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The Visibility of Women Experts in the Chilean Press During COVID-19

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Abstract

Few studies at the Ibero-American level have delved into the gender gaps present in expert and academic sources in the media. Therefore, through a media content analysis, 1,069 news items related to COVID-19 from three Chilean newspapers were analyzed, and 2,844 primary and secondary sources were identified, of which the minority were women. Therefore, in line with the objective of this study, low visibility of Chilean academics, experts, and politicians as predominant sources during the pandemic was observed, although positive advances in the use of feminine names to refer to them were identified.

Keywords

women in science, science, media, press, COVID-19 pandemic

The media plays a decisive role in presenting and offering visibility to the people who dedicate themselves to scientific work, influencing the presence and image of women in academia (Steinke et al., 2008). However, various studies carried out in Europe and Latin America, primarily using the content analysis method, have indicated a low presence of women researchers in media coverage (Bezunartea et al., 2012; Kitzinger, Chimba, et al., 2008; Kitzinger, Haran, et al., 2008; Mena Young, 2018; Ramalho et al., 2012; Zurita, 2017).

Looking back at scientific writers in the press during the 19th century, Ramírez (2020) observes that they had to confront orthodox models of knowledge transmission

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in the field of journalism where men's voices prevailed. In Chile and its Latin American historical context, women's press arose in a public space of exclusion, and its development provided valuable elements that currently contribute to the field of research (Montero, 2018).

In the 1980s, authors such as Fagoaga and Secanella (as cited in Ruiz, 1988) investigated how women were not part of the agenda and rarely served as spokespersons for organizations and were thus excluded as a source of information in the media. In this sense, the press had been masculinized; consequently, women were not regarded as part of the audience. A 1990 study on news coverage by women in the Ecuadorian press concluded that greater representation of women in the news implies a structural change, leading to greater participation by women in the spheres of power (Landázuri, 1990). Five years later, Gil (1995) spoke of an "invisible visibility," as in the 1990s the participation of women journalists in the mass media increased, although this represented a minimal effect on the society and did not impact the visibility given to women by the media.

The issue concerning gender equity in spokespersons manifests in an androcentric perspective in the media's selection of their academic sources (Mena Young, 2018) and even political ones (Hudson et al., 2022). This phenomenon is directly related to the gaps present in academia where time was needed to recognize the work of women (Maroto-Vela, 2018). Women's incorporation in the academic field has been slow, starting in the late 19th and early 20th century with the initial participation of female students, professors, and researchers (Guil Bozal, 2016).

This uneven panorama does not vary much between countries and continents. For example, in Spain, only 20% of female researchers hold management positions at centers and 35% are project leaders (Comisión de Mujeres y Ciencia del CSIC, 2020). Moreover, in Chile, only 34% of research centers are managed by women, 33% of scientific projects are led by women researchers (Agencia Nacional de Investigación y Desarrollo, 2023), and 18.6% of university presidents are women (Ministry of Education & Department of Higher Education, 2023).

Gender inequality in the field of knowledge has persisted over the years and notably intensified during COVID-19, primarily affecting mothers (Hirsh et al., 2020; Pereira, 2021). According to a study conducted in Brazil by Staniscuaski et al. (2020), during the COVID-19 pandemic, male academics—especially those with no children—were the least affected group in their research performance and productivity compared with their women colleagues who were mothers of young children. This phenomenon is not limited to the COVID-19 era but has occurred throughout history (Blair-Loy, 2003; Elsevier, 2020).

In the pandemic context, social inequalities became more prominent (Butler, 2022; Sui & Paul, 2023). The health crisis not only led to a health issue but was also an interaction of social, economic, psychological, and environmental problems, among others, in which systemic social inequity played a fundamental role (Arnold et al., 2020). In Chile, the first COVID-19 infection occurred on March 3, 2020, and as in many other countries worldwide, this meant implementing policies that translated into containment measures such as prolonged lockdowns that impacted education, work, and

social lives (Rámirez-Pereira et al., 2021). The socioeconomic impact meant a 5.8% GDP decrease in 2020. Women were the most affected, with a 12.5% unemployment rate (Dirección de Presupuestos de Chile DIPRES, 2022). As a result, mental health deteriorated among Chilean women, due to their caregiver roles, economic fragility, and household responsibilities (Borrescio-Higa & Valenzuela, 2021).

Therefore, clear and accurate dissemination of COVID-19-related information was needed from the scientific and communication field based on clear interaction and in-depth exploration by the media, as required by the dialogue model (Trench & Bucchi, 2010). In this process, given its role as a social actor, the media had the mission of communicating science rigorously and thus considering equity among its expert sources (Mena Young, 2018).

Unlike Brazil, in Latin American countries such as Chile, no studies exist that could demonstrate the gender gap in the expert sources, particularly in such a complex context as lockdown. This study focuses on the analysis of Chilean women's visibility in all knowledge areas in news, interviews, and reports published by the national press during the first 6 months of the pandemic. The study aims to determine how many women—categorized as experts in their professional, academic, and political roles; and identified by knowledge areas and job titles—were selected as information sources to be consulted during the pandemic.

Gender Gap Among Expert Sources in the Press: Before and After COVID-19

Although there are few studies at the Ibero-American level, prior studies have shown that limited space is given to women scientists in the press. Bezunartea et al. (2012) conducted an analysis of 42 issues from 6 Spanish newspapers. Of the total press sample, 6% dealt with gender issues or featured women. Among these, only 0.28% corresponded to science. In the same year, Ramalho et al.'s (2012) study showed a low presence of Brazilian female scientists in media interviews. Although the studies were done in different continents, both coincide in that the low visibility of women in media does not match the increase of women in important leadership positions in the analyzed countries. That is, parity does not reach the news.

Later, Aladro Vico et al. (2014) carried out a mixed-method study on the presence and representation of Spanish women scientists in the press, concluding that the main Spanish newspapers provide little space to women scientists. Only 14.3% of the analyzed articles focused on women in science, while 70.7% focused on men, and 15% on both genders. One of the novel contributions of this study to this line of research is the analysis of the relation between the gender of the journalist who writes the article and that of the selected source, concluding that a greater presence of women writers does not influence the gender gap.

