Understanding and Addressing Scanxiety: Equity, Access, and Patient-Centered Solutions in the Era of Digital Health

In this new era of digital health, patients have unprecedented access to their medical information. While this transparency can empower individuals to take control of their health, it also introduces new challenges. One challenge is the phenomenon known as "scanxiety," a term first introduced by a patient in Time Magazine in 2011 (Bui 2021). It refers to the anxiety and distress patients feel before, during, and after medical scans or while awaiting test results. This anxiety is particularly prevalent among cancer patients and survivors, who often undergo frequent imaging to monitor their condition. As healthcare systems continue to adopt patient portals and provide instant access to test results, it is essential to understand the impact of unfiltered health information to better equip healthcare practitioners in supporting their patients.

The emotional toll of medical imaging has gained increasing attention in medical research. A 2023 scoping review identified multiple factors contributing to scanxiety, along with potential interventions to mitigate its effects (Derry-Vick 2023). The review highlights that scanxiety stems from both the scanning process itself and the anticipation of results, with the waiting period between the scan and receiving results being particularly distressing. It also demonstrates that scanxiety has been linked to poorer quality of life, physical symptoms, and, in some cases, avoidance of follow-up care. Several factors have been identified to increase the likelihood and severity of scanxiety, including lower education levels, a more recent diagnosis, higher baseline anxiety and pain, smoking, a greater perceived risk of cancer, and undergoing diagnostic rather than screening scans (Derry-Vick 2023, Bui 2021). In contrast, factors such as age, gender, ethnicity, and marital status were not found to significantly impact scanxiety severity (Bui 2021).

The experience of scanxiety is complicated by the fact that many patients now can access their health information through electronic patient portals, like MyChart. Through patient portals, they can now review clinical notes after appointments, send quick messages to their healthcare team, and keep family members informed by adding them to their accounts. A recent article cites that over 195 million people use MyChart (Innovation District, 2025). Research studies have supported the advantages of services like MyChart, citing that active users make fewer phone calls and are significantly less likely to experience an unplanned clinic or emergency department visit, or encounter a complication (Kachroo 2020). Other studies have shown that patient portals can help identify medical errors and improve medication adherence (Dendere 2019) and even have the potential to strengthen the doctor-patient relationship and boost therapy adherence (Carini 2021).

However, oftentimes, portals like MyChart allow patients to access test results before their doctors have had a chance to review them. A study by Bhalla et al. found that the percentage of test results viewed by patients before their clinicians increased from 37% in 2017 to 75% in 2022, with the greatest increase demonstrated for radiology results (2024). This unfiltered access to information, without the expertise to interpret it meaningfully, often leads to an anxious spiral of internet searches in an attempt to find answers. While some studies, such as that by Van Riel (2017), highlight health practitioners' observations of the positive effects online search behavior can have on consultations, seeking medical explanations online often leads to misinformation, particularly for individuals with limited health or scientific literacy (Stukus 2019). A study examining the unintended consequences of patient access to health records in the UK (Turner 2022) found that online access sometimes led to patient confusion, particularly when encountering unexpected or difficult-to-interpret information. It also influenced how GPs documented patient records, as they sought to prevent misunderstandings, sometimes at the expense of record quality and patient safety by omitting speculations or concerns. Furthermore, rather than reducing workload, online access introduced additional responsibilities, such as managing access and implementing measures to prevent potential harm to patients (Turner 2022).

Scanxiety encompasses multiple dimensions, including anticipatory distress related to scan results and procedural anxiety associated with the scanning process itself (Derry-Vick 2023). Accordingly, interventional supports must be tailored to address both result-related and procedure-related sources of distress. Several cancer organizations have provided resources and strategies to help patients manage the anxiety associated with medical scans. These are all resources that patients can readily access online. For example, Maggie’s advises patients to stay organized with their scan schedules, openly discuss their fears with their healthcare team, and find ways to stay distracted during appointments, such as reading magazines or doing crosswords (2024). The Memorial Sloan Kettering Cancer Center offers a list of key questions patients can ask their care team, including when and how they will receive their results (2025). Meanwhile, the City of Hope emphasize the importance of coping skills training and psychoeducation to better support patients (2023). Overall, these resources focus on relaxation techniques and ensuring patients have the right support systems in place.

From a research perspective, alongside determining better ways to support our patients, there is a greater need to understand how scanxiety may present differently across various demographics, including different cancer types and stages to make sure that support is personalised for a patient's specific situation. In their scoping review, Bui and colleagues (2021) discussed that the existing literature lacked a consistent definition of scanxiety, thus making it challenging to establish and compare the efficacy of various management strategies. In a more recent scoping review by Derry-Vick and colleagues (2023), only five of their 22 articles even included an explicit definition of scanxiety. Establishing a clear definition of scanxiety and outlining its phases – before, during, and after the scan – is a key step toward identifying the most effective strategies for addressing it.

