Soothing the Space

Evaluating the Calming and De-Medicalising Effects of Multimodal Art on Patients and Staff in Primary Healthcare

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Rob Irving (Dr.) and Matisse Lack

Abstract

Background

In spring 2024, Frome Medical Practice (FMP) introduced an immersive audiovisual installation featuring natural sounds, including the rustling of barley, lapping waves, the hum of bees, and birdsong. The installation appeared to have a calming and transformative effect, reportedly enhancing the atmosphere for staff, patients, and visitors. This study aimed to evaluate this impact, moving beyond anecdotal observations to assess how multimodal art in a healthcare setting might influence mood and contribute positively to patient and staff experience.

Methodology

To collect the data, a mixed-methods design was employed, comprising closed-ended surveys to assess patients' emotional experiences with the artwork (n = 37) and a content analysis of open-ended surveys to gather staff opinions on the artwork (n = 50).

Results

Statistical analysis revealed that patients who engaged with the artwork were significantly more likely to report positive emotions (OR = 7.2, p < .05). Additionally, significant correlations were found between positive emotions and feeling calmed (r = .73, p < .001), engaged (r = .81, p < .001), distracted (r = .45, p = .002), and connected to nature (r = .40, p = .007).

A negative correlation was observed between negative emotions and feelings of calmness (r = -0.34, p = 0.02). Staff survey results supported these findings. As themes, "Soothing the Space" emphasised the artwork's calming and de-medicalising effects, often linked to its natural elements. This was noted to enhance staff mood and was anecdotally seen as beneficial for patients. "A Ripple of Calmness" indicated that staff believed the installation had a positive impact on patient-practitioner interactions by fostering an atmosphere conducive to better interactions.

Conclusion

The installation's nature-inspired elements fostered a welcoming, calming environment that enhanced the experience by de-medicalising the space and connecting it to the outside. These findings underscore the therapeutic potential of art in clinical settings, demonstrating how thoughtfully designed environments can foster emotional well-being. The results suggest that such installations could have a positive impact on patient-staff interactions, although further study is needed to confirm this potential.

Contents

Prologue

Remembrance and Healing

At 11 am on the 11th day of the 11th month, as staff and patients gathered in the two-storey atrium of Frome Medical Centre for the annual pause for remembrance, this year, the traditional sacred silence was displaced by an ambience of birdsong.

Birdsong serves as a constant presence, a natural soundtrack to our sense of vitality, symbolising an innate desire to engage with life and its processes. As depicted in Sebastian Faulks' novel about the First World War, birdsong provided a continuous tone of normalcy, undiminished even in the face of immense dangers, clearing and purifying atmospheres that had been defiled by trench warfare and pandemics.

Birdsong reveals hope, offering solace and nurturing a sense of communitas and continuity. Two minutes of remembrance were softened by a poignant and fitting reminder that, within the context of healthcare, life goes on regardless.

Introduction

The effects of birdsong on mental health exist within a spectrum of potentially mutually beneficial relationships between animals and humans, with numerous studies in recent years focusing on this singular topic. (Add to this the personhood of trees, natural watercourses, seas, and oceans.) In 2019, scientists at the University of Surrey examined the "restorative benefits of birdsong." A 2022 study by King's College London, reported in the journal *Nature* and elsewhere, investigated how encounters with birdsong in natural settings could be prescribed to enhance mental health. Recently, in 2024, the *Guardian* newspaper, citing research from the University of East Anglia, informed its readers about 'Why birdsong matters more than you think,' referencing 'growing evidence about the health benefits of spending time in nature.' These benefits were said to include reduced risks of heart disease, diabetes, and anxiety. Aside from BBC Radio Four's popular *Tweet of the Day* segment, a common element in these studies is that the advantages of engagement reside 'in nature', outdoors.

The twice-Pulitzer Prize-winning biologist Edward Wilson coined the term *"biophilia*" to describe humanity's innate affinity for the natural world. He argued that this affinity resides in our DNA because we are a part of nature, and vice versa. Just as our health improves when we are in contact with nature, we suffer when separated from it.

Our study presents a distinct, perhaps unique, approach to this topic by examining the integration of birdsong and natural wildlife sounds *within* the medical practice. This "outside-in" perspective has not been previously documented. It aims to analyse the responses of patients,

staff, and visitors in a primary healthcare setting, addressing a significant gap in existing research. As a pilot study, it represents a step forward in exploring the potential for immersive stimuli featuring birdsong and other natural sounds to have a positive impact on healing and well-being in healthcare environments.

Frome Medical Practice's (FMP) involvement in this discussion began as an initiative to refresh the artwork displayed within the building, particularly in the atrium and corridors. The idea of incorporating nature sounds arose during the initial conversations; it felt fitting (and natural) as it aligned with the practice's ecological ethos and aspirations. These sounds were intended to be barely audible, creating an experience that blurred the separation between inside and outside.

At this time, artist Rob Irving had entered his video artworks into exhibitions such as the Wells Art Contemporary. His award-winning short films featured birdsong as an audible backdrop to the visuals ...indeed, more than a backdrop, as the sounds extended beyond the films' visual field of view. For example, in the cloister at Wells Cathedral, where Irving's work was displayed, birdsong could be heard some distance before the screen emitting the sound came into view. The sounds travelled well. The effect was quite mesmerising.

The partners at FMP invited Irving to showcase his films within the practice. With partial funding from a Frome Town Council Community Grant, a large TV screen was installed in the atrium of the Medical Centre in spring 2024, opposite the main entrance. This reception space serves as the hub for all medical treatment areas in the building, as well as an outpatient area, a community pharmacy, a district nurses' office, an adult mental health facility, and a café/meeting place. The integration of visual and audio elements led to an unexpected revelation; the sounds enhanced the atmosphere of the building, extending beyond the visual space and contributing to a more engaging and serene environment for patients, staff, and visitors.

The Present Study

The integration of specific types of artworks into primary healthcare settings is not merely an aesthetic choice; it represents a strategic approach aimed at enhancing the overall health ecosystem, reflecting a growing recognition of the significance of holistic patient care. This approach aligns with the broader concept of social prescription, which acknowledges that health is influenced not only by physical factors but also by a network of social and environmental determinants. The underlying hypothesis is that art—whether through visual displays, creative activities, or immersive installations—can contribute to improved healthcare experiences that nurture both mind and body. This overarching concept is generating an emerging body of empirical evidence, of which this study aspires to be recognised as part.

Figure 1: Irving's *Black-eyed Susans (Rudbeckia)* 2024 on a large screen in the FMP atrium

Addressing Gaps in Conventional Medical Practice

In her writings on social connectedness, FMP Senior Partner Dr Helen Kingston emphasises the limitations of conventional medical practices. Diagnosis-centred doctor-patient relationships often struggle to meet increasing healthcare demands, changing demographics, a broader range and complexity of issues, and an epidemic of chronic diseases. Traditional methods of practising medicine frequently fail to address patients' needs. Furthermore, modern society is experiencing a significant rise in demand for mental health services and support. This highlights the importance of creating environments that promote emotional and psychological well-being.

When woven into the healthcare experience, art serves as a subtle yet powerful means to bridge these gaps by contributing to a more supportive atmosphere. This rationale is rooted in

the ethos of FMP, which emphasises an ecology of social relations, the environment, and cultural context. By incorporating art into healing environments, sterile and impersonal clinical settings are transformed into more inviting spaces that promote comfort, resilience, and emotional uplift. Enriching environments in this way can also foster a sense of connection and security, which is particularly important in contexts where patients may experience stress and anxiety.

FMP has made significant progress in serving the local community by embracing new approaches and embarking on journeys of discovery. Some years ago, it pioneered the concept of "social prescription"—for instance, the so-called Frome Model has contributed to significant reductions in hospital admissions (Kingston *et al.,* 2018). This initiative evolved into a nationwide impetus to recognise the beneficial effects of art within healing environments. In economic terms, research indicates that every £1 spent on art saves the NHS up to £11—it is more cost-effective to help people maintain their mental and physical wellness than to treat illness. Primary healthcare practices are ideally positioned to facilitate innovative approaches to promoting good health and well-being, not only to prevent illnesses that require hospital treatment, but also to enhance quality of life and sustain a shared sense of community.