Taking some of the aforementioned studies as a reference, Mena Young (2018) published a content analysis of newspapers in Spain, Mexico, and Costa Rica. Her study determined that 21% of the 155 reports analyzed represented women scientists, and in parallel, it opened a new dimension that includes the gender-specific job title

used to refer to women in the scientific reports. The study demonstrated that male spokespersons have a greater number of gender-specific job title references than women to hierarchically organize their job positions. This new aspect is important since, as Castillo and Mayo (2019) point out, the debate on inclusive language has lately gained strength and depth as a result of the discussions of feminist organizations and of women that have again challenged our society's accepted practices. The debate between using the masculine job titles as a gender-neutral form encompassing all of humanity and the precise use of masculine and feminine gender markers is not only a discussion of a linguistic nature but also social, sociolinguistic, political, and cultural (Barker & Galasinski, 2001; Butler, 2004).

In Chile, Zurita's (2017) work examines the scientific visibility of women in the press, through the analysis of newspaper front pages. In their work, 433 front pages of five Chilean newspapers were analyzed; the headlines associated with women reached only 18.4%. Of that total, there was no presence of women in the headlines referring to science and technology.

A study that also contributes to the context of the gender gap in the Chilean press, while not referring to scientific sources, analyzed six media outlets between 2007 and 2015. The results evidenced that the participation of women as political news sources is relatively low, reaching only 16.8% in the sample. That study, similar to the one carried out by Aladro Vico et al. (2014), does not find a relationship between the journalist's gender and the sources' gender selection (Hudson et al., 2022).

The study titled "The Missing Perspectives of Women in COVID-19 News" (Kassova, 2020) found that in countries such as the United Kingdom, the participation of women as expert sources in the media was three times lower than for men, and only 25% of the citations referring to COVID-19 articles belonged to women. The number of women experts cited from countries such as India, Kenya, Nigeria, South Africa, and the United States did not exceed 20%.

According to the figures provided by the Global Media Monitoring Project (2020), the presence of women as subjects, sources, and journalists in COVID-19-related stories is greater than in stories that are not about the pandemic (28% during the COVID period versus 25% in the no-COVID period). However, the quality of the content, from a gender perspective, is inferior. It is likely that the presence of women is focused mainly on social and legal topics rather than on spokesperson roles. Moreover, the same report states that television stories with women at the center decreased from 6% in the no-COVID period to 2% during COVID-19.

Although not focused on press analysis, one of the most recent studies on the visibility of women academics concludes that men have a greater presence as disseminators on Facebook and Twitter accounts linked to prestigious universities such as Harvard, Oxford, and Barcelona. However, in some cases, women researchers outnumber men (Eizmendi-Iraola & Peña-Fernández, 2023).

The above-mentioned phenomenon regarding the unequal visibility between men and women experts and academics has been observed across the world, and journalism education could be considered a key stage in the establishment of a gender perspective in students through courses that open dialogue. This would allow professionals to have

a reflective and integrative view regarding stereotypes, social representations, and the role of the media in making women researchers visible (Alarcón & Romero, 2016; Martín et al., 2016).

Selection of Sources With a Gender Perspective

As for the journalistic profession itself, the representation of spokespersons should be balanced in the selection of sources, where women experts or representatives of women's groups are interviewed. Moreover, the language used would have to appeal to equity in all its forms, such as the use of the concept of "people" instead of "men." In addition, as Franks and Howell (2019) point out, the visibility of women in the media also depends on the presence and role that they are given in the news, where they have been mostly considered victims rather than experts.

Various studies have consistently shown that women are less frequently consulted as news sources (Cann & Mohr, 2001; Global Media Monitoring Project, 2015; Ross, 2007; Ross et al., 2018; Yun et al., 2007). Meanwhile, men constitute most sources cited and interviewed, particularly in certain key areas, such as politics, business, and sports (Global Media Monitoring Project, 2015; Price & Payne, 2019; Ross, 2007).

As Shine (2022) states, historically, the imbalance between men and women sources was justified due to men's dominance in newsrooms and the lack of women in particular roles and industries. However, despite the increasing number of women participating in the labor market, including the journalism profession, this change has not translated into women's inclusion and representation in the news in recent decades.

At best, women are underrepresented as sources of media information, and at worst, they are referred to as victims; introduced in terms of their association to men; or, as stated by Gonzalez et al. (2017), used as decoration, especially in photographs accompanying science stories (Ross & Carter, 2011; Zoch & Turk, 1998). However, the study conducted by Greve-Poulsen et al. (2023) shows that the audience finds men and women equally competent and persuasive when cited as sources of information.

Armstrong (2004) argued that the dominance of men in the newsroom ensures that male sources receive more mentions and are placed more prominently in news stories. Six years later, another study by Chimba and Kitzinger (2010) revealed that in science, engineering, and technology, journalists focus on the appearance of women scientists to sexualize the image of disciplines that have been largely considered male spheres. Hence, some scholars reveal that journalistic action can be justified based on the unavailability of women as public experts, even in developed countries, such as Finland (Niemi & Pitkänen, 2017) and the United States (Colwell et al., 2020).

Nonetheless, research related to the visibility of women researchers and academics in the media has shown that the existing gender gap among spokespersons is not associated with the gender of the journalist who writes the news or report since the selection of sources is similar among men and women (Aladro Vico et al., 2014; Hudson et al., 2022).

The gender underrepresentation is so high that interventions have been necessary to increase the awareness of gender bias toward women in science (Pietri et al., 2017).

The rationale for such a move is evident, for without deliberate efforts to seek out the voices of women scientists, women's expert voices will continue to be underrepresented in the news (Lukanda, 2021).

Generally, research indicates that the source–journalist relationship is complicated, often including both positive and negative aspects (Besley & Nisbet, 2013; Palmer, 2017; Walsh-Childers et al., 2011). According to Reed (2001), the relationship between scientists and journalists has historically been one of conflict and tension, as they tend to disagree on fundamental points, such as the importance of the news, appropriate time to publish it, and precision in the treatment of the subject. However, a study by Peters et al. (2008), based on an extensive survey involving scientists from France, Germany, Japan, the United Kingdom, and the United States, challenged the traditional understanding of the scientist–journalist relationship and discovered that "interactions between scientists and journalists are more frequent and smoother than previously thought" (p. 25).

