.2011.00780.x>
- Kinney, A. Y., Gammon, A., Coxworth, J., Simonsen, S. E., & Arce-Laretta, M. (2010). Exploring attitudes, beliefs, and communication preferences of Latino community members regarding BRCA1/2 mutation testing and preventive strategies. *Genetics in Medicine*, 12(2), 105–115. <https://doi.org/10.1097/GIM.0b013e3181c9af2d>
- Lanie, A. D., Jayaratne, T. E., Sheldon, J. P., Kardia, S. L. R., Anderson, E. S., Feldbaum, M., & Petty, E. M. (2004). Exploring the public understanding of basic genetic concepts. *Journal of Genetic Counseling*, 13(4), 305–320. <https://doi.org/10.1023/B:JOGC.0000035524.66944.6d>
- Lublinski, J., Reichert, I., Denis, A., Fleury, J.-M., Labassi, O., & Spurk, C. (2014). Advances in African and Arab science journalism: Capacity building and new newsroom structures through digital peer-to-peer support. *Ecquid Novi: African Journalism Studies*, 35(2), 4–22. <https://doi.org/10.1080/02560054.2014.919945>
- Lynch, J., Bevan, J., Achter, P., Harris, T., & Condit, C. M. (2008). A preliminary study of how multiple exposures to messages about genetics impact on lay attitudes towards racial and genetic discrimination. *New Genetics and Society*, 27(1), 43–56. <https://doi.org/10.1080/14636770701843634>
- Lynch, J., Parrott, A., Hopkin, R. J., & Myers, M. (2011). Media coverage of direct-to-consumer genetic testing. *Journal of Genetic Counseling*, 20(5), 486–494. <https://doi.org/10.1007/s10897-011-9374-9>

- Moeller, J., & de Vreese, C. (2013). The differential role of the media as an agent of political socialization in Europe. *European Journal of Communication*, 28(3), 309–325. <https://doi.org/10.1177/0267323113482447>
- Moy, P., McCluskey, M. R., McCoy, K., & Spratt, M. A. (2004). Political correlates of local news media use. *Journal of Communication*, 54(3), 532–546. <https://doi.org/10.1111/j.1460-2466.2004.tb02643.x>
- Nguyen, A., & Tran, M. (2019). Science journalism for development in the Global South: A systematic literature review of issues and challenges. *Public Understanding of Science*, 28(8), 973–990. <https://doi.org/10.1177/0963662519875447>
- Nisbet, M., & Mooney, C. (2007). Science and society: Framing science. *Science*, 316(5821), 56–56. <https://doi.org/10.1126/science.1142030>
- Okamoto, D., Ebert, K., & Violet, C. (2011). ¿El campeón de los hispanos? Comparing the coverage of Latino/a collective action in Spanish- and English-language newspapers. *Latino Studies*, 9(2-3), 219–241. <https://doi.org/10.1057/lst.2011.21>
- Ortega, F. J. (2013). *Latina/o health discourses in newsprint media from 2006-2010: A content analysis of four syndicated newspapers* [Master's thesis]. Texas A & M University. <http://hdl.handle.net/1969.1/151790>
- Pacyna, J. E., Shaibi, G. Q., Lee, A., Byrne, J. O., Cuellar, I., Sutton, E. J., Hernandez, V., Lindor, N. M., Singh, D., Kullo, I. J., & Sharp, R. R. (2021). Increasing access to individualized medicine: A matched-cohort study examining Latino participant experiences of genomic screening. *Genetics in Medicine*, 23(5), 934–941. <https://doi.org/10.1038/s41436-020-01079-5>
- Passel, J. S., & Cohn, D. (2008). *U.S. population projections: 2005–2050* (pp. 55–65). Pew Hispanic Center. Pew Research Center. <https://www.pewresearch.org/wp-content/uploads/sites/5/reports/85.pdf>
- Pew Research Center. (2017). State of News Media. Journalism and Media. Accessed Feb 2, 2022 from: https://www.journalism.org/wp-content/uploads/sites/8/2019/06/State-of-the-New-s-Media_2017-Archive-2.pdf
- Pinto, J., & Vigón, M. (2018). Comparing Cuban and South Florida Spanish-language media coverage of sea-level rise. In B. Takahashi, J. Pinto, M. Chavez, & M. Vigón (Eds.), *News media coverage of environmental challenges in Latin America and the Caribbean*. (pp. 47–63). Springer International Publishing. https://doi.org/10.1007/978-3-319-70509-5_3
- Ramasubramanian, S., Doshi, M. J., & Saleem, M. (2017). Mainstream vs ethnic media: How they shape ethnic pride and self-esteem among ethnic minority audiences. *International Journal of Communication*, 11, 1879–1899.
- R Core Team. (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. UR. <https://www.R-project.org/>
- Regalado, A. (2018). Was the year consumer DNA testing blew up. *MIT Technology Review*. <https://www.technologyreview.com/s/610233/2017-was-the-year-consumer-dna-testing-blew-up/>
- Reis, R. (2008). How Brazilian and North American newspapers frame the stem cell research debate. *Science Communication*, 29(3), 316–334. <https://doi.org/10.1177/1075547007312394>
- Retis, J. (2019). Hispanic media today: Serving bilingual and bicultural audiences in the digital age. *Democracy Fund Public Square Program*, 1–24. https://democracyfund.org/wp-content/uploads/2020/06/2019_DemocracyFund_HispanicMediaToday.pdf
- Rundgren, C.-J., Rundgren, S.-N C., Tseng, Y.-H., Lin, P.-L., & Chang, C.-Y. (2012). Are you SliM? Developing an instrument for civic scientific literacy measurement (SliM) based on media coverage. *Public Understanding of Science (Bristol, England)*, 21(6), 759–773. <https://doi.org/10.1177/0963662510377562>
- Scott, W. A. (2009). Scott's Pi. In K. Krippendorff, & M. A. Block (Eds.), *The content analysis reader* (pp. 347–349). SAGE.