Notwithstanding the current study, artistic approaches have been shown to reduce stress, enhance mood, and nurture a sense of calm that can be instrumental in not only patient recovery but also in preventing the escalation of mental health issues. Furthermore, art's holistic benefits extend beyond the individual to staff and visitors, creating a shared experience that strengthens the fabric of the healthcare environment.

So what *exactly* do we mean by "art"?

Why "Art"?

To explain any biological phenomenon, such as art, we must first ask, "What is it?" This section presents a perspective on art that diverges from the conventional, "objective" view, emphasising instead its subjective and experiential nature. Art is not merely a quality embedded in an object but is linked to the responses of its audience, which we could call recipients. We can also speak of an "art experience". This opens up various ways of contemplating *what art is* and *what it does,* offering a clearer understanding of its underpinning principles and theories. Only then can we begin to address it in the present context.

A significant part of this discussion must focus on how art is perceived. The tendency of late capitalism to commodify art through objectification based on authorship—the *Fake or Fortune* model—is not relevant here. Instead, we have adopted a theory that emphasises art's

agency and how it invites active (though not necessarily conscious) engagement, rather than merely being decorative. In this, we must recognise that the essence of art does not reside solely in its material form, nor is it confined to the artist's vision. It arises from human engagement: an experience of multimodal sensory interaction with an object; in this case, sight and sound.

In the latter, what is particularly interesting here is how the sound element assumes a life of its own (quite literally, in the sense that the sounds can be perceived as real) when detached from the visual. Perception is dynamic, not static; it is experienced and deeply intertwined with various cultural and environmental contexts, such as place, space, and setting. The ear is an organ of observation rather than an instrument of playback. Sound is a phenomenon of experience. Our challenge here was to assess the cognitive and psychological impact of this within the context of a medical environment.

The combination of auditory and visual stimuli creates an immersive experience, as sound enhances the emotional and physiological effects of the imagery and vice versa. As one patient commented in a note left at reception:

> Just saw the doctor and came to the café to have a coffee. I could hear in the background the sound of birdsong—I felt as though I was in a spring garden, a lovely feeling indeed. Thank you so much for setting up the soundtrack. The flowers on the screen are a fitting display for a sunny garden filled with birdsong.
>
> Ingrid, patient, October 2024

A way of looking at art without being bamboozled by the "science" of art criticism is, 'making special', as defined by the anthropologist Ellen Dissanayake. Her theory acknowledges the relational complexity of creation that indigenous cultures have understood for millennia. Such concepts maintain their distinction by referencing their origins, suggesting that art has the potential to serve as an integrative medical resource. Here, the ancient Greek term *"aesthetics"* is returned to its etymological origin: *perception*. Accordingly, there is a wealth of anecdotal and empirical evidence supporting the effectiveness of emotions, feelings, and the ineffable essence of the "soul" on both the mind and body, which we might consider in this context. As Leonard Cohen put it: 'Come healing of the spirit, come healing of the limb.'

Another anthropologist, Marilyn Strathern, argues that the feeling of being baffled by novel ideas suggests that there is value to be gained from their exploration. After all, art, like myth, is one of the ways we imagine or rationalise future possibilities. A shift in perception can transcend the rational. Novel ideas, even rooted in the irrational, compel us to reconsider deeply held values

and perspectives in a world designed to resist diverse voices. In considering the anthropological otherwise, we make way for the continuous potential of a new rationality.

Art plays a significant role in this, aligning with Simon Schama's observation that art's power is the power of unsettling surprise. More recently, Brian Eno and Bette Adriaanse have defined art as 'something designed to evoke feelings. Our feelings guide us as we explore new futures.'

Such a methodology, then, may be phrased, as social scientist Donna Haraway (inspired by Strathern) does, that 'It matters what matters we use to think other matters with; what stories we tell to tell other stories; what thoughts think thoughts. It matters what stories make worlds and what worlds make stories.' (Haraway, 2016).

The installation at FMP has been a revelation in its transformative calming influence, and the open-plan interior provides ample acoustical space to extend the audio range throughout the practice, de-medicalising the space through connection to the "nature outdoors." Irving's giant yellow black-eyed Susans (*Rudbeckia*), accompanied by the sounds of bees and birds, render the atrium, as Ingrid declared, full of summer.

The difference in atmosphere this generates is so evident that we sought to assess its influence beyond the anecdotal. Our basis for further investigation was simple: how would these initial mood-changing responses translate into numerical data?

> [The artwork] transforms the feel of the building. As soon as you walk through the doors, you feel more relaxed. An absolute delight, thank you.
>
> Timothy, patient, October 2024

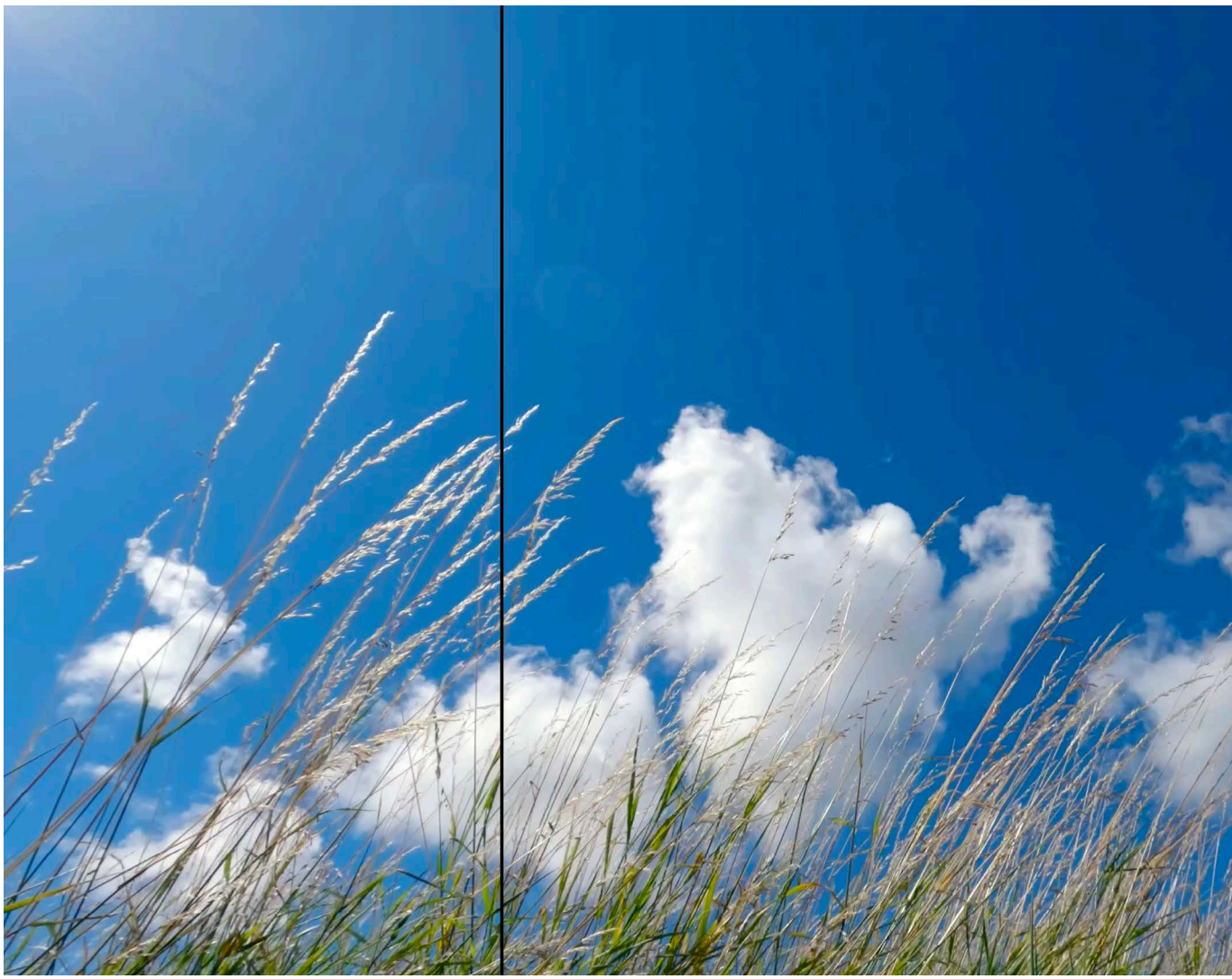
Place and an Unexpected Benefit of Bare Wall Space

The scale and architecture of the building housing FMP feature a spacious atrium and wide corridors spanning two floors, leading to separate waiting areas. This arrangement creates extensive wall space throughout the building, which has sonic implications. The use of visual art to dampen sound in the waiting areas indicates the building's unique acoustic properties, which this art installation has utilised to its advantage. The screen's strategic positioning allows it to be viewed from both the ground floor and upper-level walkways. The open-plan architecture, with ample bare wall space, enables reflected sound to travel freely throughout the public spaces of the practice. This has created conditions for an unexpected revelation that could be described in terms of the 'phenomenon of experience' mentioned earlier.