Another study showed that journalists repeatedly contacted researchers who had been frequently cited in the past and developed a profile as a news source (Albæk, 2011). This study is reinforced by Vandenberghe et al. (2020), who showed that journalists tended to use the sources they knew best and who were likely to provide interesting feedback. Source diversity was generally a "marginal criterion" for most journalists.

Shine (2022) states that, so far, research on the sources of information used by journalists has focused primarily on newsrooms and journalists, rather than considering the views of women sources or potential women sources, that is, the effects of the attitudes of women scientists on their participation in the media has been rarely examined. The study conducted by the same author then showed that most of the women academics interviewed were willing to be quoted as expert sources in the media. Furthermore, they recognized the importance of sharing their research with the wider community and the benefits of doing so for their own profile and career progression. However, factors such as feeling obligated to do so, lack of confidence in their abilities to communicate their messages, caution toward the media based on the perceived need to deliver an accurate message, and lack of time are factors that could influence their attitudes toward the press (Shine, 2022).

To gauge the gender representation in Chilean media sources, the present study focused on the following research question: *How many women experts were used as predominant sources, according to the diverse knowledge areas, in news, interviews, and reports published by the Chilean press during the COVID-19 pandemic?* In addition, we wanted to assess which professional roles were highlighted so we asked: *When women are included as sources, which of their roles (professional, academic, or political) were referenced in the Chilean media coverage during the COVID-19 pandemic?*

Method

The most widely read Chilean newspapers (digital versions) were extensively reviewed using the *NexNews* search engine, considering the search and selection interval from

March 3, 2020 (first COVID-19 infection in Chile) to August 31, 2020. That is, the assessment explored the first half of 2020, the most critical moment of the pandemic when key expert sources were consulted.

A quantitative content analysis was carried out incorporating press releases, interviews, and reports related only to COVID-19 in Chile. The selection included the national newspapers *Las Últimas Noticias (LUN), El Mercurio*, and *La Tercera*. All of them are daily newspapers with print and digital versions, with a dominant status in the country, including both national and international coverage, according to the Chilean Media Agency Association.

The news, interviews, and reports were organized and coded in a data matrix based on the prior categories of the Draw a Scientist Test Method (DAST) (Vernal-Vilicic & Valderrama, 2020) to capture publication type, author gender, expert sources and their gender, the sources' area of knowledge (based on OECD disciplines), and the gender markers used to refer to them (feminine, or masculine as gender-neutral). We also included emergent categories such as the source's geographical location, source order (primary or secondary), source role (professional, academic, or political), and the represented sector (public or private). For the analysis, a numerical value was assigned to each category, using number 1 for its presence and 0 for its absence.

Following this process, a total of 1,069 publications were analyzed. Primary sources are people mentioned directly and/or repeatedly, due to their expertise or name, within the main elements of the journalistic text (headline, lead, main image). Each source was categorized according to gender (men and women). It should be noted that such a selection was determined by the name of the expert source or author, leaving the option "no identification" for undetermined sources, which was not a limitation for the study's objective. Moreover, the role of the expert sources was classified according to the field they represented in the text: "professional," if they came from a company or institution that is not a university institution; "academic," if they belonged to a university, or "political," if they were government or municipal spokespersons. Also, job titles were categorized to note the main job titles established by the publication's author when referring to the source. In Spanish, most job titles (doctor, expert, academic, researcher, scientist, and professor) are gender-specific (see Table A1 in Appendix).

Coding Process

The matrix's elaboration incorporated the feedback provided by two researchers with experience in prior studies on this topic. After that, the matrix was checked and organized by a female sociologist who specializes in statistics. The study was approved by the bioethics committee of Universidad Andrés Bello de Chile.

Following this process, the two authors of the study refined the coding protocol and variable definitions through practice rounds and test coding on randomly selected articles. The same two authors independently coded the rest of the 1,069 sample study articles. Coder 1 worked on the entire sample from the newspaper LUN and half of the sample from the newspaper *El Mercurio*, while Coder 2 worked on the sample from

Table 1. Sample Characterization According to Source Type and Medium.

Source type	LUN	%	El Mercurio	%	La Tercera	%	Total	%
Primary source	412	67.0	968	67.3	738	93.3	2,118	74.5
Secondary source	203	3.0	470	32.7	53	6.7	726	25.5
Total	615	100.0	1,438	100.0	791	100.0	2,844	100.0

Note. $N = 2,844$.

the newspaper *La Tercera* and the other half of the selected sample from the newspaper *El Mercurio.*

To assess the intercoder reliability of the protocol for the study sample, the two coders double-coded 5% of the articles randomly chosen. Krippendorff's (2004) alpha, a widely recognized measure of reliability analysis, was computed for each variable. Final reliability coefficients were judged to be acceptable with all variables above .80, as specified in Table 2A in the Appendix.

Results

Sample Distribution

A total of 1,069 publications were analyzed. These news, interviews, and reports were distributed as follows: 44.2% correspond to *El Mercurio*, 28.1% to LUN, and 27.7% to *La Tercera*. Table 3A presents the sample's distribution, including the newspaper's name and the publication type: news (80.5%), interviews (13.2%), and reports (6.2%). In total, 2,844 expert sources were identified.

Evident Gender Gap in Chile's Expert Sources

A total of 2,844 sources were identified in the publications and analyzed to answer the 2 research questions. Table 1 shows that of this total, 74.5% and 25.5% correspond to primary and secondary sources, respectively. The distribution established a greater presence of primary sources in *La Tercera* (93.3%), which is comparatively higher than the presence of primary sources in *LUN* (67%) and *El Mercurio* (67.3%).

Next, the primary sources were categorized according to their gender. The general distribution established that the presence of men (69.7%) is notably higher than that of women (30.2%). Table 2 and Figure 1 show the gender gap present in the primary sources, according to the analyzed sample.

The data also established that of the total primary sources, 39.7% correspond to professional sources of the private sector, and these are mostly men (27.6%) compared with the presence of women (12.2%). They are followed by academic sources of the private sector (22.6%), showing a similar gap with a greater presence of men (15%) in comparison to women (7.6%). Academic sources from the public sector (16.1%), similarly, show the same difference in relation to the gender variable (Table 3). Thus, the

Table 2. Characterization of Primary Sources According to Gender and Media.

