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Digital communication in health as an educational practice: discrimination, oncology, and vulnerabilities of the LGBTQIAPN+ population in science education.

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ABSTRACT

The aim of this article is to analyse the strategies the health communication strategies of the profile @desrotulandoLGBT on Instagram, identifying patterns of institutional discrimination experienced by the LGBTQIAPN+ population in health services and their implications for Science Education, with special attention to the oncology context. Netnography was adopted as the methodological approach, suitable for investigating social practices in digital environments, with analysis of data collected between December 2024 and August 14, 2025. The corpus combined secondary data, consisting of posts, public interactions, and Instagram Insights metrics, with primary data generated by an open-access online form. The qualitative analysis employed deductive thematic analysis, triangulated with quantitative indicators of engagement. Eighty-six reports of discrimination in healthcare were identified, organized into six thematic categories: lesbian invisibility, HIV/STI stigma, transphobia and transvestiphobia, veiled homophobia, and microaggressions, discrimination in oncology, and other forms of structural stigma. Quantitative indicators showed a predominance of young adult audiences, 83.1% of views coming from non-followers, and 222 clicks on external links. These data are interpreted as partial indicators of communication reach, not as direct evidence of social mobilization. The findings document recurring patterns of institutional discrimination with measurable clinical implications, particularly in oncology, and suggest that evidence-based digital communication practices can contribute to the visibility of experiences of exclusion and to debates on professional training and inclusive public policies, within the methodological limitations of the study.

KEYWORDS: digital communication; education and science; counter-information; Cancer; sexuality.

Comunicação digital em saúde como prática educativa: discriminação, oncologia e vulnerabilidades da população LGBTQIAPN+ no ensino de ciências

RESUMO

O objetivo do artigo é analisar as estratégias de comunicação em saúde do perfil @desrotulandoLGBT no Instagram, identificando padrões de discriminação institucional vivenciados pela população LGBTQIAPN+ em serviços de saúde e suas implicações para o Ensino de Ciências, com atenção especial ao contexto oncológico. Adotou-se a netnografia como abordagem metodológica, adequada à investigação de práticas sociais em ambientes digitais, com análise de dados coletados entre dezembro de 2024 e 14 de agosto de 2025. O corpus combinou dados secundários, constituídos por postagens, interações públicas e métricas do Instagram Insights, com dados primários gerados por formulário online de acesso aberto. A análise qualitativa empregou análise temática dedutiva, triangulada com indicadores quantitativos de engajamento. Foram identificados 86 relatos de discriminação em saúde, organizados em seis categorias temáticas: invisibilidade lésbica, estigma do HIV/ISTs, transfobia e travestifobia, homofobia velada e microagressões, discriminação em oncologia e outras formas de estigma estrutural. Os indicadores quantitativos registraram predominância de público jovem-adulto, 83,1% de visualizações provenientes de não seguidores e 222 cliques em links externos, dados interpretados como indicadores parciais de alcance comunicacional, não como evidência direta de mobilização social. Os achados documentam padrões recorrentes de discriminação institucional com implicações clínicas mensuráveis, particularmente na oncologia, e sugerem que práticas de comunicação digital baseadas em evidências podem contribuir para a visibilidade de experiências de exclusão e para debates sobre formação profissional e políticas públicas inclusivas, dentro dos limites metodológicos do estudo.

PALAVRAS-CHAVE: comunicação digital; educação e ciências; contra-informação; câncer; sexualidade.

INTRODUCTION

Health communication constitutes a strategic dimension of Public Health and Science Education, as it goes beyond the transmission of biomedical information and incorporates processes of dialogue, meaning-making, and recognition of social experiences (Freire, 1970). By linking science, citizenship, and pedagogical practices, health communication can contribute to reducing inequalities and expanding social participation in healthcare.

With the expansion of digital platforms, new forms of information circulation have reconfigured communication dynamics in healthcare. On social media, content reaches broad audiences and creates communities of belonging, while simultaneously amplifying the spread of misinformation (Recuero, 2009; Wardle & Derakhshan, 2017). In this scenario, health communication faces a double challenge: informing based on scientific evidence and contesting narratives that impact care decisions and the formulation of public policies (Soares et al., 2021; Vasconcellos-Silva & Castiel, 2025).