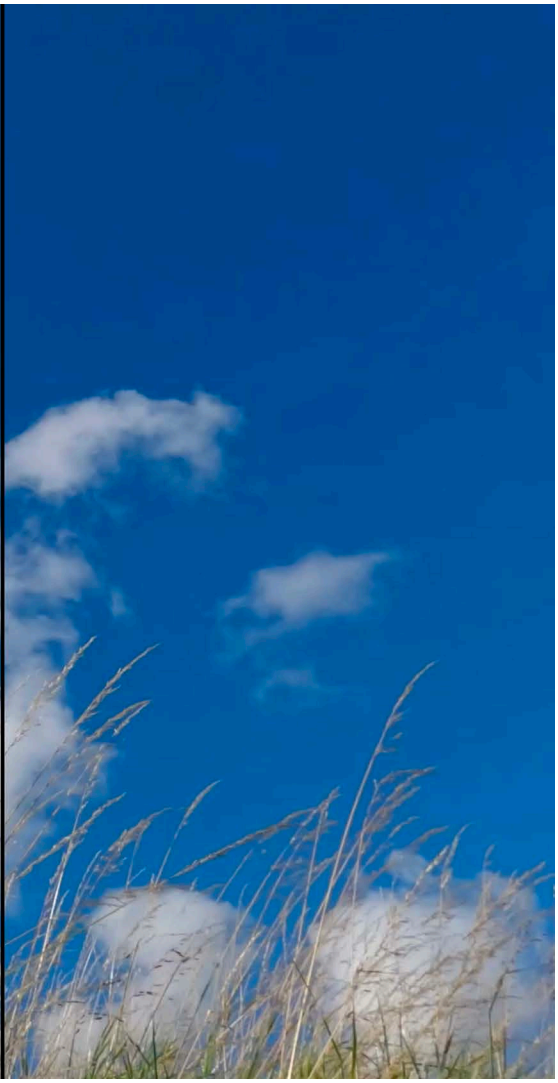
The Artwork

The artwork featured in this study comprises nineteen films, each with a length ranging from three to twenty-five minutes, all presented in a continuous loop. They feature single scenes of natural landscapes, studies of flora and fauna, as well as water and sky. Unlike conventional art films, which are intended to be watched in their entirety, these function in a different temporal manner, as they contain no camera movement and no overt narrative. In this way, they draw inspiration from Andy Warhol's "Anti-films," with minimal action and a unified field that aspires to the "spare"—i.e., elegantly simple.

The films utilise time-lapse and slow-motion techniques to manipulate time. Their single-point perspective allows viewers to step away from the screen without missing any action and to return to subtle changes, such as the movement of clouds or the shadow of a misplaced tripod acting as a sundial. These methods capture environmental changes that often go unnoticed in real-time, including drastic shifts in wind direction and cloud movements, and slow the flow of fast-moving elements, such as water.



The visual presentation utilises multiple frames from two or three cameras, each slightly out of sync and spaced apart, emphasising kinetic abstraction and revealing the creative process. Accompanying the films are sounds crafted to enhance the visual experience. However, as explained, these sounds captivate a wandering audience without necessarily linking to the visual aspect of the artwork. Birdsong offers a consistent, continuous tone that symbolises our innate desire for life; here, it is complemented by natural sounds such as flowing water, the rustling of windswept barley, blending psithurism with yogic breath regulation, the hum of bees, and the occasional buzz of grasshoppers. Out of the revelation of how far the sounds travelled within the practice, another unfolded. Although they were intended to be subliminal, incorporating low-volume, life-affirming natural sounds into the clinical environment helped foster a sense of calm among patients, staff, and visitors. This prompted a need to evaluate the influence of the sounds beyond the anecdotal to turn anecdotes into data.



Grass & Sky

Aims and Hypotheses

This study aimed to assess the impact of the immersive artwork on patient mood and overall experience within the reception environment. Specifically, we hypothesised that patients would report greater positive affect as a result of feeling calm, being distracted from discomfort, feeling engaged by the environment and connected to nature. Additionally, we hypothesised that patients would experience reduced negative feelings in response to these subtle changes.

The study also aimed to capture staff perceptions and experiences of the artwork by addressing the following research questions:

1/ What is the perceived impact of the art installation on the overall environment?

2/ What value does the artwork add for both patients and staff?

These questions arose from conversations about the potential of art to reduce hostility toward patient-facing staff. Can positive responses to art help alleviate negative emotions, and how can we best measure this effect?

The overall aim of the study was to explore the potential value of artwork in enhancing patient and staff experiences, while contributing to a calmer and more connected environment.

Soothing the Space

The artwork is described as calming and relaxing, providing a positive distraction from a typical medical environment. This theme is crucial, as it resonates with both patient and staff perceptions of the space, making it more soothing and uplifting. The frequent use of terms like “calming” and “relaxing”—mentioned 52 and 25 times respectively—reinforces this theme as a significant aspect of the installation’s impact.

The theme of Soothing the Space was mentioned as the most frequently noted effect of the art installation. Both staff and patients described how the artwork helped to create a calming atmosphere. The natural sounds and sights were often contrasted with the typical clinical setting (e.g., bare walls, posters, noise).

This positive sentiment is reflected in the frequency of words used to describe the artwork. As seen in the word cloud overleaf, the more frequently a word appeared in staff responses, the larger it appears, visually emphasising the most common themes and impressions.

Word Frequency of Descriptions of the Artwork

The emotional impact of the artwork was evident, with many participants describing how the installation made them feel more relaxed and helped alleviate stress by creating a soothing atmosphere. The sounds and visuals of nature contributed to an overall sense of calmness and positivity, transforming the emotional tone of the space.

Here are some of the remarks made by staff and conference attendees in the survey...

> *It gives the building a bit of life and soul. It creates a pleasant and uplifting working environment.* (P1 Staff)
>
> *It creates a sense of calm in the practice. So lovely to have the sights and sounds of nature.* (P15 Staff)

These responses reflect a strong appreciation for how the artwork contributed to a sense of well-being in a space that is traditionally more clinical and sterile.

> *[The artwork] creates a calmer space. Every time I hear the sound, it makes me smile and calms me a little. It makes the environment feel less medical.* (P34 Staff)
>
> *It's a lovely and welcoming feature in the entrance area. I don't like it when the screen is switched off, as it becomes a blank, empty space.* (P40 Staff)

Participants also commented on the environmental transformation. The installation created both a visually and audibly soothing atmosphere, helping to distract from the typical sounds and sights of a medical practice. It was seen as breaking up the usual sterile medical environment by providing sensory stimulation, making the space feel less medical and more welcoming.

> *I think it's calming, a distraction to the clattering and bustle of a busy medical practice.* (P41 Staff)

> *Yes, it has transformed the atmosphere, on arrival and waiting.* (P43 Staff)

This shift in the physical environment was particularly noted for its capacity to alleviate stress through natural elements, such as the sounds of water (n = 8) and birdsong (n = 21), thereby fostering a more engaging and tranquil space for both patients and staff.

Thematic Results

In addition to analysing sentiment and word frequencies, we analysed open-ended responses to identify key themes related to staff experiences with the artwork. Several prominent themes emerged...

The theme of Soothing the Space illustrates how the installation has had a dual impact: emotionally, by helping patients and staff feel more relaxed and welcomed, and physically, by transforming the sensory experience of the medical environment. The installation was widely recognised for its ability to offer a calming break from the traditional medical setting, which staff and patients valued as an essential aspect of a more positive healthcare experience.

