

# Media Art in Healthcare Environments: Enhancing Student's Well-being and Mental Health

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## ABSTRACT

New media art refers to works of art that have been developed or created through the combination of art and technology. New media art encompasses any contemporary art forms created, edited, or transmitted using new media technology. It includes digital, interactive, online, virtual, video, sound, and artworks made using robotics, video games, biotechnology, 3D printing, and computer animation. As a result, many studies have been conducted on the use of arts to promote a balanced way of life and the value of art in the healthcare setting, however, a lack of study on media arts as an art-based intervention in the healthcare environment. Therefore, the purpose of this research is to identify the existing elements and characteristics of the artworks in the healthcare environment and propose a prototype media art as a new art-based intervention to enhance a pleasant healthcare environment and potentially promote well-being and mental health among students in the institutional healthcare environment. This is qualitative research involving interviews with doctors and experts in fields and observation in Pusat Sejahtera Universiti Sains Malaysia, Pulau Pinang. The semi-structured interview and observation will be recorded through an audio-video recording system. As a result, this research will develop a prototype of media art that will be produced using a combination of art and technology. These include interactive art, sound art, visual, and computer art. This prototype will give students, visitors, and staff in healthcare a good impact and enjoyable experience in healthcare environments that may be undergoing stress while waiting for the treatments or after the treatment. This research's significance is beneficial to academia, the institution's healthcare environment in Malaysia, and students' well-being and mental health. As mentioned by the Director-General of Health, Datuk Dr Noor Hisham Abdullah, the future healthcare facility design goals are to create a healing environment, including art and hospitality.

**Keywords:** *New Media Art, Art-Based Interventions, Healthcare Environment*

## INTRODUCTION

Art is well known for visually expressing thoughts and feelings that are difficult to describe in words. It is a potential method for assisting people in exploring their emotions and beliefs, reducing stress, resolving challenges and conflicts, and improving their overall well-being. Art can heal people emotionally and physically, which has led to the creation of healing arts (Malchiodi, 2004). Similarly, Armstrong (2021), posited that art holds healing potential. Art serves as one of the innate healing powers accessible to all, fostering interpersonal connections among individuals. Furthermore, the use of arts activities has been identified as holistic, non-medical, and cost-effective interventions that have the potential to promote public mental health and well-being (Jensen & Bonde, 2018).

According to Davies et al., (2012), there are five types of arts engagement: (1) performing arts; (2) visual arts, design and craft; (3) community/cultural festivals, fairs, and events; (4) literature; and (5) online, digital and electronic arts. Carswell et al., (2019), an art-based intervention involves using arts activities to provide a creative experience in a healthcare setting. Arts have been demonstrated to have a range of impacts in hospital settings in previous research (Staricoff Duncan, et al., 1991), including decreases in physiological stress indicators such as blood pressure and reduced anxiety and melancholy. Many arts programs promote people's well-being by enhancing their quality of life and enjoyment. Patients and staff value the function of the arts in improving well-being, reducing stress, and diverting attention away from worries, and these components are seen as essential (Staricoff, 2004). According to the World Health Organisation (WHO) in Europe, "Engaging with the arts can benefit both mental and physical health" (Fancourt & Finn, 2019).

Based on that, this research is important in the Malaysian healthcare environment because there are still insufficient studies in the existing literature on using media arts as an art-based intervention in the healthcare environment. Media art encompasses a broad spectrum of artistic expressions that utilise various forms of media, including digital art, video installations, interactive exhibits, and sound installations. According to Çaskurlu, (2013), new media arts study human interaction via the mediums of films, photography, video, music, computers, digital arts, and interactive media. Space, time, light, motion, colour, and sound express their perspectives, feelings, and ideas. Meanwhile, Salah Uddin (2018), new media art often involves interaction between the artist and the observer or the observer and the artwork.

In healthcare settings, media art can be integrated into physical spaces, such as waiting areas, patient rooms, and treatment areas, to create immersive and engaging experiences. From the study by Chen et al., (2009), the visual melody is an interactive installation that encourages individuals to engage with and play with relaxing visuals and sounds, giving people a more relaxing experience. It is designed to assist parents and caregivers in distracting and entertaining young children and provide a more pleasant experience for adults who use it. The therapeutic use of new media art in healthcare, according to this research, is still in its early stages. Similar to a study by Biddiss et al., (2013), an interactive media display for a paediatric hospital clinic creates a unique waiting room that responds to the increasing need for accessible, contact-free play alternatives. In addition, waiting in hospital settings may be stressful for children and their accompanying family members. Positive diversion opportunities have decreased waiting anxiety, resulting in better health outcomes. Other studies, a qualitative study explored the use of Virtual Reality (VR) in art therapy, it is applicability of VR expressive arts making tools in the creative arts therapist. The findings show that VR-based self-expression is a visual expression that is felt, creates new artistic and imaginative reactions, and needs a learning path for expression and mastery. The use of VR in art therapy was identified as positive emotions, play and exploration, learning and mastery, access and storage. VR also has a potential to enhance psychological mental health and well-being by encouraging creation, thinking, interaction, and problem-solving (Kaimal et al., 2020).