- Shanahan, M. (2009). Time to adapt? Media coverage of climate change in non-industrialised countries. In T. Boyce & J Lewis (Eds.), *Climate change and the media* (pp. 145–147). Peter Lang.
- Similarweb. (2022a). Telemundo traffic. <https://www.similarweb.com/website/telemundo.com/#traffic>
- Similarweb. (2022b). Univision traffic. <https://www.similarweb.com/website/univision.com/#traffic>

- Soto-Vásquez, A. D. (2020). *Mobilizing the U.S. Latinx vote: Media, identity, and politics* (1st ed.). Routledge. <https://doi.org/10.4324/9780367816506>
- Srinivasan, T., Sutton, E. J., Beck, A. T., Cuellar, I., Hernandez, V., Pacyna, J. E., Shaibi, G. Q., Kullo, I. J., Lindor, N. M., Singh, D., & Sharp, R. R. (2021). Integrating genomic screening into primary care: Provider experiences caring for Latino patients at a community-based health center. *Journal of Primary Care & Community Health*, *12*, 21501327211000242. <https://doi.org/10.1177/21501327211000242>
- Subervi-Velez, F. A. (1999). Spanish-language television coverage of health news. *Howard Journal of Communications*, *10*(3), 207–228. <https://doi.org/10.1080/106461799246825>
- Subervi-Velez, F. A. (2008). *The mass media and Latino politics: Studies of U.S. media content, campaign strategies and survey research: 1984-2004*. Routledge.
- Takahashi, B., Pinto, J., Vigón, M., & Chavez, M. (2015). El ambiente y las noticias: Understanding U.S. Spanish language newsrooms' coverage of environmental issues. *International Journal of Hispanic Media*, *8*, 2–14.
- Telemundo. (2019). Una mujer se somete a una mastectomía doble y su diagnóstico estaba equivocado. <https://www.telemundo.com/shows/un-nuevo-dia/salud/una-mujer-se-somete-una-mastectomia-doble-y-su-diagnostico-estaba-equivocado-tmna3139240?image=8922513>
- Tercyak, K. P., O'Neill, S. C., Roter, D. L., & McBride, C. M. (2012). Bridging the communication divide: A role for health psychology in the genomic era. *Professional Psychology, Research and Practice*, *43*(6), 568–575. <https://doi.org/10.1037/a0028971>
- Univision. (2015). Los Científicos Desvelan la “Piedra Rosetta” del Cáncer de Prostata. <https://www.univision.com/noticias/salud/los-cientificos-desvelan-la-piedra-rosetta-del-cancer-de-prostata>
- Univision. (2020). *Influye el tipo de sangre en la susceptibilidad al covid-19*. Estudios sugieren que sí. <https://www.univision.com/noticias/salud/influye-el-tipo-de-sangre-en-la-susceptibilidad-al-covid-19-estudios-sugieren-que-si>
- U.S. Census Bureau. (2021). *QuickFacts: United States*. <https://www.census.gov/quickfacts/table/US/RHI725219>
- Velasco-Mondragon, E., Jimenez, A., Palladino-Davis, A. G., Davis, D., & Escamilla-Cejudo, J. A. (2016). Hispanic health in the USA: A scoping review of the literature. *Public Health Reviews*, *37*(1), 31. <https://doi.org/10.1186/s40985-016-0043-2>
- Vidal-Ortiz, S., & Martínez, J. (2018). Latinx thoughts: Latinidad with an X. *Latino Studies*, *16*(3), 384–395. <https://doi.org/10.1057/s41276-018-0137-8>
- Villafañe, V. (2020). Passing 10 million subscribers, Telemundo becomes top U.S. broadcast network on YouTube, regardless of language. *Forbes*. <https://www.forbes.com/sites/veronicavillafane/2020/07/02/passing-10-million-subscribers-telemundo-becomes-top-us-broadcast-network-on-youtube-regardless-of-language/>
- Viswanath, K., & Arora, P. (2000). Ethnic media in the United States: An essay on their role in integration, assimilation and social control. *Mass Communication and Society*, *3*(1), 39–56. https://doi.org/10.1207/S15327825MCS0301_03
- Wilkin, H. A., & Ball-Rokeach, S. J. (2006). Reaching at risk groups: The importance of health storytelling in Los Angeles Latino media. *Journalism*, *7*(3), 299–320. <https://doi.org/10.1177/1464884906065513>
- Wilkinson, K. T. (2015). *Spanish-language television in the United States: Fifty years of development*. Routledge.
- Wöhlke, S., & Perry, J. (2021). Responsibility in dealing with genetic risk information. *Social Theory & Health*, *19*(1), 21–42. <https://doi.org/10.1057/s41285-019-00127-8>
- Yu, S. S. (2016). Instrumentalization of ethnic media. *Canadian Journal of Communication*, *41*(2), 343–352. <https://doi.org/10.22230/cjc.2016v41n2a3019>
- Zaller, J. R. (1992). *The nature and origins of mass opinion*. Cambridge University Press.
- Zimmermann, B. M., Aebi, N., Kolb, S., Shaw, D., & Elger, B. S. (2019). Content, evaluations and influences in newspaper coverage of predictive genetic testing: A comparative media content analysis from the United Kingdom and Switzerland. *Public Understanding of Science*, *28*(3), 256–274. <https://doi.org/10.1177/0963662518816014>