A Ripple of Calmness

This theme highlights the practical benefits of the installation, not only for patients but also for staff, who expressed a belief that calmer, more relaxed patients improve the patient-provider relationship, leading to more positive interactions. As the second most frequent theme, with nine staff members (18%) indicating that they felt the artwork eased patient interactions, it reflects the idea that environmental design can have a ripple effect that extends beyond patient mood.

Participants described the space as more conducive to positive patient interactions due to the calming influence of the artwork. The installation's use of birdsong and nature sounds was explicitly cited as contributing to this atmosphere of tranquillity:

> *'I think the bird sounds can also add to a feeling of calmness for the patients.'*
>
> (P10, Staff)

It was this increased sense of calm that staff felt directly impacted patients' behaviour and emotional state, making them easier to interact with:

> *I hope it creates a calmer mood in the space, making patients calmer and easier to work with for clinicians.* (P6, Staff)

> *Calming waiting areas will mean calmer patients for appointments.* (P27, Conference)

The belief that a calming environment benefits both patients and staff was particularly emphasised in relation to clinical and reception staff, who are often the first to engage with patients as they arrive. Staff observed that calmer patients translate into easier, less stressful interactions, reducing patient distress, anxiety, and agitation:

> I*f it makes patients and visitors calmer, then this will have a direct impact on staff, especially the front-of-house staff, who are the first point of contact and often face challenging situations.* (P35, Conference)

> *It's calming and welcoming, which will undoubtedly help [patients] feel more at ease coming in for medical appointments.* (P44, Staff)

The installation's calming effect was also seen as beneficial in family interactions within the space, particularly for young children. Several staff members noted witnessing patients using the installation to soothe their children or engage them with the visuals and sounds. Staff reported a similar anecdote about a patient with dementia.

> *I've witnessed more than one young mother using the sound source to soothe their babies to sleep. Additionally, parents are showing toddlers the images.* (P32, Staff)

> *A woman bringing her mother in who had dementia said it had really helped relax her mother, who was quite agitated on entering the practice; watching and listening to the screen had been really helpful in calming her Mum.* (P17, Staff)

These observations underscore the broader impact of the installation beyond individual patients and staff to personal interactions. By creating a calming environment, the artwork promotes not only positive patient experiences but also potentially eases interactions with staff, particularly those in direct patient care. This ripple effect indicates that the installation's benefits are multifaceted, helping reduce patient stress, which in turn enhances the working environment for staff.

Overall, this theme reflects a strong belief among staff that the ripple effect of calmness generated by the artwork would diminish patient anxiety and foster a more positive, less stressful environment for both patients and those working on the front lines of patient care, thereby easing staff-patient interactions.

Navigating Ambiguities in the Experience

The theme of Navigating Ambiguities in the Experience captures the minority of responses in which staff expressed concerns or highlighted limitations regarding the artwork's impact. This is explored through two sub-themes. First, Sounding the Silence examines staff observations about the practical limitations of the installation, particularly its location in the entrance space, which hinders its full impact from reaching the waiting rooms where patients spend the majority of their time. Second, Mixed Signals reflects the concerns of a small group of staff members who found aspects of the installation potentially confusing. This contrasts with the artist's intention to challenge conventional expectations, particularly in medical environments.

Sounding the Silence

This sub-theme demonstrates that while staff perceived the installation as adding value to both patients and staff, seven (14%) noted that its impact was limited due to the audio not reaching the waiting areas where most patients spend their time. This suggests that while the installation was effective in the reception area and corridors, its potential is constrained by the practical limitations of its current location. Staff felt that the calming effect of the artwork could be enhanced if audio were more widely distributed throughout the waiting areas, where it was felt that patients often experience heightened anxiety. As one staff member observed:

> *I think it would have a greater impact if it were in the waiting room—this is where patients spend most of their time and, therefore, are more likely to experience worry and anxiety.* (P16, Staff)

This sentiment was further reflected in a broader interest in expanding the initiative, with some staff envisioning a rollout beyond the practice:

> *If an incentive were rolled out across the NHS for all waiting rooms to have access to this…* (P44, Staff)

This highlights a firm belief in the artwork's potential to create positive change for patients, reinforcing its value as an impactful element in healthcare environments. Indeed, beliefs in the benefits of extending the audio were widely held:

> *I would love to hear the birdsong in the waiting areas. This would extend the benefits to the rest of the practice.* (P6, Staff)

Other participants went further, elaborating on how areas were 'crying out' for improvement in atmosphere, implying that they are currently perceived as more stark medical spaces:

> *I think waiting areas would benefit more from the immersive art; the Area 6 waiting room, in particular, is crying out for something to improve the ambience.* (P16, Staff)

This contrast is evident alongside the de-medicalising effects discussed in the theme Soothing the Space. The calm and inviting atmosphere created in the entrance area may accentuate the starkness of the more traditional, quiet medical waiting rooms, rendering these spaces even more sterile by comparison. Moreover, this contrast could ultimately detract from the overall patient experience in these rooms.

Overall, this feedback highlights the importance of considering how the installation can be further enhanced to maximise its positive impact by expanding its reach into key patient areas. The potential to expand the artwork, particularly the sounds, across waiting rooms suggests that it could play a more comprehensive role in creating a calming and emotionally supportive environment for patients during their time at the practice.

Mixed Signals

This sub-theme indicates that while most staff viewed the installation as valuable for creating a calming and engaging environment, a small number of participants (n = 6, 12%) expressed confusion or concerns regarding specific elements, particularly the birdsong and visual presentation. Some participants noted that certain sounds, such as the chirping of crickets, might trigger discomfort for patients with sensory issues.

> *Some patients have found certain videos and sounds on the screen to be quite triggering due to sensory issues. Especially the crickets.* (P21, Staff)

Another staff member commented, 'I do worry it may be confusing for patients who are mentally unwell, for instance, the birds.' (P47, Staff). These responses emphasise the potential for certain aspects of the installation to be 'overstimulating' or 'confusing' for a particular group of patients, especially those with 'sensory sensitivities' or 'mental health concerns'. One respondent expressed that they felt perplexed by the use of a television screen in a medical centre for artistic purposes, believing it subverted their expectations of what 'should' appear on such a screen:

I wonder if it confuses [others] just as it confused me. The bird song—I looked for trapped birds until I realised that the noise was coming from there. As it resembles a TV screen, I wonder if they expect it to offer occasional updates. (P36, Staff)

This feedback suggests that the audio-visual elements of the artwork may not resonate equally with all staff and patients, particularly those who expect a more functional use of the screen. However, these reactions were rare, and the overwhelmingly positive responses suggest that the installation was, for the most part, well-received. Indeed, one patient expressed a mirror image of this perspective, rejecting the over-saturation of such functionality:

I am so relieved the screen isn't a vehicle for adverts or medical information.

(Handwritten feedback, patient)

This idea of provoking different interpretations is intentional; as the artist noted, 'Art is about challenging perceptions. It perplexes people and makes us go off with a problem we cannot solve without changing.' While some individuals may find the multimodal aspects of the artwork confusing, as shown in the theme Soothing the Space, the majority of participants engage with it more pleasurably. It appears that, particularly for those experiencing the artwork for the first time, active engagement often extends to interpreting the experience in a way that stimulates thought and challenges traditional expectations:

It was a standout display and such a different style for a GP Surgery.

(P27, conference attendee)

It's unusual, fun, and thought-provoking. (P29, conference attendee)

This suggests that by successfully blending aesthetic pleasure with conceptual stimulation, the artwork not only creates a calming and welcoming space but also challenges existing boundaries by offering an unconventional experience that encourages participants to rethink what a medical setting can be, prompting them to reconsider their approaches to healthcare.

Nonetheless, this Mixed Signals sub-theme, which reflects the balance between artistic expression and accessibility, highlights an important consideration: while the installation overall aligns with FMP's aim to create a calming environment, it must also ensure that it remains comfortable for all patients, particularly those with specific sensory needs.