Therefore, this paper will focus on the students at Universiti Sains Malaysia, Pulau Pinang, aged 18-24. This study needs to be focused on the university students' well-being and mental health. According to Intan Nurhaila et al., (2011); and Sohana Abdul Hamid, (2019), they are met with a new challenge in university life: making independent decisions about their lives and studies, adapting to academic demands, and engaging with a broad group of new people. Meanwhile, research by Muhammad Wafi Ramli & Sharifah Rohayah Sheikh Dawood, (2020) has suggested that the university should implement a holistic stress management and prevention program or intervention to reduce student stress problems. According to WHO, (2017), mental health disorders are expected to increase, which is depression will be the world's second-leading cause of disability by 2020 and will be the world's largest cause of disability by 2030. Consequently, this study address two research questions: Firstly, what are the types of existing artwork that Pusat Sejahtera has used? Secondly, what are the types of prototype media arts-based interventions in Pusat Sejahtera?

## **LITERATURE REVIEW**

### **Art-Based Intervention**

Art for health and well-being may be seen as a preventative measure, and the fundamentals of wellness are identifying and supporting individual resources. It can be seen in the previous study that using art as an intervention affects well-being and mental health.

Arts-based approaches help youth recognise and express their emotions. According to Coholic et al. (2020), arts-based activities are enjoyable, calming, entertaining, and beneficial to the youth. Arts-based activities can "get things out" in ways verbal communication does not. Using creative techniques with youth to improve communication and engage youth, particularly in group work, has long been recognised among the helping professions. According to youth feedback, arts-based activities may enhance self-esteem and resilience in teenagers, and even short-term treatments can promote stability.

In the study by Mak & Fancourt (2019), the researchers investigated the connection between arts engagement, such as listening to or playing music, sketching, painting, or creating things, and reading for pleasure, and children's self-esteem at the age of 11. Surprisingly, the study found that the relationship between children's participation in painting, sketching or creating things and their self-esteem did not differ significantly depending on parental involvement in these activities. One potential reason for this is that activities involving the creation of new arts, whether or not they are done with parents, may help individuals feel distinctive and therefore nurture their self-esteem.

### **Art and Healthcare Environment**

Ulrich et al. (2003) compared the impact of natural circumstances with other conditions on individuals enduring a stressful operation (blood donation) in a US hospital, using physiological indicators such as blood pressure and pulse rate, as well as psychological self-report measures. According to the research, stress levels were shown to be greater during times of exposure to urban surroundings, including television. On the other hand, nature visuals and sounds were linked to decreased stress levels.

Meanwhile, National Arts & Health Framework (2013); Staricoff (2004) have described this area as any actions aimed at improving individual and community health, health promotion, and healthcare via the supply of artworks or performances, or attempt to improve the healthcare environment by the provision of artworks or performances.

## **Media Arts**

Chen et al. (2020) pointed out that interactive art is a participatory art form based on computer technology, sensor technology, and human-computer interaction technology that would likely utilise AI as the primary medium and efficient instruments for production. Additionally, Chen et al. (2020) stated that interactive design needs a design motive that connects with the user's psyche and encourages the user to behave impulsively. Additionally, interactive design requires a layered interactive language that elicits users' primal urge to use, thus increasing users' desire to explore and engage.

Research from Hacmun et al. (2021) has shown that Virtual Reality (VR), in recent advances, technology-enabled the creation of immersive digital environments. This research included seven experienced art therapists who experimented with generating visual art in VR and participating as observers. This research is a qualitative study that involves a semi-structured interview and is analysed using Thematic Analysis. The results led to the following four major themes: 1) The user experience of creation in VR. 2) The qualities of the VR material and medium. 3) The VR environment as a therapeutic setting. 4) The relevance of the VR medium for art therapy.

## **RESEARCH METHODOLOGY**

### **Research Design**

This study used a qualitative approach involving data collection through both primary and secondary methods.

### **Participants**

Participants included from a range of professional backgrounds including doctors, experts in fields: media arts, new media artists, sound arts and industry experts.

