Account and Post Characterization of Sinonasal Carcinoma and Nasopharyngeal Carcinoma on Instagram and X

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Introduction

Social media plays a vital role in public perception of illnesses and stimulates academic discourse as new findings are discovered. The goal of this study is to understand the types of accounts and content that are posted for sinonasal carcinoma (SNC) and nasopharyngeal carcinoma (NPC) on popular platforms.

In the digital era, people access information from internet-based sources, including popular social media platforms, to gain a fundamental understanding of their healthcare. For instance, teenagers use social media for insight about their health questions, concerns, and prognoses (Jain and Bickman, 2014). As technology advances, the general non-medical community will increasingly depend on internet-based sources, which may or may not be peer-reviewed, to understand their healthcare, describe their previous experiences, and inform their opinions on the current state of healthcare for certain conditions.

Beyond the clinical setting, public understanding and perception of these cancers are increasingly shaped by social media. Platforms like Instagram and X (formerly Twitter) not only influence patient awareness and community support for various disease pathologies but also serve as venues for academic communication and dissemination of medical knowledge (Malecki et al., 2021).

SNC and NPC are rare but impactful diseases that often require complex multidisciplinary management. Sinonasal malignancies consist of less than 5% of head and neck cancers with an incidence of 0.556 per 100,000 per year (Abdou & Baredes, 2017), while NPC had an annual incidence of 1.38 cases per 100,000 and prevalence of 6.14 per 100,000 (Wu et al., 2025). This rarity obstructs patient access to information through traditional sources, increasing patient reliance on social media for education and emotional support.

Despite this growing role, the nature of social media discourse around these specific malignancies remains poorly characterized. This study aims to analyze the types of accounts, content, and overall connotation of social media posts related to sinonasal and NPC, providing insight into how these cancers are represented across these two widely used platforms.

Methods

Through a cross-sectional observational approach, the terms “sinonasal carcinoma” and “nasopharyngeal carcinoma” were searched on Instagram and X on January 14, 2025. Public posts for each search term were then categorized by account type as patient, clinician, researcher, industry, medical department, or journal/society; by post content as patient experience, public education, medical education, advertisement, repost, or other; and by connotation as positive, negative, or neutral by two reviewers, AH and MB. A chi-square analysis was done to evaluate for statistical significance.

Results

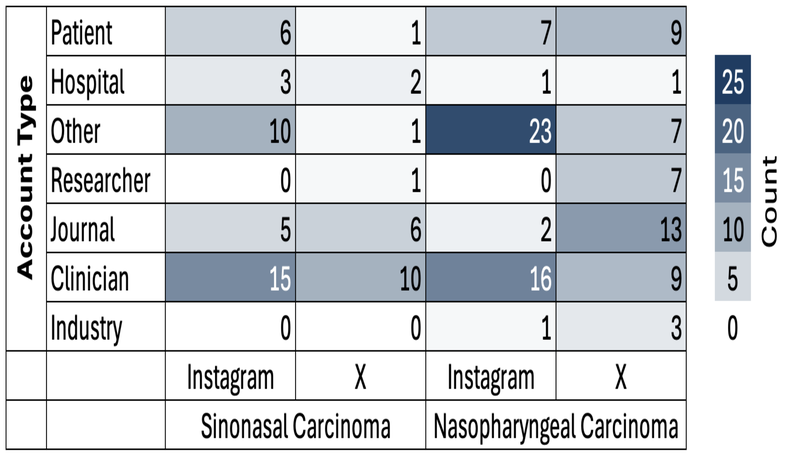

Figure 1. A heat map of account type stratified by social media platform and by cancer type.

	Sinonasal Carcinoma		NPC	
Post Type	**Instagram**	**X**	**Instagram**	**X**
Patient Experience	12	1	8	9
Public Education	0	1	3	7
Medical Education	26	19	38	31
Advertisement	0	0	0	2
Repost	1	0	1	0
Other	0	0	0	0

Table 1. A summary of post on Instagram and X based on post type.

	Sinonasal Carcinoma		Nasopharyngeal Carcinoma	
Connotation	**Instagram**	**X**	**Instagram**	**X**
Positive	8	1	3	4
Negative	0	0	1	7
Neutral	31	20	46	38

Table 2. A summary of posts on Instagram and X based on connotation type.

	Cancer Type	Instagram (n)	X (n)	χ^2	p-value
Post Category	**Sinonasal**	39	21	8.60	0.0034
	Nasopharyngeal	50	49	26.80	<0.0001
Post Type	**Sinonasal**	39	21	7.69	0.0058
	Nasopharyngeal	50	49	5.36	0.0206
Connotation	**Sinonasal**	39	21	2.66	0.1032
	Nasopharyngeal	50	49	5.40	0.0202

Table 3. A summarization comparing the differences between account type, post type, connotation on Instagram and X for both sinonasal carcinoma and nasopharyngeal carcinoma.

Discussion

This study highlights the distinctive ways in which SNC and NPC are represented across Instagram and X, underscoring the varied roles these platforms play in shaping public and professional discourse. Overall, Instagram tended to emphasize patient experience and broad medical education, particularly through posts made by clinicians and organizations, while X was more heavily dominated by clinicians and journals. These differences suggest that each platform supports a unique ecosystem of communication, which may be influenced by platform norms, audience demographics, and content-sharing practices.

The predominance of medical education posts on both platforms reflects the rarity and clinical complexity of these malignancies. Clinicians and journals appear to use social media to disseminate academic information, while patients and organizations contribute perspectives that contextualize disease beyond the medical setting. Interestingly, sentiment analysis revealed that most posts were neutral or positive, contrasting with literature suggesting that cancer-related social media content often carries a negative emotional tone (Wang et al., 2023). This may reflect the professional nature of contributors in this dataset, particularly for sinonasal carcinoma, for which posts from clinicians and journals were especially common.

The variability in account type, content, and connotation between Instagram and X was more pronounced for NPC than SNC. This may be related to epidemiologic differences: NPC has higher prevalence in certain populations and greater global awareness, which could encourage more diverse contributions, including from patients (Zhang et al., 2023).

These findings emphasize the importance of tailoring health communication strategies to the unique dynamics of each platform. Clinicians and researchers should recognize the role of social media not only in education but also in supporting patients and shaping public perception. Future research could expand by examining engagement metrics, geographic trends, or longitudinal changes in online discourse.

Conclusions

The analysis revealed significant differences in account types and content between public Instagram and X posts about sinonasal and NPC. While Instagram posts were predominantly made by clinicians and other entities focusing on medical education and patient experience, X posts showed greater involvement from clinicians, medical journals, and patients, with significant variability in account type, content, and connotation between the platforms, particularly for NPC.

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