N.b. The artist has addressed these latter concerns by reducing the volume and frequency of certain sounds and even removing them entirely. This aligns with the long-term necessity to preserve the mutability of the artwork, which evolves as new films are added and others are

removed. This is significant because artworks tend to integrate into their surroundings or, at the very least, lose their mystery and surprising impact over time. For the art to remain relevant, it is essential to maintain these "surprise bumps".

Visualising Values

Several staff members perceived the artwork in the atrium to be a visual representation of FMP's core values, particularly their commitment to sustainability and patient-centred care. While this theme emerged less frequently than others (*n* = 3, 6%), its significance lies in how the artwork reflects the broader ethos of the practice, revealing meanings associated with the installation.

One staff member shared how the artwork influenced their first impressions of the practice:

> *When I first walked in for my interview, I knew I wanted to work for a company that could see the value in something as simple and effective as this.* (P44, Staff)

This highlights how the artwork not only enhances the physical space but also gives the place meaning, reinforcing FMP's values in a tangible and impactful way.

The nature-based elements of the artwork were also seen as symbolic of FMP's dedication to sustainability. This is illustrated by another participant who noted:

> *At a recent meeting, someone new to the practice mentioned that they had heard about the work we are doing on sustainability and nature connectedness. They were struck by their experience walking in and felt that the images and sounds were both beautiful, representing our commitment to the work we do.* (P50, Staff)

In addition to symbolising sustainability, staff emphasised the calming effect of the artwork, linking it to FMP's aim of creating a welcoming environment. As one staff member commented:

> *It's so welcoming and calming; when I walked through the door for the first time, it instantly made me feel at ease. The photography is stunning. This is a straightforward way to demonstrate to everyone what FMP is all about.* (P44, Staff)

This sentiment was further reflected in the frequent use of the term "welcoming" (*n* = 9), suggesting that the artwork plays a key role in shaping the overall atmosphere of the practice.

By creating a space that feels inviting and calming, the installation clearly aligns with FMP's mission to provide holistic care that supports both the physical and emotional well-being of patients. The repeated use of the term "welcoming" emphasises that the calming effect of the artwork is not merely an aesthetic choice but rather a deliberate and functional element of the

environment aimed at enhancing the experience for both patients and staff. As previously discussed, this has social implications that extend beyond decorative "art" to encompass lived sensory engagement, emotional affect, and environmental context. This reinforces the notion that cultivating a positive emotional atmosphere—one that fosters calmness and comfort while reducing stress—is integral to delivering compassionate care.

This perspective is further echoed in the response of another participant who emphasised how the inclusion of artwork—both visual and audible—signals FMP's unique approach to care:

> *It shows patients that the practice does things differently, complemented by the art throughout the rest of the building.* (P6, Staff)

In summary, this particular artwork serves as a tangible reflection of FMP's values, especially its emphasis on well-being, connection to nature, and compassionate care. While the installation primarily enhances the aesthetic environment, it also subtly supports FMP's mission to create a calming and supportive space for both patients and staff. In doing so, it reinforces the practice's commitment to providing holistic care that considers the emotional and psychological needs of everyone—patients, staff, and visitors—in the healthcare setting.

Discussion

Summary Recap

Given the strong anecdotal feedback regarding the calming influence of Rob Irving's art installation, this study aimed to assess its impact on patient experience. Specifically, it aimed to determine whether the work increased positive emotions (such as calmness, engagement, and connection to nature) and reduced negative emotions. Furthermore, the aim was to explore staff perceptions of whether and how the artwork enhanced the clinical environment for both patients and staff. The overarching goal was to investigate how the art installation contributes to a calmer, more connected healthcare environment for everyone involved.

The results indicated a statistically significant relationship between referencing the artwork and the expression of positive emotions. Participants who mentioned the artwork unprompted were significantly more likely to report positive feelings compared to those who did not. The odds of experiencing positive emotions were 7.2 times greater for individuals who referenced the artwork, highlighting a significant difference that suggests engagement with the artwork led participants to feel more positive during their time in the practice.

The Strengths and Limitations of the Study

This project was always intended more as an observational study than a formal scientific one, and accordingly, we acknowledge its limitations: primarily, a lower number of participants than we had hoped for. Despite a roster of nearly 30,000 patients to draw from, encouraging participation in the patient survey proved challenging. While this ensured a busy reception area, in reality, on any given day, very few patients responded to our posters inviting them to 'Join our Survey'. This was not due to any lack on the part of the reception staff. Generally, whether queuing or engaging with the reception staff, patients tend to want to focus on other matters and are usually in a rush to address these and leave.

The Positive and Negative Affect Schedule (PANAS) section of the patient survey proved to be more challenging than some participants had anticipated. The reception staff reported that its complexity discouraged participation. Although a digital tablet was available, busy staff would have been aided by more direct support in engaging participants and guiding them through the survey. Nevertheless, we are grateful to those who took part and appreciate their contributions.

Initially, the intention was to collect "no screen" data as a control; however, this effort was discontinued. Since the screen was installed, its films and sounds have become integrated into the practice's natural environment. Collecting "screen on" data took longer than expected, raising concerns about the feasibility of a similarly extended period with the screen switched off.

The lack of adequate control data currently impairs our ability to draw causal conclusions when evaluating the success of the art in relation to patient responses. One vital lesson here is that further research in this area will require more effective methods of gathering data to achieve a broader demographic scope. The challenge lies not only in what data is collected, but also in how it is collected, a point worth reflecting on regarding methods that may be more suitable for the task. Art is often messy, and the irony here is that so is social science.

Additionally, the absence of control data, combined with a relatively low number of patient participants, has created an imbalance between quantitative and qualitative data. This has led to a shortage of descriptions of experiences and a failure to incorporate diverse perspectives. When re-contextualising art within an anthropological framework, subsequent studies may benefit from employing appropriate methods to evaluate a more enriched data pool.

Any future study might include interviewing patient participants, both individually and in groups, as a follow-up to gather their reflections and feelings about the art experience, similar to how the staff survey invited these and analysed them accordingly. This closer contact could be limited to patients who mention the artwork and sounds, in particular, and would like to discuss

and learn more about them. This would help restore the depth and richness that traditional quantitative methods (surveys and analyses) often lack due to investigators' reluctance to forsake the appearance of analytical and academic certainty. The methodological tools and theories offered by anthropology present greater potential for cross-cultural and interdisciplinary analysis and would also serve as a solid foundation for further creative projects.

The possibility of testing whether increased positive emotions can *displace* negativity is an open question, but it carries a distinction worth noting. Patients who referenced the artwork all did so positively, and the analysis found no correlation between participants mentioning the artwork and experiencing negative emotions. While it seems reasonable to assume from this that art which enhances positive emotions would naturally reduce levels of negativity, this cannot be conclusively inferred due to the limited dataset and a lack of control measures.

The explicit reduction of negative emotions seems to be a more subtle influence from the overall environment (e.g., grey walls and café noise were cited as negative). Understanding the potential relationship between the calming effect of art and its ability to mitigate negativity could be valuable, even if eliminating negativity is unlikely, given its inherent and entrenched nature. Nevertheless, even a slight shift toward positivity could bring significant benefits. It is possible that our study could have revealed this, and perhaps it is “hidden in plain sight”. One thing we can be sure of is that the calmer, warmer air creates a welcome uplift.

Before continuing this discussion, we should revisit how these relationships were tested and examine some of the finer points of this line of argument.

“Active Engagement”

The staff survey was considerably easier to administer—an email to staff and accessible posters with QR codes elicited a quicker response and higher participation. This questionnaire centred around responses to the artwork, unlike the broader themes in the patient study.

While the results indicate that active engagement with the artwork has a positive impact, the question of which specific aspect—visual or auditory—remains open as both can influence emotions differently. In general, patients commented on the sound without linking it to the visual source, the screen. Although the latter has its attractions and calming influence, it is essential to note that sounds can be experienced and appreciated independently..

Furthermore, "active engagement" can signify attention to both the new and the familiar. This multimodal artwork illustrates how the element of surprise in art can resonate, irrespective of its actual source. Once more, perception is dynamic, and our experience inevitably involves blurring the boundaries between reality and imagination, as some experiencers did with the birdsong.