In the field of Science Education and Health Education, there is a persistent need to overcome conceptions restricted to the biomedical paradigm, which often renders the social, cultural, and political determinants of health (Domene et al., 2022) invisible. When applied to historically marginalized groups, such as the LGBTQIAPN+ population, this limitation translates into barriers to access, discriminatory practices, and gaps in professional training. The literature documents that lesbian invisibility in gynecological consultations, pathologization of gay men's sexuality in urology appointments, and transphobia in health services are expressions of inequality that compromise the comprehensiveness of care (Bento, 2017; Moutinho, 2014). Hatzenbuehler et al. (2024), in a narrative review published in *Lancet Public Health,* describe this set of conditions as structural stigma, defined as cultural norms and institutional practices that systematically constrain the LGBTQIAPN+ populations' well-being, operating independently of individual discriminatory acts.

Oncology stands out as an area of particular vulnerability in this context. International studies demonstrate that screening rates for gynecological, colorectal, and anal cancers are significantly lower in sexual and gender minority populations, in direct association with experiences of discrimination in health services (Khosla et al., 2024; Stenzel et al., 2025). Diagnoses and practices permeated by presumptions of heterosexuality, denial of access to preventive exams, and disregard for gender identities constitute barriers with measurable clinical consequences on early diagnosis and survival (Azzellino et al., 2025).

In this context, digital initiatives for science education and popularization are becoming increasingly relevant for Public Health and Science Education. The Instagram profile @desrotulandoLGBT constitutes a relevant case of analysis as it articulates information based on scientific evidence with community engagement with the LGBTQIAPN+ population, operating in a scenario marked by misinformation and the absence of official epidemiological data on this population in Brazil (Reis & Carvalho, 2023).

This article aims to analyze quantitatively and qualitatively the health communication strategies developed by the profile on Instagram @desrotulandoLGBT,

examining how its content and engagement metrics relate to patterns of institutional discrimination experienced by the LGBTQIAPN+ population in health services, with special attention to the oncology context and the implications for the field of Science Education.

HEALTH COMMUNICATION AND SCIENCE EDUCATION

Health communication has established itself as an interdisciplinary field that connects collective health, education, and social sciences. Beyond the vertical transmission of information, this field recognizes communication as a social and pedagogical practice, based on dialogue and the active participation of individuals (Freire, 1970). In this regard, it is not enough to produce scientific knowledge: it is necessary to translate it into accessible, inclusive, and critical communication practices.

In Science Education, this challenge is particularly relevant, since the curriculum and teacher training often maintain a biomedical view that disregards the social, cultural, and political determinants of health. Domene et al. (2022) demonstrate that Brazilian scientific production on the health of the LGBTQIAPN+ population is still limited, with significant gaps, especially in oncology. Leiria et al. (2024) show that even in the National Curriculum Guidelines for health courses, between 2001 and 2023, the inclusion of the LGBTQIAPN+ population was incipient, resulting in professionals with insufficient preparation to meet the demands of this group. Reis and Carvalho (2023), in an integrative review on primary health care and the LGBTQIAPN+ population in Brazil, confirm that discrimination in services persists systematically, with this population frequently being identified as deviating from the heteronormative standard by the professionals themselves.

In this context, health communication approaches Science Education as a relevant analytical field for understanding health inequalities. Integrating these dimensions implies examining how education and communication in health can contribute to challenging curricula, medical practices, and public policies, without disregarding the limits and mediations that condition this contribution (Deslandes, 2018; Soares et al., 2021; Tesser et al., 2024).

DIGITAL SOCIAL MEDIA, MISINFORMATION AND HEALTH PROMOTION

The emergence of digital social media has altered the ways in which information circulates and the forms of social mobilization. Recuero (2009) describes how these networks structure flows of information and social capital, allowing content to reach audiences beyond the face-to-face sphere. However, the same logic that favors the democratization of access also enhances the spread of misinformation, a phenomenon described by Wardle and Derakhshan (2017) as *information disorder*.