Primary source gender	LUN	%	El Mercurio	%	La Tercera	%	Total	%
Men	292	70.9	685	70.8	499	67.6	1,476	69.7
Women	120	29.1	281	29.0	239	32.4	640	30.2
Undefined	0	0.0	2	0.2	0	0.0	2	0.1
Total	412	100.0	968	100.0	738	100.0	2,118	100.0

Note. $N = 2{,}118$.

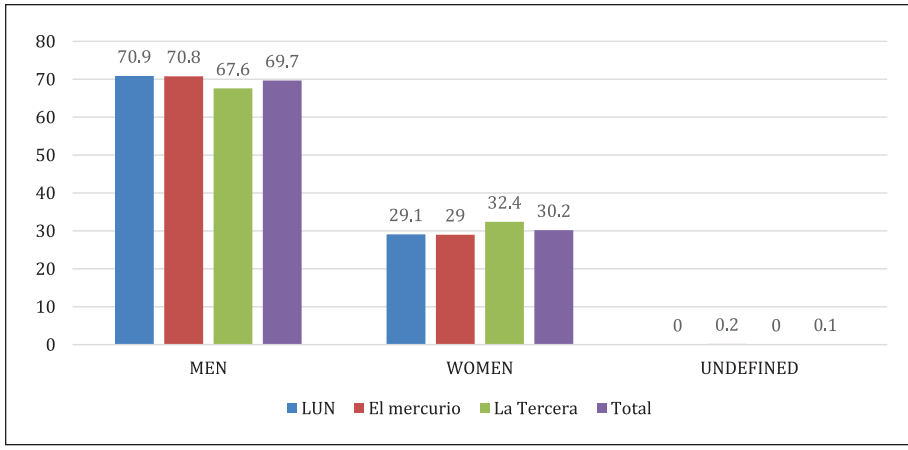

Figure 1. Characterization of Primary Sources According to Gender and Media Type.

general distribution showed a greater presence of men in professional, academic, and political sources, regardless of the sector they belong to.

Within the categorization of primary sources, a list of their geographical location was established, considering the existing centralism in Chile. The data revealed that most of the sources analyzed are located in the country's capital city (91.5%), whereas spokespersons from other regions represent only 8.5% of the total.

Another important finding that complements the results of the gap between the sources is related to the byline, with the possibility of one or more authors for the same piece. The general distribution identified 979 bylines with authors identifiable as men or women, 235 not specifying the author's gender, and 48 without a named author. The analysis of the total authorship established a greater presence of male authors (41.3%) than female authors (36.2%). Even though the gender gap favors men, it is not as wide and does not influence the low visibility of women as news sources.

Health and Social Sciences: The Main Knowledge Areas of Women Experts

The results established a greater presence of women as primary sources linked to the area of health (61.1%), followed by social sciences (20.9%), and biological sciences

Table 3. Characterization of Primary Sources, According to Their Role (Professional-Academic-Political) and the Source Sector (Public–Private).

Primary source role and sector	LUN	%	El Mercurio	%	La Tercera	%	Total	%
Women professional (S/private)	52	12.6	111	11.5	93	12.6	256	12.1
Men professional (S/private)	125	30.3	248	25.6	211	28.6	584	27.6
Women professional (S/public)	15	3.6	29	3.0	27	3.7	71	3.4
Men professional (S/public)	30	7.3	46	4.8	38	5.1	114	5.4
Women academic (S/private)	22	5.3	86	8.9	54	7.3	162	7.6
Men academic (S/private)	60	14.6	177	18.3	80	10.8	317	15.0
Women academic (S/public)	27	6.6	34	3.5	34	4.6	95	4.5
Men academic (S/public)	58	14.1	97	10.0	90	12.2	245	11.6
Women political	4	1.0	31	3.2	33	4.5	68	3.2
Men political	19	4.6	109	11.3	78	10.6	206	9.7
Total	412	100.0	968	100.0	738	100.0	2,118	100.0

Note. $N = 2{,}118$.

(8.0%), among others. Table 4 shows the distribution per knowledge area according to the primary source's role, whether academic, professional, or political. Of the predominant sources, health sciences sources are mostly professional women experts and social sciences sources are academic women experts.

Predominant Job Title Gender Marker in the Primary Sources

In Spanish, most job titles are gendered. This means they are differentiated by masculine and feminine gender markers, with the "-a" ending for the latter (e.g., doctor [masc.], doctor*a* [fem.]); however, the masculine form is also the gender-neutral form, which is generally and culturally used to refer to both genders. Thus, this feature is of great importance to determining differences in the treatment of men and women based on the job titles present in texts.

Job titles were quantified as long as they were used once. The general distribution established the presence of 10 main job titles counted in 248 women references. As Table 5 shows, there was a tendency toward the use of gender-specific job titles to refer to expert sources, regardless of the great existing gap.

Discussion

Despite the contribution that the media could have in terms of gender equity, this study demonstrates that the visibility of women experts in the Chilean press remains low. This phenomenon coincides with the series of studies conducted during different time periods, both in Ibero-America and at the global level (Aladro Vico et al., 2014; Bezunartea et al., 2012; Cann & Mohr, 2001; Global Media Monitoring Project, 2015; Mena Young, 2018; Ramalho et al., 2012; Ross, 2007; Ross et al., 2018; Yun et al., 2007). That leads us to conclude that the gendered panorama in news coverage has not changed in comparison to previous years.

Table 4. Characterization of Women Primary Sources, According to Knowledge Area and Role Identified for Each Spokesperson.