Eligibility criteria doctor:

- Director of Pusat Sejahtera and the medical staff
- Have worked in Pusat Sejahtera for more than five years.
- Community members in Corporate Image Communities for Pusat Sejahtera
- Person in charge in selection of artwork

Eligibility criteria experts in fields:

- Experience more than ten years
- Have knowledge, skill and experience in a specific subject via practice and study.

This study has obtained approval from the Jawatankuasa Etika Penyelidikan Manusia USM (JEPeM) (USM/JEPeM/22060391). Participants in the study are required to sign a consent form for interviews, including recording for data collection purposes. The group consists of three doctors from Pusat Sejahtera, USM, and four experts, namely in media arts, new media artists, sound arts, and industry experts.

## Data Analysis

The director of Pusat Sejahtera and the medical staff participated in semi-structured interviews. The interviews aimed to gather as much data as possible parallel with the first objective. Meanwhile, the observation will be carried out to capture and record visuals in the areas where the existing arts are placed. For the second objective, the purpose of the semi-structured interview is to involve the experts in forming the prototype based on the theory of evolutionary congruence, which is useful in understanding what kinds of art are beneficial in improving results. Experts should be involved at this stage because their knowledge will help strengthen the development of prototype media arts that include visual, interactive, and natural sound features suitable to Malaysian contexts. The interviews were transcribed verbatim and analysed using thematic analysis by (Braun & Clarke, 2006) using NVivo Version 12. According to Braun and Clarke (2006), thematic analysis is a technique for identifying, analysing, and reporting data patterns (themes), as well as organising and describing your data set in (rich) detail.

## Addressing Clinical Needed

Pusat Sejahtera (Kesihatan & Pergigian) Universiti Sains Malaysia was formerly known as Pusat Kesihatan USM, established in 1969. It is in the C15 building of the Main Campus to provide specialised medical and dental services to students (Figure 1). The study area's specific location is in the pharmacy waiting area (Figure 2). The rationale behind this choice is the results of previous studies have not yet been conducted in institutional healthcare, especially in Malaysia. As suggested by the Director-General of Health, Datuk Dr Noor Hisham Abdullah future healthcare facility design goals need to be considered. One of the goals is a healing environment, including art and hospitality. Moreover, the study by Muhammad Wafi & Sharifah Rohayah (2020) suggested that the University should have a development program or intervention to prevent the problem from the early stage by identifying the cause of stress among the students. Hence, there is a possibility of obtaining all necessary and relevant data from Pusat Sejahtera (USM).



**Figure 1. Location of Pusat Sejahtera, Universiti Sains Malaysia**  
(Source: Author's personal collection, 2023)



**Figure 2. Waiting area pharmacy, Pusat Sejahtera, Universiti Sains Malaysia**  
(Source: Author's personal collection, 2023)

## FINDINGS

### Phase 1

For phase 1 the semi-structured interview was conducted with the Director of Pusat Sejahtera and the medical staff. They will be asked questions about their knowledge of the use of art in the healthcare environment, perceptions and reflections on the existing elements and characteristics of art intervention used at Pusat Sejahtera Universiti Sains Malaysia.

The results of the study from interviews with doctors indicate the main themes and sub-themes, which are presented in Table 1.

**Table 1. Themes and subthemes from interviews with doctors**

Theme	Subthemes
	Existing artwork in Pusat Sejahtera
Impact on existing artworks in Pusat Sejahtera	Positive perceptions of the existing artwork
	Lack of appropriate guidelines for art selection and placement
More research on arts-based intervention	Up to date arts-based intervention
	More empirical findings on arts-based intervention

### Theme 1- Impact on existing artworks in Pusat Sejahtera

These themes are highlighted from interviews with doctors about their opinions and thoughts on the existing artwork in Pusat Sejahtera. Two sub themes highlight the characteristics of existing artwork that has been used until now in Pusat Sejahtera. The second sub theme describes positive perceptions of the existing artwork as an art-based intervention.

### Existing artwork in Pusat Sejahtera

The healthcare staff have limited experience and knowledge of the use of the arts in the healthcare environment. The lack of exposure to the role of art in healthcare will impact well-being and mental

health. The existing artwork in Pusat Sejahtera is considered too old, and the images are not appropriate for use. This is further supported by the outcomes of the interview carried out with the doctors at Pusat Sejahtera:

*"...we only display works, but not artworks, more towards images... or more towards health education...." [DR 1]*

*I don't know whether you consider it art or not. We have something near the path, but it's simple artwork. it's recycled stuff. It's sustainable, but it's old. A few years ago, staff at Pusat Sejahtera made stuff—disposable items. [DR2]*

*In Pusat Sejahtera, I saw that there are mostly pictures on the wall, like those with abstract paintings, as well as pictures from photography, and then there are also drawings from the USM kindergarten collection. [DR3]*

### **Positive perceptions of the existing artwork**

Based on the interviews, the doctor has an opinion that the placement of existing artworks in Pusat Sejahtera is part of the arts-based intervention. This is because they thought that the artwork could have a positive impact on the healing and therapeutic processes.