In the health field, misinformation has concrete consequences: from discrediting vaccines to the circulation of false cures for cancer. Vasconcellos-Silva and Castiel (2025) draw attention to the resurgence of pseudoscientific narratives that undermine trust in science. Caulfield et al. (2019) reinforce that persuasive

narratives, when dissociated from evidence, exert influence on individual and collective health decisions.

Digital experiences based on scientific rigor and community belonging have been investigated as counterpoints to misinformation. Paim et al. (2025) show how support and reporting networks can strengthen inclusive practices. Tesser and Kovaleski (2023) demonstrate how social media functions as spaces of sociability for marginalized populations. However, the relationship between digital visibility and the transformation of social practices is not direct: engagement metrics constitute partial indicators of communicational impact, conditioned by the algorithmic logics of the platforms and the digital attention economy (Van Dijck & Poell, 2013), and should not be interpreted as evidence of structured social mobilization. This caveat is methodologically necessary to delimit the interpretative scope of quantitative data in research on digital health communication (Fragoso et al., 2011).

DISCRIMINATION, ONCOLOGY, AND HEALTH OF THE LGBTQIAPN+ POPULATION

National and international literature documents that the LGBTQIAPN+ population faces persistent and structural barriers in accessing healthcare. Moutinho (2014) and Bento (2017) discuss how gender and sexuality produce inequalities permeated by stigmas that translate into microaggressions, invisibility, and discriminatory practices at different levels of attention. Hatzenbuehler et al. (2024) define structural stigma as societal conditions, cultural norms, and institutional policies that systematically constrain opportunities, resources, and well-being of these populations, operating independently of individual discriminatory acts. The minority stress theory, formalized by psychologist Ilan H. Meyer (2003), articulates these findings at the individual level, demonstrating that chronic exposure to stigmatizing conditions accumulates stressors with measurable consequences on mental and physical health, as well as on the willingness to seek care, configuring a cycle that amplifies existing disparities. Beyond the psychosocial vulnerabilities described by Meyer's (2003) minority stress, Abreu (2025) proposes an original conceptual model through the Theory of the Micropolitics of Oncological Erasure (MAP-O). Based on this model, it becomes evident that the invisibility of the demands of the LGBTQIAPN+ population in the oncology setting is not a mere coincidence; it is a programmatic phenomenon rooted in the social fabric, perpetuated in the hidden curricula of health sciences, and materialized in prejudiced interpersonal behaviors.

Recent studies have explored these issues in greater depth. Tesser et al. (2024) point to LGBTQIAPN+ invisibility as a direct obstacle to access and continuity of care. Leiria et al. (2024) highlight that the lack of adequate training in health courses perpetuates heteronormative practices that disregard the specificities of lesbians, gays, bisexuals, transvestites and transsexuals.

In oncology, the clinical implications are empirically documented. A systematic review and meta-analysis, published in the *Journal of Clinical Oncology*, demonstrated that screening rates for breast, cervical, colorectal, prostate, lung, and anal cancers are significantly lower in sexual and gender minority populations (Khosla et al., 2024). Stenzel et al. (2025) demonstrated a direct association between

discrimination in medical settings and lower adherence to cancer screening in LGBTQ+ adults. Azzellino et al. (2025), in a scoping review on barriers in oncology for LGBTQIA+ people, documented that implicit biases and explicit discrimination systematically compromise the quality of care and oncological outcomes for this population. In Brazil, Almeida et al. (2024) and Silva et al. (2025) identify gaps in the training of oncology professionals for the care of LGBTQIAPN+ people, with an impact on early diagnosis and adherence to treatment. Furthermore, the scarcity of epidemiological data on cancer in this population in official Brazilian systems (Domene et al., 2022) restricts the ability to measure the extent of these disparities and reinforces the relevance of studies that make experiences that have been historically underrepresented in the scientific literature visible.