Knowledge area role (professional, academic, or political)	LUN	%	El Mercurio	%	La Tercera	%	Total	%
Exact sciences: Academic	2	1.7	5	1.7	1	0.4	8	1.3
Exact sciences: Professional	0	0.0	1	0.3	0	0.0	1	0.2
Exact sciences: Politics	0	0.0	0	0.0	0	0.0	0	0.0
Earth sciences: Academic	0	0.0	0	0.0	1	0.4	1	0.2
Earth sciences: Professional	0	0.0	6	2.1	1	0.4	7	1.1
Earth sciences: Politics	0	0.0	0	0.0	0	0.0	0	0.0
Biological sciences: Academic	8	6.7	9	3.1	9	3.8	26	4.1
Biological sciences: Professional	1	0.8	13	4.5	10	4.3	24	3.8
Biological sciences: Politics	0	0.0	0	0.0	1	0.4	1	0.2
Health sciences: Academic	37	31.1	54	18.9	45	19.1	136	21.3
Health sciences: Professional	56	47.1	73	25.5	91	38.7	220	34.4
Health sciences: Politics	3	2.5	18	6.3	14	6.0	35	5.5
Environmental Sciences: Academic	0	0.0	0	0.0	0	0.0	0	0.0
Environmental sciences: Professional	0	0.0	1	0.3	1	0.4	2	0.3
Environmental sciences: Politics	0	0.0	1	0.3	0	0.0	1	0.2
Technology: Academic	0	0.0	0	0.0	0	0.0	0	0.0
Technology: Professional	0	0.0	0	0.0	0	0.0	0	0.0
Technology: Political	0	0.0	0	0.0	0	0.0	0	0.0
Chemistry: Academic	0	0.0	0	0.0	1	0.4	1	0.2
Chemistry: Professional	0	0.0	0	0.0	0	0.0	0	0.0
Chemistry: Political	0	0.0	0	0.0	0	0.0	0	0.0
Social sciences: Academic	3	2.5	45	15.7	18	7.7	66	10.3
Social sciences: Professional	4	3.4	41	14.3	16	6.8	61	9.5
Social sciences: Political	1	0.8	5	1.7	1	0.4	7	1.1
Arts and humanities: Academic	0	0.0	1	0.3	8	3.4	9	1.4
Arts and humanities: Professional	0	0.0	0	0.0	1	0.4	1	0.2
Arts and humanities: Politics	0	0.0	0	0.0	3	1.3	3	0.5
Others: Professional	1	0.8	2	0.7	0	0.0	3	0.5
Other: Academic	3	2.5	9	3.1	0	0.0	12	1.9
Other: Political	0	0.0	2	0.7	13	5.5	15	2.3
Total	119	100.0	286	100.0	235	100.0	640	100.0

Note. $N = 640$.

The COVID-19 pandemic not only caused a global health crisis but also affected interpersonal and social relations (Arnold et al., 2020). School closings and teleworking particularly affected the Chilean women fulfilling caregiving roles (Rámirez-Pereira et al., 2021) and subsequently their professional functions. When looking at the visibility of women as expert sources, our results showed that given the pandemic context, those in the health area predominated. However, it was surprising that the area of social sciences, specifically from the academic field, ranked second (and not much lower). The latter agrees with Arnold et al. (2020), who point out that the pandemic was a social issue, and therefore, it is likely that the press understood it as such.

Table 5. Identification of Main Job Titles to Refer to Women Primary Sources.

Women primary source job title (in Spanish, with English equivalent)	LUN	%	El Mercurio	%	La Tercera	%	Total	%
DOCTORA (women doctor)	45	47.9	34	28.1	17	24.6	96	33.8
ACADÉMICA (women academic)	19	20.2	48	39.7	19	27.5	86	30.3
INVESTIGADORA (women researcher)	9	9.6	18	14.9	9	13.0	36	12.7
EXPERTA (women expert)	2	2.1	8	6.6	13	18.8	23	8.1
PROFESORA (women professor)	7	7.4	5	4.1	4	5.8	16	5.6
ACADÉMICO (men academic)	2	2.1	4	3.3	7	10.1	13	4.6
DOCTOR (men doctor)	7	7.4	0	0.0	0	0.0	7	2.5
PROFESIONAL (men or women professional)	3	3.2	2	1.7	0	0.0	5	1.8
CIENTÍFICA (women scientist)	0	0.0	2	1.7	0	0.0	2	0.7
CIENTÍFICO (men scientist)	0	0.0	0	0.0	0	0.0	0	0.0
Total	94	100.0	121	100.0	69	100.0	284	100.0

When women are used as sources in professional and academic roles they come primarily from the private sector, representing private hospitals, companies, or private universities. That logic responds to the Chilean neoliberal model, in which such private institutions have larger and better-funded teams linked to communication departments that enable the visibility of their professionals and academics. As Czechowska-Derkacz et al. (2021) state, it has been shown that research and science dissemination in the media are key to increasing scientific visibility and helping organizations' positioning.

When looking at the regional distribution of sources, we can conclude that the dominant sources come mostly from the Chilean capital and not from other regions, evidencing Chile's centralism. This could also be explained by the change in journalistic functions in the pandemic, which required access to official journalistic sources located in the Chilean capital (Martin-Neira, 2022). Nevertheless, the findings show that elite institutions and capital-based voices are privileged in the news, consistent with prior research.

Furthermore, through the analysis of job titles for women sources in the press, the study concludes that women are mostly referred to by gender-specific job titles. Such results show that, in addition to being less frequently used as sources than men, when women are mentioned, it is done with a feminine gender marker to distinguish their roles. Some might see this as a more optimistic result, while others might argue that this creates further gender separation.

Similarly to previous studies (Aladro Vico et al., 2014; Hudson et al., 2022), it was found that the gender difference between the publications' authors does not influence the selection of sources per gender. *The Palgrave International Handbook of Woman and Journalism* (Byerly, 2013) shows that there is a clear gender gap at a global level in the journalism profession, which might raise further questions about gender access, mobility, and marginalization.

When it comes to equity—in the media, academia, or the labor market—there are always some challenges and institutional resistance. Sara Ahmed (2021) calls this phenomenon "brick walls," that is, a wall that appears as a response to transforming something that exists already. It is imperative that media organizations and journalism education address gender issues and establish equity of sources, contributing to tearing down the brick walls for current and future journalism professionals (Alarcón & Romero, 2016; Shine, 2022).

Appendix

Table A1. Study Variables Summary.