Art fosters a safe space for this. Could the primary purpose of the artwork lie in its sounds? While the visual element is a focal point, it is also a MacGuffin—a device that suggests context but is ultimately unimportant—as the audio carries its own agency, quietly moving along walls and around corners to reveal a different, more subliminal form of art experience. As one patient remarked wittily to reception staff on leaving after hearing "birds" within the practice:

> You have a bird problem. It's great!
>
> Random patient, November 2024

Conclusion

> The cause is hidden. The effect is visible to all
>
> Ovid (43 BC-AD 17/18)

Our initial interest in the influence of art within a primary care setting has evolved into a study of environmental perception, prompting a re-evaluation of its significance in a medical context. The results indicate that nature-inspired experiential art cultivates a calming atmosphere in this medical practice, raising further questions such as "Why?" and "So what?" These questions, along with others, merit further research.

The films and soundtracks reflect FMP's patient-centred approach and commitment to environmental issues, aligning with its broader values and the well-being of patients and staff. The two separate surveys provide insights into the potential of experiential art in clinical settings, suggesting opportunities for a deeper understanding of how art and space can influence and shape each other. This is encouraging. The idea that active engagement extends beyond simple awareness of the senses warrants investigation, even if "just" in a supportive, hand-in-the-small-of-the-back kind of way, as it invites further consideration of sensory experiences that may be effective in specific healing contexts.

The data indicates that experiential art interventions have a positive impact on these relationships, aiding mindfulness, stress reduction, and overall mental and potentially physical health. From here, further explorations might test some of these hypotheses and shed sufficient light to investigate new potentialities.

How outlandish are the possibilities that certain sounds can therapeutically engage with the brain's interface, the very fabric of our thoughts and consciousness? Following Strathern's example, can we envision a time when strategies for healing divisions between mind and body become more the norm than the exception?

Rob Irving (Dr.), Matisse Lack

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Appendices

Appendix 1
Data: Tables and Analysis

Participants

Patient Participants

Data were collected between July 10 and August 30, 2024. In total, 46 patients began the survey; however, 2 were excluded because they submitted their responses after their visit, and 7 were excluded for not completing the closed-question section of the survey. This resulted in a final sample of 37 participants. Full demographic details for the initial and final samples can be found in **Table 1**

Demographics for Patient Participants

Demographic	Full Sample (n = 46)	Included Sample (n = 37)
Age *Mean (SD)*	54.4 (17.5)	54.0 (18.8)
Gender		
Women	29 (63.0%)	25 (67.6%)
Men	14 (30.4%)	10 (27.0%)
Non-binary	1 (2.2%)	1 (2.7%)
Prefer not to say	1 (2.2%)	1 (2.7%)
Frequency of Visits		
Most weeks	11 (23.9%)	9 (24.3%)
Most months	5 (10.9%)	5 (13.5%)
A few times a year	24 (52.2%)	20 (54.1%)

Staff Participants

A total of 56 participants began the staff survey; however, 6 participants were excluded due to non-completion. This resulted in 50 participants who completed the survey and were included in the final analysis. Full demographic details for both the initial and final samples are presented in **Table 2**

Demographics for Staff Participants

Demographic	Full Sample (n = 56)	Included Sample (n = 50)
Age Mean (SD)	46.3 (12.6)	46.2 (12.1)
Gender		
Women	44 (74.6%)	40 (80%)
Men	10 (16.9%)	9 (18%)
Non-binary	0 (0%)	0 (0%)
Prefer not to say	2 (3.4%)	1 (2%)
Workplace		
Frome Medical Centre	47 (79.7)	42 (84%)
Other NHS	9 (15.3%)	8 (16%)

Patient Survey

Environmental Experience Questions

A custom survey was developed to evaluate patients' experiences in the reception area (see Appendix A for the survey).

Three demographic questions captured participants' age, gender, and number and frequency of visits to the centre within the past year.

Two items focused on mood changes in response to the environment, such as "How has your anxiety been since you arrived in the reception area?" with response options: "less anxious," "more anxious," and "stayed the same."

Seven items assessed perceptions and experiences of the reception environment, including items such as "Do you find the look of the reception area pleasant?" and "Do you feel actively engaged by the reception area environment?" Responses were rated on a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). Each item was scored individually. An additional item, "Overall, how satisfied are you with the reception area environment?" was rated on a 7-point Likert scale ranging from 1 (Very Dissatisfied) to 7 (Very Satisfied).

Finally, two optional open-ended questions were included at the end of the survey, allowing participants to provide additional feedback. An example item was, "Is there any other feedback on your experience in the reception area that you would like to share?"

Positive and Negative Affect Scale

The Positive and Negative Affect Scale (PANAS) was included to assess emotional responses to being in the reception area. PANAS consists of 20 items (10 for positive affect, 10 for negative affect), with examples such as "Excited," "Alert," and "Nervous" (Watson *et al*. 1988).

Participants were prompted to "Please indicate how much you have felt each of the following emotions during your time in the reception area,". This timescale was adapted from the original measure, which assesses emotions over the past week (Watson *et al*., 1988). Responses were recorded on a 5-point Likert scale ranging from 1 (Very Slightly or Not at All) to 5 (Extremely). For positive affect, scores for items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19 were summed, with scores ranging from 10 to 50. Higher scores indicated a greater positive affect. For negative affect, scores for items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20 were summed, with scores ranging from 10 to 50. Lower scores represented lower levels of negative affect (Watson *et al*., 1988).

Staff Survey

A custom survey was developed to evaluate staff opinions and experiences regarding the art installation. This included three demographic questions to capture participants' age, gender, and whether they were staff members at Frome Medical Centre or visiting healthcare professionals.

Five open-ended questions provided an opportunity for healthcare professionals to express their views on the impact of the art installation. These questions explored their feelings about the installation, perceptions of its added value to the medical centre, experiences related to the artwork with both patients and staff, and any additional feedback or comments (see Appendix C for the full survey).

Procedure

Patient Survey

Between July 1 and August 30, 2024, flyers were utilised to advertise the study and provide survey information (see Appendix B). These flyers included a QR code that directed participants to a survey hosted on SurveyMonkey, where they could find additional information about the study. Participants were informed that by proceeding to the questions, they were providing their voluntary consent to participate.

Once the survey was accessed, participants first completed demographic questions, followed by the main survey questions. Completion time was 5-10 minutes. Upon completion, participants were thanked for their time. No further debrief was provided to avoid biasing

participants who might attend the practice and fill out the survey multiple times during the data collection period.

Initially, the study was designed to include two conditions: one week with the immersive art installation (screen on) and one week without it (screen off). However, due to difficulties in collecting responses, data collection for the screen-on condition was extended to eight weeks, and no data were collected for the screen-off condition. The video and accompanying audio remained active throughout the entire patient data collection period.

Staff Survey

Data were collected from July 1 to July 13, 2024. Flyers and a brief statement in the weekly clinical bulletin were used to advertise the study and provide information about the survey (see Appendix D). In addition, responses were collected from visiting healthcare professionals on July 3, 2024, during a sustainability conference held at Frome Medical Practice. The same staff flyers were available at the conference, and a member of the research team was present with an iPad to assist in collecting responses.

Participants accessed the survey via a QR code, which directed them to an online platform where they were given further information about the study. They were informed that continuing with the survey implied voluntary consent. Participants then completed demographic questions and responded to the open-ended questions in the survey. Survey completion took 3-5 minutes. Upon completion, participants were thanked. No additional debrief was deemed necessary for the scope and nature of this evaluation. Likewise, the video and accompanying audio remained active throughout the entire staff data collection period.

Data Analysis

Patient Survey

The study was initially designed to compare participant experiences between two conditions (screen on vs. screen off); however, data collection for the screen-off condition proved to be infeasible. Consequently, post-hoc tests were conducted to explore patterns within the data for the screen-on condition, rather than the planned comparative analysis.

Descriptive statistics were calculated to summarise participant responses to both the Likert scale questions and demographic data. For continuous variables, such as Likert scale responses, means, medians, and standard deviations were reported. For categorical variables, including anxiety and mood, frequency distributions and percentages were presented.