METHODOLOGICAL APPROACH

In this research, netnography was adopted as a methodological approach, as it is a qualitative strategy suitable for investigating social practices in digital environments. The choice is justified by the advantages that the technique offers, such as access to virtual communities that are difficult to reach in physical space, the possibility of observing interactions in their natural course, and the expansion of the geographical reach of individuals, given that the internet constitutes a global space for symbolic exchanges (Hine, 2015). Moreover, the anonymity of the platforms favors the expression of sensitive experiences, such as those related to health and sexuality, allowing participants to share experiences with less fear of stigmatization (Boellstorff, 2008).

It is recognized, however, that netnography has methodological limitations that were considered throughout the analytical process. The first concerns the self-selection biases of the participants: the individuals who interact with the @desrotulandoLGBT profile and who responded to the online form constitute a non-random group, with a specific profile of digital engagement and belonging to LGBTQIAPN+ communities, which restricts the generalization of the findings. The second refers to the algorithmic mediation of the platform: Instagram's algorithm conditions the visibility and circulation of content, so that the interactions observed do not necessarily represent the totality of users' experiences, but those that the distribution system prioritized during the analyzed period. The third point concerns the inclusion and exclusion criteria for the accounts: only testimonies describing experiences of discrimination in health services narrated in the first person or with explicit reference to personal experiences were considered, excluding comments from third parties, promotional content, and statements not directly related to the object of the research. It is also recognized that the active role of the profile itself in the production of the data, since the initiative analyzed is also the source of the data collected, requires an explanation of the epistemological position of the researchers, who adopted a reflective and critical stance towards the empirical material, seeking analytical distance in relation to the object (Hine, 2015; Recuero, 2015).

The research corpus consisted of the Instagram profile @desrotulandoLGBT, analyzed between December 2024 and August 14, 2025. The published content (posts in the feed, reels, carousels, visual identity and biography) and follower

interactions (comments and answers in question boxes) were considered and classified as secondary data, as they are already publicly available on the platform.

As a complementary instrument for collecting primary data, the researchers developed and disseminated an open-access online form on social media, through which LGBTQIAPN+ individuals could voluntarily and anonymously report experiences of discrimination in healthcare services, with special attention to the oncology context. All reports received were anonymized prior to analysis, with any elements that could allow the identification of participants being suppressed.

Although netnography prioritizes the qualitative dimension, the integration of quantitative indicators provided by Instagram Insights was chosen to contextualize the circulation of messages and assess their communicative impact. Among the metrics analyzed, the following stand out: total views, audience composition, accounts reached, profile activity, and individual publication performance, with the development of three indices: organic reach rate from non-followers, call-to-action conversion rate (CTA), and views per follower ratio (Kite et al., 2023). It is recognized, however, that engagement metrics are partial indicators of impact, subject to the logics of datafication and the digital attention economy, and should not be treated as direct evidence of social mobilization (Van Dijck & Poell, 2013).

In the qualitative analysis, thematic analysis was employed in its theoretical aspect, of deductive orientation (Braun & Clarke, 2006), applied to the entire body of collected material. The frameworks on vulnerability and stigma in health (Bento, 2017; Domene et al., 2022; Parker, 2013; Tesser et al., 2024) served as a preliminary guiding framework for the interpretation of the data. The analytical process followed the six phases proposed by Braun and Clarke (2006): (1) familiarization with the data, through exhaustive reading and notation of initial impressions; (2) generation of initial codes, with systematic identification of units of meaning in the narratives; (3) construction of preliminary themes, by grouping the codes into thematic sets; (4) review of the themes, with verification of the internal coherence of each category and its relevance to the total corpus; (5) final definition and naming of the themes, with the elaboration of precise descriptions of each category; and (6) production of the analytical report, with integration of the findings with the literature in the field. The reliability of the process was ensured by cross-review between two researchers, with systematic discussion of coding discrepancies until consensus was reached, a procedure that helps reduce the subjectivity inherent in qualitative analysis.

Following independent analyses, data were triangulated, linking engagement metrics to the reported experiences, which allowed the examination of the extent to which certain communication strategies increased the visibility of discriminatory practices or fostered social mobilization. This integration is in line with the perspective that research in digital environments requires multiple methods to capture the complexity of the observed phenomena (Fragoso et al., 2011).