Additionally, across the 57 studies included in the Bui review, 81 different measurement tools were used, ranging from Likert scales, to Hospital Anxiety and Depression Scales (Bui 2021). In the Derry-Vick review, 27 articles utilized quantitative measures, which included both pre-existing measures, such as the State-Trait Anxiety Inventory, as well as single-item measures that were developed for the purpose of that given study (2023). A challenge in studying scanxiety is that, although it is a form of anxiety (as the term suggests), it constitutes a distinct emotional state that can encompass a wide range of experiences, including hopelessness, fear, familial pressure, and claustrophobia. As such, the use of general anxiety scales alone may not adequately capture the complexity and nuance of scanxiety.

An added layer of complexity in studying scanxiety lies in the variability of screening guidelines across different cancer types, particularly in terms of timing and frequency. Moreover, the type of imaging modality, such as MRI, PET, or CT, may influence the experience of scanxiety differently, given the distinct procedural and sensory characteristics associated with each. For example, one study found that regarding anxiety levels, the procedures were ranked from highest to lowest burden as follows: endoscopic ultrasound (EUS), ultrasound (US), positron emission tomography (PET), and computed tomography (CT) (Westerterp 2008).

When it comes to identifying which interventions are the most valuable for patients experiencing scanxiety, there are no existing trials evaluating the effectiveness of scanxiety interventions. This may reflect the reality that different approaches hold varying value depending on individual patient needs and preferences. For example, the effectiveness of mindfulness-based stress reduction is thought to depend on specific personal characteristics, including a strong sense of personal commitment and openness to new experiences (Nyklíček 2017). What may be more effective is identifying which components of scanxiety are most impactful for a given patient and applying well-validated strategies accordingly. For instance, for patients whose primary challenge is illness uncertainty, evidence-based interventions include informational, emotional, appraisal, and instrumental support (Guan 2021). In contrast, for those experiencing procedure-related anxiety such as claustrophobia, techniques like mock simulations, cognitive-behavioral therapy, or guided imagery can be effective (Munn 2012).

Of course, the most effective approach to managing scanxiety is prevention, rooted in patient-centered care. One review examining experiences of scanxiety found that poor communication with healthcare providers heightened distress among cancer patients (Hussain 2023). Similarly, an analysis of national survey data from the National Cancer Institute (2017–2020) showed that patient-centered communication improves quality of care, self-efficacy, and trust in physicians. These outcomes are particularly supported when clinicians provide clear explanations, address emotions and uncertainty, involve patients in decision-making, clarify next steps, spend sufficient time with patients, and invite questions (Elkefi 2023). This responsibility extends beyond medical oncologists: Hussain’s review also noted that patients reported feeling a lack of empathy and care from radiographers during scans, highlighting that everyone involved in a patient’s care can influence their experience of scanxiety.

Equally important is identifying barriers that prevent marginalized populations from accessing patient resources, such as language barriers or limited health literacy. At every stage of developing portals, care protocols, and support strategies, direct involvement of patients is essential to ensure their experiences and perspectives guide meaningful improvements. Patient and public involvement in cancer research helps align research priorities with patient needs, supporting faster advances and improving outcomes (Van Hemelrijck 2021).

Additionally, further support is needed for those with access to MyChart. From a policy standpoint, protocols should be implemented to ensure rapid review of critical results by healthcare providers before patients gain access. Alternatively, patients could be given the option to delay viewing their results until after a consultation. On the clinical side, physicians can play a key role by clearly communicating when and how results will be available and, whenever possible, providing prompt follow-up for concerning findings, ideally scheduling appointments on the same day as scans. Additionally, they can offer coping strategies and encourage patients to engage in activities that promote well-being and provide distraction during periods of heightened stress.

As digital health continues to evolve, the phenomenon of scanxiety raises important questions about the balance between transparency and patient well-being. What responsibility do all members of the healthcare team, from medical oncologists to the radiographers, have in mitigating a patient’s scanxiety? Should certain medical information, such as scan results, be withheld until after a physician consultation to prevent unnecessary distress? Healthcare systems and providers must navigate this complexity by ensuring patients have the necessary support and resources to interpret their health information effectively. Ultimately, addressing scanxiety is not just about reducing anxiety: it is about enhancing patient care, improving health outcomes, and creating a more patient-centered approach to digital healthcare.

Sources

Bhalla S, Prasad T, Xie D, Gerber DE. Contemporary Trends in Reviewing Test Results Through the Electronic Patient Portal Among Patients With Cancer. JAMA Oncol. 2024 Jan 1;10(1):139-140.