Variable	Description
Publication type	It identifies the type of publication to be analyzed (news, report, or interview).
Authors	It establishes the number and gender of those who write the press publication: men, women, undefined.
Source type	It identifies if the expert source is a primary or secondary source, according to their protagonism in the journalistic text.
Source gender	It identifies the source type: men, women, or undefined.
Geographical location	It establishes the geographical location of the source: from the capital or another Chilean region.
Knowledge area	It identifies the knowledge area of the sources analyzed. The main classification for knowledge areas is the following: Exact Sciences, Earth Sciences, Biological Sciences, Environmental Sciences, Political, Technology, Chemistry, Social Sciences, Arts and Humanities.
Source role	It identifies the field represented by the expert sources in the journalistic text: professional, that is, linked to a company or institution that is not a university organism; academic, when it belongs to a university; or political, when it belongs to a governmental or municipal entity.
Sector	It identifies if the source works in the public or private sector, according to the field they represent.
Job title	It identifies the main job titles established by the press publication's author to refer to their sources. In Spanish, most job titles (doctor, expert, academic, researcher, scientist, and professor) are gender-specific.

Table A2. Reliability Calculations for Key Variables Utilizing Krippendorff's Alpha.

Variable	Alpha level observed
Publication type	.93
Authors	.97
Source type	.80
Source gender	.93
Geographical location	.91
Feminine knowledge area	.88
Masculine knowledge area	.86
Source role	.89
Sector	.93
Femenine Job title	.84
Masculine Job title	.88

Table A3. Sample Characterization According to Publication Type.

Type of publication	LUN	%	El Mercurio	%	La Tercera	%	Total	%
Report	3	1.0	4	0,8	59	19.9	66	6.2
Interview	63	21.0	13	2.7	65	22.0	141	13.2
News	234	78.0	455	96.2	172	58.1	861	80.5
No information	0	0.0	1	0.2	0	0.0	1	0.1
Total	300	100.0	473	100.0	296	100.0	1,069	100.0

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References

Agencia Nacional de Investigación y Desarrollo. (2023). *Female participation report 2018–2022*. https://s3.amazonaws.com/documentos.anid.cl/cti/Reporte_Participacion_2023.pdf

Ahmed, S. (2021). *Vivir una vida feminista* [Living a feminist life]. Caja Negra Editora.

Aladro Vico, E., Padilla Castillo, G., Requeijo Rey, P., Semova, D. J., García Agustín, J., García Nieto, M. T., & Mónica Viñarás Abad, M. (2014). La presencia y representación de la mujer científica en la prensa española [The presence and representation of female scientists in the Spanish Press]. *Revista Latina de Comunicación Social*, *69*, 176–194. https://doi.org/10.4185/RLCS-2014-1007

Alarcón, M. C., & Romero, J. (2016). Formación en comunicación y género en las universidades [Training in communication and gender in universities]. *Actas de Periodismo y Comunicación*, *2* (1), 1–17.

Albæk, E. (2011). The interaction between experts and journalists in news journalism. *Journalism*, *12*(3), 335–348. https://doi.org/10.1177/1464884910392851

Armstrong, C. L. (2004). The influence of reporter gender on source selection in newspaper stories. *Journalism and Mass Communication Quarterly*, *81*(1), 139–154. https://doi.org/10.1177/107769900408100110

Arnold, M., Pignuoli, S., & Thumala, D. (2020). Las ciencias sociales sistémicas y la pandemia del coronavirus [Systemic social science and the coronavirus pandemic]. *Cinta de Moebio*, *68*, 167–180. https://doi.org/10.4067/s0717-554x2020000200167

Barker, C., & Galasinski, D. (2001). *Cultural studies and discourse analysis: A dialogue on language and identity*. Sage. https://doi.org/10.4135/9781446219249

Besley, J. C., & Nisbet, M. (2013). How scientists view the public, the media and the political process. *Public Understanding of Science*, *22*(6), 644–659. https://doi.org/10.1177/0963662511418743

Bezunartea, O., García, M., & Rodríguez, A. (2012). La mujer como cargo y como fuente en la prensa escrita. La paridad no llega a las noticias [Women as a position and as a source in the written Press. Parity does not reach the news]. *Ámbitos*, *21*, 233–256.

Blair-Loy, M. (2003). *Competing devotions: Career and family among women executives*. Harvard University Press. https://doi.org/10.4159/9780674021594

Borrescio-Higa, F., & Valenzuela, P. (2021). Gender inequality and mental health during the COVID19 pandemic. *International Journal of Public Health*, *66*, 1604220. https://doi.org/10.3389/ijph.2021.1604220

Butler, J. (2004). *Lenguaje, poder e identidad* [Excitable speech: A politics of the performative]. Síntesis.

Butler, J. (2022). *¿Qué mundo es este?* [What world is this?] Arcadia.

Byerly, C. M. (2013). *The Palgrave international handbook of women and journalism*. Palgrave Macmillan. https://doi.org/10.1057/9781137273246

Cann, D. J., & Mohr, P. B. (2001). Journalist and source gender in Australian television news. *Journal of Broadcasting and Electronic Media*, *45*(1), 162–174. https://doi.org/10.1207/s15506878jobem4501_10

Castillo, S., & Mayo, S. (2019). El lenguaje inclusivo como "norma" de empatía e identidad: Reflexiones entre docentes y futures profesores [Inclusive language as "norm" of empathy and identity: Reflections between professors and pre-service teachers]. *Literatura y Lingüística*, *40*, 377–391. https://doi.org/10.29344/0717621x.40.2072

Chimba, M., & Kitzinger, J. (2010). Bimbo or boffin? Women in science: An analysis of Media representations and how female scientists negotiate cultural contradictions. *Public Understanding of Science*, *19*(5), 609–624. https://doi.org/10.1177/0963662508098580

Colwell, R., Bear, A., & Helman, A. (Eds.). (2020). *Promising practices for addressing the underrepresentation of women in science, engineering, and medicine: Opening doors*. The National Academies Press. https://www.nap.edu/read/25585/chapter/1

Comisión de Mujeres y Ciencia del CSIC. (2020). *Informe mujeres investigadoras* [Women researchers 2020 report]. http://mujeresconciencia.com/app/uploads/2020/07/informe_mujeres_investigadoras-2020.pdf

Czechowska-Derkacz, B., Łosiewicz, M., & Świerk, K. (2021). Methods for disseminating research and its popularization in the media—The impact of universities on society. *Media Literacy and Academic Research*, *4*(2).