*As we know, no matter where we work, there must be stress. Even if we are close to the clinic, we have stress too. Even if a patient has already experienced stress due to pain, Pusat Sejahtera's artworks aim to alleviate some of this stress for both patients and staff. [D1]*

*To me, yes. To some extent, this existing artwork helps in terms of well-being and mental health [D2]*

*I would say both. As I mentioned earlier, artwork at Pusat Sejahtera serves two distinct roles: one is decorative or aesthetic, while the other is informative or educational. This could mean two things. It can be just a decoration, but it also functions for information. Additionally, when used as a decoration, it can indirectly have a therapeutic effect.[DR3]*

### **Theme 2- More research on arts-based intervention**

These themes highlight the need for and importance of doing more research on arts-based interventions in healthcare, especially in Malaysia. Three sub themes highlight the lack of appropriate guidelines for art selection and placement. The second subtheme necessitated the development of a new arts-based intervention that integrated both art and technology. Therefore, with the development of arts-based intervention, it became important to distinguish arts-based intervention from art therapy. This intervention is not considered 'art therapy' due to the absence of a formal psychotherapy framework and trained art therapists. It is important to do more research related to these.

#### **Lack of appropriate guidelines for art selection and placement**

The use of art intervention in Pusat Sejahtera is still not widespread and also lacks exposure in terms of specific visual elements in the healthcare environment, which include: the use of appropriate arts,

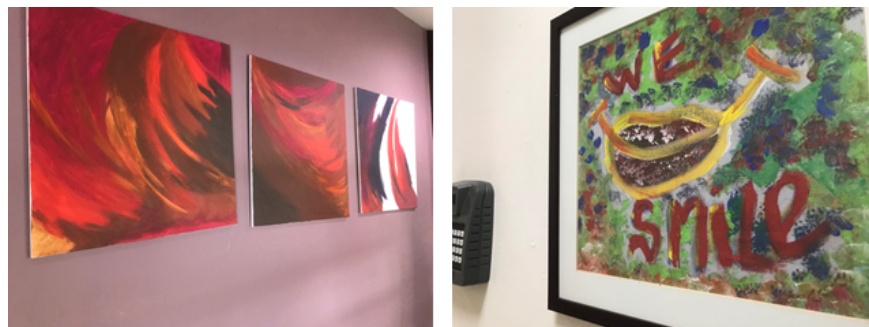
images, colours, artworks, paintings, or murals on walls because the result from the interview that was conducted there are no specific guidelines, they can follow for art selection and art placement.

*We really don't have specific guidelines; for example, how big is this? How small is it? or "Difference types. All this time, we didn't think about the need for guidelines.[DR1]*

*"I don't think there are any guidelines for selecting these works... but I think any decision must be made in a meeting..." [DR 2]*

*To be honest, we don't have very specific guidelines for choosing works of art to exhibit at Pusat Sejahtera. [DR3]*

Most of the paintings in Pusat Sejahtera, Universiti Sains Malaysia, Pulau Pinang are borrowed from Muzium & Galleri Tunku Fauziah and also collections of artworks by kindergartens at Universiti Sains Malaysia, Pulau Pinang (Figure 3).



**Figure 3. Collection Artwork in Pusat Sejahtera, Universiti Sains Malaysia**  
(Source: Author's personal collection, 2023)

### Up-to-date arts-based intervention

Integrated arts and technology are becoming increasingly popular in the digital world. Nowadays, people tend to explore technology more than ever before. Integrating art and technology into the new prototype enhanced the patient experience, enjoyable experience, improved the pleasantness of the healthcare environment, and increased the productivity and well-being of healthcare staff.