A targeted correlation analysis was conducted to explore the emotional and experiential effects of the artwork by examining the relationship between PANAS scores and selected Likert

scale responses. The items measuring calmness, engagement, distraction, and connection to nature within the reception area were selected based on their theoretical relevance to the research questions (Ruxton & Beauchamp 2008). This focused approach reduced the number of correlations and minimised the need for multiple comparison corrections, such as Bonferroni adjustments, while ensuring the analysis remained statistically rigorous (Gelman *et al*. 2012; Sedgwick 2014). Spearman's rank correlation was used due to the non-normal distribution of most variables, except for positive PANAS scores (Hauke & Kossowski 2011). During the analysis, outliers with values of 0–2 were detected for each correlation. After reviewing the data, these outliers were deemed to be valid responses and were retained, as Spearman's rank correlation is robust to the presence of such outliers (Hauke & Kossowski 2011). Additionally, removing these outliers in a small sample could reduce the ability to detect genuine effects. To further improve the reliability of the results, bootstrapping was applied to generate empirical confidence intervals, providing a more robust estimate of the significance of the correlations, particularly given the non-normality and small sample size (Bishara & Hittner 2015).

Finally, based on the results of the correlations, a chi-square test was conducted to examine relationships between the high/low PANAS score categories and whether participants mentioned the artwork in the open-ended questions. Responses to the open questions were categorised based on whether they explicitly mentioned the artwork. Median positive and negative PANAS scores were calculated, and participants were categorised into high or low groups based on the median scores (median positive affect = [23], median negative affect = [11]) (DeCoster *et al*. 2011).

Staff Survey

The qualitative data from the staff survey was analysed using content analysis to explore staff perceptions of the environmental effect of the art installation and its value for both staff and patients. Descriptive statistics were generated for the positive and negative responses regarding the environmental effect, as well as for the yes/no responses addressing whether the installation provided added value for staff and patients. Conceptual content analysis was used to analyse the open-ended responses, focusing on individual words, such as "relaxing" and "calm," alongside broader themes like "represents FMP's ethos." Synonyms were treated as the same concept (e.g., "calm" and "calming"), while related terms were considered distinct to maintain nuance (e.g., "calming" and "relaxing"). The analysis began with pre-defined codes but remained flexible to the introduction of new categories as they emerged from the data. Coding focused on the frequency of concepts, counting how often each appeared. Inferences were made for broader themes but not for individual words. Finally, the analysis also sought to identify broader themes.

Results

The results first present descriptive statistics from the patient survey, including overall mood changes, anxiety levels, and participant responses related to the reception area environment. Correlation analyses follow, examining the relationships between PANAS scores and key experiential factors, including calmness, engagement, distraction, and connection to nature. A post-hoc chi-square analysis was conducted to further investigate specific patterns in the data. Lastly, the results from the staff survey are reported here, highlighting staff perceptions of the artwork's environmental impact and its value for both patients and staff.

Patient Survey Analysis

To assess the emotional impact of the reception area, participants were asked how their anxiety and mood had changed since arriving. The responses are summarised in Table 3, showing the distribution of participants reporting worsened, unchanged, or improved anxiety and mood.

Table 3

Frequency of Mood Changes

Question	Worse	Stayed the same	Better
How has your anxiety been since you arrived in the reception area?	4 (10.8%)	18 (48.6%)	15 (40.5%)
How has your mood been since you arrived in the reception area?	1 (2.7%)	25 (67.6%)	11 (29.7%)

Table 4 presents the mean to indicate the average perception or rating for each question, while the median is reported to provide a clearer sense of the central response. The median is particularly useful in cases where the data may be skewed or influenced by outliers, offering a better understanding of the "typical" participant's experience

Table 4

Descriptive Statistics

Question	Mean (Standard Deviation)	Median
PANAS		
Positive Affect	24.3 (9.6)	2.3
Negative Affect	14.6 (6.8)	1.1
Reception Experience Questions		
Do you find the look of the reception area pleasant?	5.68 (1.13)	6

Do you find the sounds in the reception area pleasant?	5.11 (1.49)	5
Do you feel the reception area is connected to the nature outside?	4.35 (1.59)	5
Do you feel distracted from any discomfort or stress whilst in the reception area?	4.41 (1.50)	4
Do you feel calmed by the reception area?	4.86 (1.53)	5
Do you feel actively engaged by the reception area environment?	4.68 (1.44)	5
Compared to previous visits to other medical buildings Frome Medical Practice's reception area is better?	5.41 (1.57)	6
Overall, how satisfied are you with the reception area environment?	5.49 (1.41)	6

Note. PANAS scores have been divided by 10 and are between 1 and 5, remaining questions are between 1 and 7.

Table 5 presents the distribution frequencies for the reception area experience questions, with responses categorised into negative, neutral, and positive groups. This provides an overview of how participants rated their experiences in relation to key aspects of the reception area environment. The distribution of responses offers insight into the general sentiment toward the reception space and its impact on participants' overall experience.

Table 5

Distribution Frequency for Reception Area Experience Questions

Question	Negative (strongly disagree, disagree, somewhat disagree)	Neutral	Positive (somewhat agree, agree, strongly agree)
Do you find the look of the reception area pleasant?	1 (2.7%)	2 (5.4%)	34 (91.9%)
Do you find the sounds in the reception area pleasant?	4 (10.8%)	7 (18.9%)	26 (70.2%)
Do you feel the reception area is connected to the nature outside?	10 (27%)	8 (21.6%)	19 (51.45)
Do you feel distracted from any discomfort or stress whilst in the reception area?	6 (16.2%)	15 (40.5%)	16 (43.2%)
Do you feel calmed by the reception area?	5 (13.5%)	11 (29.7%)	21 (56.8%)
Do you feel actively engaged by the reception area environment?	6 (16.2%)	10 (27%)	21 (56.8%)
Compared to previous visits to other medical buildings Frome Medical Practice's reception area is better?	3 (8.1%)	5 (13.5%)	29 (78.4%)

Overall, how satisfied are you with the reception area environment?	2 (5.4%)	7 (18.9%)	28 (75.7%)

Correlations Between Measures

The relationships between PANAS scores and key reception area experience variables were examined using Spearman's rank correlation. Table 6 presents the correlations for the measures.

Table 6

Correlations among PANAS Scores and Environmental Measures

Measures	1	2	3	4	5	6
1. Positive PANAS	—					
2. Negative PANAS	-.266 (.056) [-.511, .030]	—				
3. Calmed	.732 (<.001) [.089, .857]	-.340 (.02) {-.604, -.020)	—			
4. Actively Engaged	.811 (<.001) [.723, .863]	-.299 (.036) [-.545, .002]	.753 (<.001) [.561, .889]	—		
5. Distracted	.452 (.002) .104, .704]	-.241 (.076) [-.532, .106]	.549 (<.001) [.217, .772]	376 (0.11) [-0.37 .706]	—	
6. Connected to Nature	.402 (.007) [.124, .642]	-.081 (.318) [-.422, .304]	.601 (<.001) [.325, .812]	.426 (.004) [.099, .700]	.251 (.067) [-.154, .595]	—

Note. N = 37. Exact p values and 95% CIs are shown in parentheses and brackets, respectively.

Significant positive correlations were observed between Positive Affect PANAS scores and the feelings of calmness, active engagement, distraction, and connection to nature in the reception environment. This indicates that participants who felt the space was calmer, more connected to nature, more engaging, or more distracting experienced a more positive emotional response within the space.

Negative Affect PANAS scores were negatively correlated with these variables; however, only the correlations with feeling calmed and actively engaged reached statistical significance. This suggests that participants who felt the space was more calming or engaging had a less negative emotional experience in the environment.

In addition to the correlations between PANAS scores and the experience variables, significant correlations were also found between the experience items themselves, *except for the items related to distraction and nature connection.* These relationships suggest that perceptions of calmness, engagement, distraction, and connection to nature are interrelated, reinforcing the idea that these aspects collectively contribute to the overall emotional experience in the space.

Chi Square Analysis

Finally, to examine the relationship between the binary variables of whether participants mentioned the artwork or not and whether they had low or high positive affect.

The Chi-Square test revealed **statistical significance** in whether participants mentioned the artwork and whether participants had high positive affect ($\chi 2(1) = 5.816$, $p = .016$, Cramer's $V = .396$, $OR = 7.20$, 95% CI [1.28, 40.37]). As shown in Table 7, a greater percentage of participants who mentioned the artwork had a positive affect than those who did not.