Dirección de Presupuestos de Chile, DIPRES. (2022). *COVID-19: Evolución, efectos y políticas adoptadas en Chile y el mundo* [COVID-19: Evolution, effects, and policies adopted in Chile and the world]. https://www.dipres.gob.cl/598/articles-266625_doc_pdf.pdf

Eizmendi-Iraola, M., & Peña-Fernández, S. (2023). La visibilidad de las mujeres científicas en la comunicación externa de las universidades a través de las redes sociales [The visibility of women scientists in the external communication of universities through social networks]. *Doxa Comunicación*, *37*, 245–261.

Elsevier. (2020). *Gender report 2020: The researcher journey through a gender lens*. https://www.elsevier.com/connect/gender-report

Franks, S., & Howell, L. (2019). Seeking women's expertise in the UK broadcast news media. In C. Carter, L. Steiner, & S. Allan (Eds.), *Journalism, gender and power* (pp. 49–62). Routledge. https://doi.org/10.4324/9781315179520

Gil, K. (1995). Mujeres periodistas [Women journalists]. *Chasqui. Latin American Journal of Communication*, *51*, 78–80.

Global Media Monitoring Project. (2015). *Who makes the news?* World Association for Christian Communication. https://whomakesthenews.org/wp-content/uploads/who-makes-the-news/Imported/reports_2015/global/gmmp_global_report_en.pdf

Global Media Monitoring Project. (2020). *Who makes the news?* World Association for Christian Communication. https://whomakesthenews.org/wp-content/uploads/2022/03/GMMP-2020-Spa.FINAL-2022-0303.pdf

González, D., Mateu, A., Pons, E., & Domínguez, M. (2017). Women scientists as decor: The image of scientists in Spanish press pictures. *Science Communication*, *39*(4), 535–547. https://doi.org/10.1177/1075547017719074

Greve-Poulsen, K., Larsen, F. K., Pedersen, R. T., & Albæk, E. (2023). No gender bias in audience perceptions of male and female experts in the news: Equally competent and persuasive. *International Journal of Press/Politics*, *28*(1), 116–137. https://doi.org/10.1177/19401612211025499

Guil Bozal, A. (2016). Género y construcción científica del conocimiento [Gender and scientific construction of knowledge]. *Revista Historia de la Educación Latinoamericana*, *18*(27), 263–288. https://doi.org/10.19053/01227238.5532

Hirsh, C. E., Treleaven, C., & Fuller, S. (2020). Caregivers, gender, and the law: An analysis of family responsibility discrimination case outcomes. *Gender and Society*, *34*(5), 760–789. https://doi.org/10.1177/0891243220946335

Hudson, E., Porath, W., & Ortega-Gunckel, C. (2022). Periodismo, fuentes políticas y género en Chile. Una relación desproporcionada [Journalism, political Sources and gender in Chile. A disproportionate relationship]. *Cuadernos.info*, *52*(52), 204–205. https://doi.org/10.7764/cdi.52.37535

Kassova, L. (2020). *The missing perspectives of women in COVID-19 news*. https://www.iwmf.org/wp-content/uploads/2020/09/2020.09.23-The-Missing-Perspectives-of-Women-in-COVID-19-News.pdf

Kitzinger, J., Chimba, M., Williams, A., Haran, J., & Boyce, T. (2008). *Gender, stereotypes and expertise: How newspapers represent male and female scientists* [Report]. UK Resource Centre for Women in Science, Engineering and Technology, Cardiff University.

Kitzinger, J., Haran, J., Chimba, M., & Boyce, T. (2008). *Role models in the Media: An exploration of the views and experiences of women in science, engineering and technology* [Report]. UK Resource Centre for Women in Science, Engineering and Technology (UKRC), Cardiff University.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. Sage.

Landázuri, M. (1990). La mujer en la prensa [Women in the press]. *Chasqui: Revista Latinoamericana de Comunicación*, *34*, 33–36.

Lukanda, I. N. (2021). Women voices marginalised in media coverage of science in Uganda, both as authors and sources. *Journal of Science Communication*, *20*(2), A11. https://doi.org/10.22323/2.20020211

Maroto-Vela, M. (2018). Las mujeres en la ciencia y en las academias [Women in science and academia]. *Anales RANM*, *135*(2), 178–183. https://doi.org/10.32440/ar.2018.135.02.rev11

Martín, V., Ballesteros, C., & Etura, D. (2016). Igualdad de género y alfabetización mediática. Un estudio desde la educación inclusiva en el ámbito universitario [Gender equality and media literacy. A study from the perspective of inclusive education at the university level]. *Prisma Social*, *16*, 322–347.

Martin-Neira, J.-I. (2022). Las voces que hablan en el periodismo científico: Tipo de fuentes y temáticas que se presentan en la prensa escrita chilena. *Journal of Science Communication América Latina*, *5*(2), A04. https://doi.org/10.22323/3.05020204

Mena Young, M. (2018). Mujeres científicas en la prensa: Análisis de reportajes de ciencia en diarios de España, México y Costa Rica [Women scientists in the press: An analysis of science reports in Spanish, Mexican, and Costa Rican Newspapers]. *Posgrado y Sociedad*, *16*(1), 1–15.

Ministry of Education, & Department of Higher Education. (2023, March 7). *Department of Higher Education creates the first network of presidents of universities*. https://educacionsuperior.mineduc.cl/2023/03/07/subsecretaria-de-educacion-superior-crea-la-primera-red-de-rectoras-de-universidades-centros-de-formacion-tecnica-e-institutos-profesionales/

Montero, C. (2018). *Y también hicieron periódicos. Cien años de prensa de mujeres en Chile* [And they also made newspapers. One hundred years of women in the press in Chile]. Hueders.