Regarding the nature of the data and ethical aspects, the study combined secondary data, consisting of Instagram Insights metrics and public profile interactions, with primary data, generated through an online form developed and disseminated by the researchers. Participation was strictly voluntary, without any form of active recruitment or direct contact with respondents. The study followed the guidelines of CNS Resolution No. 510/2016, which regulates research in Human

and Social Sciences involving human beings in digital environments, especially regarding the guarantee of confidentiality, respect for the autonomy of participants, and the protection of sensitive data related to health and sexuality. The research was approved under CAAE 88025125.1.0000.5347 by the Research Ethics Committee of the Federal University of Rio Grande do Sul, under opinion number 7.896.251.

RESULTS AND DISCUSSION

The data produced in this study combine quantitative indicators of communication reach, obtained via Instagram Insights, with thematic analysis of 86 qualitative reports of discrimination in health services collected from the LGBTQIAPN+ population. The triangulation of these dimensions does not aim at the mutual confirmation of the data, but at constructing a more comprehensive interpretation of the conditions under which digital communication practices in health operate and the structural vulnerabilities that they make visible.

METRICS COMMUNICATION REACH AND INTERPRETATIVE LIMITS

During the analyzed period, the profile @desrotulandoLGBT registered the following indicators: predominance of a young adult audience, with 55% men and 45% women; a predominantly Brazilian audience (55.8%), concentrated in the municipality of Pelotas, Rio Grande do Sul (12.7%); 83.1% of views coming from non-followers; 222 clicks on external links; and a predominance of static posts and carousels in terms of views (70.6%), with the reels concentrating 47.6% of the interactions.

The interpretation of these indicators requires methodological caution. Engagement metrics express patterns of content circulation in algorithmically mediated environments and do not constitute direct proxies for impact on health, behavior change, or structured social mobilization (Van Dijck & Poell, 2013). The proportion of views coming from non-followers describes the formal reach of messages, without providing information about the context of reception, the attention paid to the content, or the cognitive and behavioral effects. The 222 clicks on external links suggest some degree of active engagement from a segment of the audience, without it being possible to infer, from this isolated data point, the nature or extent of that engagement. Recuero (2009) contributes to this interpretation by understanding digital networks as arenas of symbolic circulation, in which visibility and engagement do not automatically translate into the transformation of social practices.

The demographic profile of the audience raises important questions for evaluating the reach of the initiative. The male predominance (55%) in a health-focused LGBTQIAPN+ profile deserves investigation in future studies, since the literature points to gender differences in the pattern of seeking health information and engaging with digital content, including among young people from sexual minorities (Berger et al., 2022). The overrepresentation of Pelotas may reflect both the geographic origin of the researchers and specific characteristics of the local community, which limits inferences about national representativeness.

DISCRIMINATION IN HEALTHCARE SERVICES: THEMATIC ANALYSIS

The thematic analysis of the 86 reports produced six categories: lesbian invisibility (n=15), HIV/STI stigma (n=15), transphobia and transvestiphobia (n=11), veiled homophobia and microaggressions (n=11), discrimination in oncological contexts (n=7), and other forms of structural stigma (n=7). The frequency distribution of the categories is not trivial: it indicates that lesbian invisibility and HIV/STI stigma constitute the most recurrent forms of discrimination in this corpus, a pattern consistent with the literature on barriers to health access for LGBTQIAPN+ subpopulations (Hatzenbuehler et al., 2024; Stenzel et al., 2025). The sample representativeness limitations, discussed in the methodological section, prevent generalizations about prevalence. Next, each category is analyzed based on the collected reports and their articulation with the adopted theoretical and empirical frameworks.

Lesbian Invisibility

The 15 reports in this category describe situations in which heterocentric clinical protocols led to diagnostic negligence. A participant stated: *"I explained that I had severe pain during my period, but the doctor said there was no need to investigate because I didn't have sex with men"*. What this account reveals analytically is not merely an episode of individual negligence: it concerns the operation of an implicit protocol that conditions the indication for clinical investigation on the patinet's presumed heterosexuality. The underlying mechanism is what Tesser et al. (2024) call systemic invisibility, characterized by the absence of instruments and care routines that address the specific health needs of lesbians and bisexual women.