Bui KT, Liang R, Kiely BE, et al. Scanxiety: a scoping review about scan-associated anxiety. BMJ Open 2021;11:e043215.

City of Hope. "What Is Scanxiety?" Cancer Treatment Centers of America. Feb 2023. Retrieved from https://www.cancercenter.com/community/blog/2023/02/what-is-scanxiety

Carini E, Villani L, Pezzullo AM, Gentili A, Barbara A, Ricciardi W, Boccia S. The Impact of Digital Patient Portals on Health Outcomes, System Efficiency, and Patient Attitudes: Updated Systematic Literature Review. J Med Internet Res. 2021 Sep 8;23(9):e26189.

Dendere R, Slade C, Burton-Jones A, Sullivan C, Staib A, Janda M. Patient Portals Facilitating Engagement With Inpatient Electronic Medical Records: A Systematic Review. J Med Internet Res. 2019 Apr 11;21(4):e12779.

Derry-Vick HM, Heathcote LC, Glesby N, Stribling J, Luebke M, Epstein AS, Prigerson HG. Scanxiety among Adults with Cancer: A Scoping Review to Guide Research and Interventions. Cancers (Basel). 2023 Feb 22;15(5):1381.

Elkefi S, Asan O. The Impact of Patient-Centered Care on Cancer Patients' QOC, Self-Efficacy, and Trust Towards Doctors: Analysis of a National Survey. J Patient Exp. 2023 Jan 17;10:23743735231151533.

Guan T, Qan'ir Y, Song L. Systematic review of illness uncertainty management interventions for cancer patients and their family caregivers. Support Care Cancer. 2021 Aug;29(8):4623-4640.

Hussain M, Chau S, Turner M, Paterson C. Scan-Associated Distress in People Affected by Cancer: A Qualitative Systematic Review. Semin Oncol Nurs. 2023 Oct;39(5):151502.

Innovation District. Children's National selects Epic as partner for electronic health record modernization. Children's National. 2024 Jun. https://innovationdistrict.childrensnational.org/childrens-national-selects-epic-as-ehr-partner/#:~:text=Today%2C%20over%20195%20million%20people,and%20health%20systems%20every%20day.

Kachroo N, Fedrigon D, Li J, Sivalingam S. Does "MyChart" Benefit "My" Surgery? A Look at the Impact of Electronic Patient Portals on Patient Experience. J Urol. 2020 Oct;204(4):760-768.

Maggie's. "Tips for Managing Scanxiety." 2024 Feb. https://www.maggies.org/about-us/blog/tips-for-managing-scanxiety/

Memorial Sloan Kettering Cancer Center. "Managing Scanxiety During Your Cancer Treatment." 2025 Feb. https://www.mskcc.org/cancer-care/patient-education/managing-scanxiety-during-your-cancer-treatment

Munn Z, Jordan Z. The effectiveness of interventions to reduce anxiety, claustrophobia, sedation and non-completion rates of patients undergoing high technology medical imaging. JBI Libr Syst Rev. 2012;10(19):1122-1185.

Nyklíček I, Irrmischer M. For Whom Does Mindfulness-Based Stress Reduction Work? Moderating Effects of Personality. Mindfulness (N Y). 2017;8(4):1106-1116. =

Turner A, Morris R, McDonagh L, Hamilton F, Blake S, Farr M, Stevenson F, Banks J, Atherton H, Rakhra D, Lasseter G, Feder G, Ziebland S, Hyde E, Powell J, Horwood J.

Unintended consequences of patient online access to health records: a qualitative study in UK primary care. Br J Gen Pract. 2022 Dec 21;73(726):e67-e74.

Stukus DR. How Dr Google Is Impacting Parental Medical Decision Making. Immunology and Allergy Clinics of North America. 2019;39(4):583-591.

Van Hemelrijck, M., Peters, V., Loong, J. F., Russell, B., Fox, L., Wylie, H., … Green, S. (2021). The Importance of Patient and Public Involvement in Cancer Research: Time to Create a New Job Profile. Future Oncology, 17(28), 3667–3670.

Van Riel N, Auwerx K, Debbaut P, Van Hees S, Schoenmakers B. The effect of Dr Google on doctor-patient encounters in primary care: a quantitative, observational, cross-sectional study. BJGP Open. 2017 May 17;1(2):bjgpopen17X100833.

Westerterp M, van Westreenen HL, Deutekom M, Stoker J, Fockens P, Comans EF, Plukker JT, Bossuyt PM, van Lanschot JJ, Sloof GW. Patients' perception of diagnostic tests in the preoperative assessment of esophageal cancer. Patient Prefer Adherence. 2008 Feb 2;2:157-62.