Table 7

Frequencies of Positive Affect and Mention of Artwork

		Mention of Artwork		
		No	Yes	Total
Positive Affect	Low	16 (61.5%)	2 (18.2%)	18
	High	10 (38.5%)	9 (81.8%)	19
	Total	26 (100%)	11 (100%)	37

A Chi-Square analysis was also conducted to investigate the relationship between the binary variables of whether participants mentioned the artwork and whether they perceived it as having a low or high negative effect.

Results showed that there was no statistically significant effect on whether the participants mentioned the artwork, to having low negative affect $\chi 2(1) = 1.408$, $p = .235$ Cramer's $V = .195$, $OR = .419$ 95% CI [.098, 1.79]. As shown in Table 8, there was no significant difference in negative affect when the artwork was mentioned versus when it was not mentioned.

Table 9

Frequencies of Negative Affect and Mention of Artwork

		Mention of Artwork		
		No	Yes	Total
Negative Affect	Low	11 (42.3%)	7 (63.6%)	18
	High	15 (57.7%)	4 (36.4%)	19
	Total	26 (100%)	11 (100%)	37

Staff Survey Results

This section presents the results of the staff survey, which explored healthcare professionals' opinions and experiences with the art installation at FMP. Qualitative data were

analysed to understand the perceived value of the artwork, its impact, and any potential limitations. The results include frequency distributions and sentiment analysis of open-ended responses, as well as thematic findings from the content analysis.

As the staff survey included questions about the participants' general feelings toward the artwork, frequencies were calculated to assess how many participants responded positively, neutrally, or negatively to the artwork's presence. Table 10 presents the overall sentiment of staff responses regarding the effect of the art installation on the environment at Frome Medical Centre. This shows that the vast majority of staff reported positive experiences with the artwork.

Table 10

Sentiment of Staff Responses to the Question of Effect on the Environment

	Negatively	Neutral	Positively
How do you feel the art installation affects the environment of Frome Medical Centre? (*n* = 50)	0	5 (10%)	45 (90%)

Table 11 summarises staff perceptions of the added value the art installation brings to staff members and patients, divided into positive, neutral, and negative sentiments. Again, the vast majority of staff responded with the sentiment that value was added. Only a small minority of responses were negative or neutral.

Table 11

Sentiment of Staff Responses to the Question of Added Value

	No	Neutral	Yes
Do you think the art installation adds value to staff members? (*n* = 49)	5 (10.2%)	1 (2%)	43 (87.8%)
Do you think the art installation adds value to patients? (n = 48)	3 (6%)	5 (10.4%)	40 (83.3%)

Table 12 shows the frequency of specific words used by staff to describe the art installation, identifying the most salient qualities attributed to the artwork. The most frequently mentioned words were 'calming' and 'relaxing.'

Table 12

Frequency of Staff Words Describing the Installation

Most Frequent Words	Frequency
Calming	52
Relaxing	25
Uplifting	14
Lovely	13
Beautiful	9
Welcoming	9
Distracting (positive)	8
Enjoyable	7
Confusing	6
Loud	5

Table 13 presents the frequency of staff-reported words related to the specific components of the artwork. This table highlights the aspects of the artwork that most captured staff attention, with an emphasis on auditory components, such as birdsong and general natural sounds.

Table 13

Frequency of Staff Words on Artwork Components

Codes	Frequency
Any Audio	62
Any Visuals	53
Birdsong (Audio)	21
Water (Audio)	8
Water (Visuals)	4
Insects (Audio)	2
Plants (Audio)	1
Wind (Audio)	1
Light (Visuals)	1

Table 14 provides a summary of the key themes identified in the content analysis, along with the number of participants who mentioned each theme.

Table 14

A Summary of Key Themes

Theme	Subtheme	Number of Participants
Soothing the Space		42
A Ripple of Calmness		9
Navigating Ambiguities in the Experience		
	Sounding the Silence	7
	Mixed Signals	6
Visualising Values		3

Appendix A: Patient Survey

Thank you for participating in our survey about the reception area environment at Frome Medical Centre. The purpose of this survey is to gather feedback to help us improve the experiences of our patients.

Your responses are anonymous and confidential. We will not collect any information that can directly identify you, and your answers will be used only for this study.

Your participation is voluntary. You have the right to exit at any time. By continuing with this survey, you are giving your consent to participate.

The survey should take 5-10 minutes to complete.

Thank you for your time and feedback.

Instructions

Please think about the environment (i.e., the overall look, feel, or atmosphere) of the reception area in Frome Medical Centre.

The reception area includes the entry atrium, cafe, and walkways leading to various parts of the building. It does not include waiting areas. This is the first space you enter and pass through when you come into the building.

There are no right or wrong answers, but please try to answer honestly.

Demographic Questions (required)

- What is your age? (number slider to answer)
- What gender do you identify with? (Man, Woman, Non-binary, prefer not to say, prefer to self-describe [include space for imputing own answer])
- Including your visit today, how often have you visited Frome Medical Centre in the last year? (Once a year, a few times a year, most months, most weeks)

Closed Questions (required)

Thinking about how you felt before arriving in the reception area...

- How has your anxiety been since you arrived in the reception area? (less anxious/more anxious/stayed the same)

- How has your mood been since you arrived in the reception area? (better mood/worse mood/stayed the same)

Please answer each of the following questions on a scale of 1 to 5 where 1 is “Disagree” and 5 is “Agree”

Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

- Do you find the look of the reception area pleasant?
- Do you find the sounds in the reception area pleasant?
- Do you feel the reception area is connected to the nature outside?
- Do you feel distracted from any discomfort or stress whilst in the reception area?
- Do you feel calmed by the reception area?
- Do you feel actively engaged by the reception area environment?
- Compared to previous visits to other medical buildings Frome Medical Practice’s reception area is better?

- Overall, how satisfied are you with the reception area environment?

Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Neutral	Somewhat Satisfied	Satisfied	Very Satisfied

PANAS

Please indicate how much you have felt each of the following emotions during your time in the reception area.

Indicate the extent you have felt this way over the past week.		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
PANAS 1	Interested	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 2	Distressed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 3	Excited	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 4	Upset	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 5	Strong	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 6	Guilty	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 7	Scared	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 8	Hostile	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 9	Enthusiastic	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 10	Proud	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 11	Irritable	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 12	Alert	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 13	Ashamed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 14	Inspired	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 15	Nervous	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 16	Determined	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 17	Attentive	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 18	Jittery	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 19	Active	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 20	Afraid	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Open Questions (optional)

- What aspects of the reception area environment did you find most pleasant or unpleasant, and why?

- Is there any other feedback on your experience in the reception area that you would like to share?

Thank you for taking the time to complete our survey. Your feedback is valuable and will help us improve the reception area environment at Frome Medical Centre. We appreciate your input and participation.

Appendix B: Patient Flyer

Appendix C: Staff and Conference Survey

Informed Consent

Thank you for participating in our survey about the nature screen art installation at Frome Medical Centre. The purpose of this survey is to gather feedback to help us improve the experiences of our patients and staff members.

Your responses are anonymous and confidential. We will not collect any information that can directly identify you, and your answers will be used only for this study.

Your participation is voluntary. You have the right to exit at any time. By continuing with this survey, you are giving your consent to participate.

The survey should take 3-5minutes to complete.

Thank you for your time and for providing your feedback.

Instructions

Please answer these questions in relation to the art installation by Rob Irving in the reception area, playing nature sounds and video.

Demographic Questions (required)

- What is your age? (number slider to answer)
- What gender do you identify with? (Man, Woman, Non-binary, prefer not to say, prefer to self-describe (include space for inputting own answer))
- Do you work at Frome Medical Centre? (yes/no I'm visiting for the conference)

Open Questions (required)

- How do you feel the art installation affects the environment (i.e., the overall look, feel, and atmosphere) of Frome Medical Centre?"

- Do you think the art installation adds value to staff members? Please explain:

- Do you think the art installation adds value to patients? Please explain:

Open Questions (optional)

- Are there any experiences with patients or other staff members related to the art installation that you'd like to share?

- Any other feedback?

Appendix D: Staff flyer & bulletin message