The clinical consequences are documented in the international literature. Khosla et al. (2024) demonstrated that screening rates for gynecological cancers, including breast and cervical cancer, are significantly lower in sexual and gender minority populations, in direct association with experiences of discrimination in health services (Stenzel et al., 2025). Bento (2017) argues that the lack of comprehensiveness in care is not an isolated technical failure, but an expression of gender norms incorporated into professional practices. The intersectional perspective applied to the health of sexual and gender minorities (Bowleg et al., 2023) adds that this silencing is intensified when combined with determinants such as social class, race, and territory, producing differentiated vulnerability profiles that an analysis focused exclusively on sexual orientation does not adequately capture. In the Brazilian context, Reis and Carvalho (2023), in an integrative review published in *Health in Debate,* confirm that discrimination in primary care services persists systematically, with this population frequently being identified as deviating from the heteronormative standard by the health professionals themselves.

Stigma of HIV and STIs

The 15 reports in this category reveal the persistence of automatic associations between male homosexuality and the risk of STIs, formed before clinical examination. A participant reported: *"During a routine check-up, the doctor*

didn't let me finish speaking and immediately said that my problem could only be HIV". The analytically relevant aspect is not only the manifest bias, but the diagnostic anticipation it produces: the hypothesis is formulated before the anamnesis, compromising the clinical quality of care regardless of the patient's actual condition. Hatzenbuehler et al. (2024) describe this mechanism as the operation of structural stigma at the institutional level, which manifests itself when cultural norms and organizational practices systematically constrain the well-being of LGBTQIAPN+ populations. From an epidemiological point of view, the automatic association between male homosexuality and HIV reproduces a framework constructed in the early decades of the epidemic and progressively superseded by the literature on combined prevention (Vasconcellos-Silva & Castiel, 2025). The minority stress theory (Meyer, 2003) offers an interpretative framework for understanding how chronic exposure to this type of discrimination accumulates stressors that compromise both mental health and the willingness to seek care, generating a cycle of avoidance that amplifies existing disparities. This cycle is clinically relevant: avoidance of services due to anticipation of discriminatory experiences is associated with diagnostic delays and worse outcomes in multiple conditions (Stenzel et al., 2025).

Transphobia and transvestophobia

The 11 reports in this category describe situations in which gender identity was used as a criterion for moral judgment of the clinical complaint. A transvestite reported: *"I went to the community health center with chest pain and the doctor said that I had chosen this fate myself by using industrial silicone"*. Analytically, this account illustrates a specific shift in the clinical relationship: holding the patient responsible for the risk imposed by the absence of care, operated by reference to an identity choice. This mechanism produces measurable consequences: the failure to investigate the complaint and the consequent delay in diagnosing potentially serious conditions. Bento (2017) and Ayres et al. (2018) agree in describing the use of deadnames, refusal of care, and pathologization of trans identities as markers of an institutional culture that has not incorporated the rights of trans people as a parameter of care. Azzellino et al. (2025), in a scoping review published in the journal *Cancers* regarding barriers in oncology for sexual and gender minorities, have documented that implicit biases and explicit discrimination systematically compromise the quality of care and oncological outcomes for this population, highlighting inadequate clinical communication as a central barrier.

Covert homophobia and microaggressions

The 11 reports in this category are characterized by the diffuseness of the forms of exclusion. A participant reported: *"During the consultation, the doctor asked if I really wanted to waste his time on gay things"*. Goffman (2004) contributes to the analysis by showing that forms of violence that do not involve explicit refusal of care produce equally compromising effects on the subjects' willingness to return to health services. The minority stress theory (Meyer, 2003) provides a theoretical basis for understanding how accumulated microaggressions, even when individually diffuse, constitute chronic stressors, with a documented impact

on the physical and mental health of the affected populations. From a clinical perspective, avoidance of services due to anticipation of discrimination is associated with significantly lower rates of cancer screening among sexual and gender minority populations (Khosla et al., 2024; Stenzel et al., 2025), demonstrating that the harm of microaggressions transcends the individual episode and accumulates in measurable population outcomes.