Niemi, M. K., & Pitkänen, V. (2017). Gendered use of experts in the media: Analysis of the gender gap in Finnish news journalism. *Public Understanding of Science*, *26*(3), 355–368. https://doi.org/10.1177/0963662515621470

Palmer, R. A. (2017). The journalist and the murderer revisited: What interviews with journalism subjects reveal about a modern classic. *Journalism*, *18*(5), 575–591. https://doi.org/10.1177/1464884916636125

Pereira, M. D. M. (2021). Researching gender inequalities in academic labor during the COVID-19 pandemic: Avoiding common problems and asking different questions. *Gender, Work, and Organization*, *28*(Suppl. 2), 498–509. https://doi.org/10.1111/gwao.12618

Peters, H. P., Brossard, D., de Cheveigné, S., Dunwoody, S., Kallfass, M., Miller, S., & Tsuchida, S. (2008). Interactions with the mass media. *Science*, *321*(5886), 204–205. https://doi.org/10.1126/science.1157780

Pietri, E. S., Moss-Racusin, C. A., Dovidio, J. F., Guha, D., Roussos, G., Brescoll, V. L., & Handelsman, J. (2017). Using video to increase gender bias literacy toward women in science. *Psychology of Women Quarterly*, *41*(2), 175–196. https://doi.org/10.1177/0361684316674721

Price, J., & Payne, A. M. (2019). *Women for media report: "You can't be what you can't see."* Women's Press Leadership Institute Australia. https://c9ab9e33-e40f-4fa3b1bb-ae9876a6a477.filesusr.com/ugd/ee1ce5_88c20ce959044aab84737b1993c326ca.pdf

Ramalho, M., Polino, C., & Massarani, L. (2012). Do laboratório para o horário nobre: A cobertura de ciência no principal telejornal brasileiro. *Journal of Communication*, *11*(2), 1–9.

Ramírez, V. (2020). Las mujeres y la divulgación de la ciencia en Chile: Mediadoras de la circulación del saber en revistas culturales (1870–1900) [Women and the popularization of science in Chile: Mediators of the circulation of knowledge in cultural magazines (1870–1900)]. *Meridional: Revista Chilena de Estudios Latinoamericanos*, *13*, 15–40.

Rámirez-Pereira, M., Pérez Abarca, R., & Machuca-Contreras, F. (2021). Políticas públicas de promoción de salud en el contexto de la COVID-19, en Chile, una aproximación desde el análisis situacional [Public policies for health promotion in the context of COVID-19 in

Chile, a situational analysis approach]. *Global Health Promotion*, *28*(1), 127–136. https://doi.org/10.1177/1757975920978311

Reed, R. (2001). (Un-)professional discourse? Journalists' and scientists' stories about science in the Media. *Journalism*, *2*(3), 279–298. https://doi.org/10.1177/146488490100200310

Ross, K. (2007). The journalist, the housewife, the citizen and the press. *Journalism*, *8*(4), 449–473. https://doi.org/10.1177/1464884907078659

Ross, K., Boyle, K., Carter, C., & Ging, D. (2018). Women, men and news. *Journalism Studies*, *19*(6), 824–845. https://doi.org/10.1080/1461670X.2016.1222884

Ross, K., & Carter, C. (2011). Women and news: A long and winding road. *Media, Culture and Society*, *33*(8), 1148–1165. https://doi.org/10.1177/0163443711418272

Ruiz, J. (1988). *Concha Fagoaga and Petra María Secanella. Umbral de presencia de las mujeres en la prensa española* [Threshold of women's presence in the Spanish press]. Instituto de la Mujer.

Shine, K. (2022). Willing but wary: Australian women experts' attitudes to engaging with the news media. *Journalism*, *23*(11), 2364–2379. https://doi.org/10.1177/14648849211007038

Staniscuaski, F., Kmetzsch, L., Soletti, R. C., Reichert, F., Zandonà, E., Ludwig, Z. M. C., Lima, E. F., Neumann, A., Schwartz, I. V. D., Mello-Carpes, P. B., Tamajusuku, A. S. K., Werneck, F. P., Ricachenevsky, F. K., Infanger, C., Seixas, A., Staats, C. C., & de Oliveira, L. (2020). Gender, race and parenthood impact academic productivity during the COVID-19 pandemic: From survey to action. *Frontiers in Psychology*, *12*, Article 663252. https://doi.org/10.3389/fpsyg.2021.663252

Steinke, J., Long, M., Johnson, M. J., & Ghosh, S. (2008, August). *Gender stereotypes of scientist characters in television programs popular among middle school-aged children* [Paper presentation]. Annual Meeting of the Association for Education in Journalism and Mass Communication, Chicago, IL.

Sui, M., & Paul, N. (2023). Good guys became bad guys? Changing representations of Asians and other races in crime news during COVID-19. *Journalism & Mass Communication Quarterly*. Advance online publication. https://journals.sagepub.com/doi/abs/10.1177/10776990241238655

Trench, B., & Bucchi, M. (2010). Science communication, an emerging discipline. *Journal of Science Communication*, *9*(3), 1–5. https://doi.org/10.22323/2.09030303

Vandenberghe, H., D'Haenens, L., & Van Gorp, B. (2020). Women, ethnic minorities and newsworthiness: Journalists' perceptions. *Journalism*, *21*(2), 227–243. https://doi.org/10.1177/1464884917724300

Vernal-Vilicic, T. P., & Valderrama, L. B. (2020). Representación de la labor científica en dos continentes. DAST comparativo entre niños/as chilenos/as y españoles/as. *Chasqui. Revista Latinoamericana de Comunicación*, *144*, 263–282.

Walsh-Childers, K., Lewis, N. P., & Neely, J. (2011). Listeners, not leeches: What Virginia Tech survivors needed from journalists. *Journal of Mass Media Ethics*, *26*(3), 191–205. https://doi.org/10.1080/08900523.2011.581976

Yun, H. J., Postelnicu, M., Ramoutar, N., & Lee Kaid, L. (2007). Where is she? *Journalism Studies*, *8*(6), 930–947. https://doi.org/10.1080/14616700701556823

Zoch, L. M., & Turk, J. V. (1998). Women making news: Gender as a variable in source selection and use. *Journalism and Mass Communication Quarterly*, *75*(4), 762–775. https://doi.org/10.1177/107769909807500410

Zurita, M. (2017). *Las portadas de tu vida. Estudio portadas y mujeres* [The covers of your life. Study on covers and women]. University of Chile. https://www.docdroid.net/WAbXbGh/estudio-portadas-y-mujeres-lpv-final-pdf

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