Discrimination in oncology

The 7 reports in this category present clinical specificity that justifies separate analysis, given the direct severity of the implications for diagnosis and treatment. A participant reported: *"I explained that I lived with a female partner, and the oncologist replied that, in that case, I was not at risk of gynecological cancer"*. This practice undermines cancer screening by associating cancer risk with presumed heterosexuality, disregarding the fact that the main risk factors for gynecological cancers, including genetic, hormonal, behavioral, and HPV-related factors, are not distributed according to sexual orientation. Khosla et al. (2024) demonstrated that screening rates for breast, cervical, colorectal, prostate, lung, and anal cancers are significantly lower in sexual and gender minority populations, emphasizing the need for inclusive guidelines and culturally competent care. Stenzel et al. (2025), in a study published in *Cancer Causes & Control*, reported a direct association between discrimination in medical settings and lower adherence to cancer screening in LGBTQIAPN+ adults. Almeida et al. (2024) and Silva et al. (2025) reinforce that cultural competence is a necessary component of the quality of oncological care, with a measurable impact on early diagnosis, adherence to treatment, and psychosocial support. The absence of inclusive oncology protocols therefore constitutes not only a failure of equity, but also a factor in worsening clinical outcomes with consequences for survival.

Other forms of structural stigma

The 7 reports in this category highlight the connection between religious discourse and clinical practices within health services. A participant reported: *"The nurse said that my illness was God's punishment for me being a transvestite"*. Hatzenbuehler et al. (2024) and Bandeira and Fraga (2025) identified religious context as one of the indicators of structural stigma at the societal level, with documented effects on the LGBTQIAPN+ populations well-being and access to health. Bowleg et al. (2023), in a review on intersectionality and sexual and gender diversity, published in *Current Opinion in Psychology* demonstrated how systems of oppression of distinct natures—biomedical, religious, and territorial— operate in an articulated way in the production of exclusion, configuring what the literature calls intersectional stigma. Moutinho (2014) adds that these forms of exclusion are enhanced in territories with less cultural pluralism and a lower supply of specialized services, which is consistent with the reports from smaller municipalities in this corpus.

CROSS-CUTTING INTERPRETATIVE PATTERNS

Analyzing the six categories allows us to identify two interpretative patterns that transcend individual episodes. The first is the institutionalization of discrimination. The reports do not describe exceptional behaviors of isolated professionals, but rather recurring practices across different medical specialties, services, and geographic regions. This pattern is consistent with Hatzenbuehler et al.'s (2024) definition of structural stigma as societal conditions, cultural norms, and institutional policies that systematically constrain opportunities, resources, and well-being for LGBTQIAPN+ populations. The minority stress theory (Meyer, 2003) allows us to interpret these findings by showing that persistent exposure to institutionalized discrimination generates chronic stressors that compromise mental health and hinder the pursuit of health care. As a result, a cycle is established that perpetuates and widens health disparities. Overcoming this scenario requires structural changes, including the revision of institutional protocols and the improvement of professional training, since interventions focused exclusively on raising individual awareness among professionals prove insufficient to address the systemic causes of these inequalities, as discussed by Abreu and Maciel (2026).

The second pattern is the function of digital communication as a space for collective documentation and the production of counter-narratives. By making public experiences of discrimination that are often silenced in healthcare services, the profile @desrotulandoLGBT operates a systematic recording function that is relevant to both research and policymaking. Recuero (2009) calls this process the accumulation of social capital in digital networks, which can strengthen the ability of individuals to claim rights. Soares et al. (2021) add that the dispute over narratives in digital environments is a constitutive dimension of contemporary public health dynamics, especially in the context of misinformation about the health of vulnerable populations. However, the relationship between digital visibility and changes in institutional practices is indirect and mediated by factors that this study is unable to measure, including the context of embracement, the characteristics of the audience reached, and the pre-existing institutional arrangements.

CONTRIBUTIONS TO SCIENCE EDUCATION

The findings of this study have implications for the field of Science Education in three complementary dimensions. The first refers to scientific literacy in health: the reports analyzed show how the absence of up-to-date scientific knowledge about LGBTQIAPN+ health in professional training curricula produces measurable clinical consequences. Domene et al. (2022) point out that the scarcity of epidemiological data on this population weakens both the formation and formulation of public policies, an argument reinforced in the Brazilian context by Reis and Carvalho (2023) and Abreu (2025) findings. The second dimension concerns teacher training: digital communication practices that articulate scientific evidence with social experiences and accessible language can be understood as an extension of training processes that bring science closer to the daily lives of populations historically underrepresented in health narratives, in line with Freire's (1970) dialogical perspective and with Soares et al.'s (2021) conception of health communication as a pedagogical field. The third dimension relates to the use of real-

life problem situations in Science Education: the accounts of oncological discrimination analyzed in this study provide concrete material to discuss, in the context of initial and continuing teacher and health professional training, how cognitive biases and lack of cultural competence compromise clinical reasoning and amplify health inequalities, articulating biology, epidemiology, and social sciences in an interdisciplinary approach committed to equity and social justice.

LIMITATIONS OF THE STUDY

The 86 reports analyzed come from a group with a specific pattern of digital engagement with the profile @desrotulandoLGBT, which prevents broader generalizations about the LGBTQIAPN+ population. The sample is not probabilistic, and the participants constitute a non-random group with particular characteristics regarding digital access and willingness to publicly report sensitive experiences. The thematic categories constructed reflect the experiences narrated in this specific corpus, and not the totality of forms of health discrimination experienced by the studied population. The limited time frame and the restriction to a single digital platform impose additional caution when inferring trends. These limitations do not invalidate the findings, but they circumscribe the scope of the conclusions and point to directions for future studies with complementary designs, including population-based samples, longitudinal methods, and cross-platform analyses, which may broaden the understanding of access to and quality of healthcare for LGBTQIAPN+ populations.

FINAL CONSIDERATIONS

The results of this study indicate that the profile @desrotulandoLGBT operates as a vehicle for evidence-based health communication and as a space for collective documentation of experiences of discrimination lived by the LGBTQIAPN+ population in health services. The integration between quantitative metrics of communication reach and thematic analysis of 86 qualitative reports allowed examining both the conditions of message circulation and the structural patterns of exclusion that they make visible, within the methodological limits explained throughout the work.

Qualitative reports have documented recurring discriminatory practices in different medical specialties and geographic regions, with direct clinical implications, particularly in oncology, where biases based on presumptions of heterosexuality compromise screening and early diagnosis. This pattern is consistent with the concept of structural stigma (Hatzenbuehler et al., 2024) and with the minority stress theory (Meyer, 2003), which link individual experiences of discrimination to institutional and societal mechanisms that systematically amplify health disparities. The absence of official epidemiological data on this population in Brazil (Domene et al., 2022; Reis & Carvalho, 2023) restricts the ability to measure the extent of these disparities and reinforces the relevance of studies that make historically silenced experiences visible.

Netnography, in turn, when integrated with deductive thematic analysis, has proven suitable for accessing discursive practices in sensitive digital contexts. The

limitations of the approach, including self-selection biases, algorithmic mediation, and the epistemological limits of engagement metrics, were acknowledged and do not invalidate the findings, but rather circumscribe the scope of the conclusions.

For the field of Science Education, the findings contribute in three dimensions: documenting how the absence of cultural competence in professional training produces measurable clinical consequences; demonstrating that digital communication practices that articulate scientific evidence with social experiences can be understood as an extension of formative processes, in dialogue with Freire (1970) and Soares et al. (2021); and offering empirical material for science teaching committed to equity, articulating biology, epidemiology, and social determinants of health.

Finally, this work contributes to the field by: (1) documenting recurring patterns of institutional discrimination in healthcare directed at the LGBTQIAPN+ population, with an emphasis on its oncological implications; (2) demonstrating the methodological viability of netnography integrated with thematic analysis for digital health research with vulnerable populations; (3) articulating health communication, science education, and an intersectional perspective as complementary axes for understanding health inequalities; and (4) identifying gaps in professional training and care protocols that constitute structural barriers to the comprehensive care of the LGBTQIAPN+ population. Future studies using population-based samples, longitudinal methods, and cross-platform analyses could expand and refine the findings presented here.

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