*With the presence of new artworks other than the current ones, such as visual nature combined with the sounds of birds, you can feel that this innovation has already had a great impact on our patients.[DR1]*

*Most of the artwork in Pusat Sejahtera has been around for quite some time, so at one point maybe our brains were a bit used to it, so it might need some new stimulation. [DR2]*

*Our brains are always attracted to something new. stimulation with media intervention, for example... with artworks that are interactive by combining hearing with visuals, of course it will be more appealing towards staff, towards patients, and towards visitors... it may even be more helpful in the well-being process with sounds and visuals that are soothing. [DR3]*



## More empirical findings on arts-based intervention

Based on the interviews, there is a gap of knowledge and literature review on the topic of arts-based intervention in the healthcare environment. This is further supported by the outcomes of the interview carried out with the doctors at Pusat Sejahtera:

*There has never been a single study or anything that we have done regarding this matter. I think it's something that we haven't been part of. [DR1]*

*I think we should be doing it, really, because we don't know whether the work we are doing is an intervention or just because we think of it as a platform to fill the walls or empty spaces in the health facility. [DR1]*

## DESIGNING PROTOTYPE

### Forming Prototype

The prototype of media arts will be created or produced using a combination of art and technology. These include interactive art, sound art, visual, and computer art. In forming the prototype researcher found that in the theory of evolutionary congruence by Ulrich and Gilpin (2003), is valuable for comprehending which forms of art are advantageous for enhancing outcomes. According to this theory, the act of viewing nature-inspired artwork can induce a state of calmness, reduce stress, and contribute to positive well-being. Based on this theory, the presence of certain features and properties can facilitate the restoration of diverse groups of people. These include calm or slowly flowing water, lush greenery, blooming flowers, open spaces in the foreground, park-like or savannah-like characteristics (such as scattered trees and grassy understory), and the presence of non-threatening wildlife such as birds.

According to Lane, (2005), have stated that “*When the brain perceives a picture of a peaceful landscape or participates in creative activities, it causes parasympathetic arousal. The heart rate decelerates, blood pressure decreases, respiration rate lowers, blood flow redirects towards the intestines, and the body shifts into a state of deep relaxation*”.

In previous research, Mohammad Kamal et al. (2018) focused on sound art as an intervention for art therapy for Alzheimer's patients. In this research, the prototype of sound art has been explored by listening to sound art in a natural setting. Sound nature will be created to provide more soothing, stress-relieving, and relaxing effects. Based on previous research, natural sound is an interdisciplinary art form with much potential for use in public areas, particularly in healthcare settings.

According to the article written by Zeldenrust, (2022), exposure to natural sounds can induce a tranquil and restorative impact on the mind and body. The tranquil sounds of a flowing brook, the gradual swaying of foliage in the breeze, or the melodious trills of avian creatures can elicit a feeling of serenity and a profound bond with the environment. Previous studies have demonstrated that being exposed to natural sounds may successfully reduce stress, decrease blood pressure, and enhance both mood and cognitive function.

## FINDINGS

### Phase 2

For phase 2 the semi-structured interview was conducted with experts in the field to enhance the design and engage them in the development of the prototype. The interview's findings indicate that the use of visual nature and natural sound produces a calming, stress-reducing, and tranquilising effect.

The results of the study from interviews with experts indicate the main themes and sub-themes, which are presented in Table 2.

**Table 2. Themes and subthemes from interviews with experts**

Theme	Subthemes
	Appropriate visual nature in the healthcare environment
Incorporating visual nature and nature sound in the healthcare environment	Appropriate natural sound in the healthcare environment
	Art and technology integration
Innovative integration of art and technology	Novelty and innovation

### Theme 1- Incorporating visual nature and nature sound in the healthcare environment

These themes are highlighted from interviews with experts about their opinions, thoughts and knowledge based on their expertise and experience on new media arts. Two sub themes highlight the use of visual nature as a key element in the prototype. The second subthemes the use of natural sounds in the healthcare environment.

#### Appropriate visual nature in the healthcare environment

By integrating nature as the key element with local elements, there is the potential to create an immersive natural experience, providing appropriate content for patients, visitors, and healthcare staff in promoting calmness, reducing stress and promoting good health.

*At least with the presence of local elements such as the lake and the beach with a clean and wide view, as well as the sound of birds and water, you can feel the peace there. [E3]*

*In my opinion, when we discuss a subject, we often gravitate towards nature because it contrasts with man-made structures. So, we can talk about nature because it does give peace regardless of age. [E2]*

*the approach of art and technology is something new and I think it can be successful if we create the best scene of nature that is suitable for the Malaysian environment. [E1]*

*What I saw was the most visual in Japan and Malaysia, with elements such as the blue sea, plants, music, sound, landscape, scenery, forest, and sky. I believe it is a pre-visualization of the universe because we cannot photograph it. They are animals, landscapes, characters, animations, motion graphics, combinations, flowers, and abstracts. [E4]*

## **Appropriate natural sound in the healthcare environment**

Exploring elements for appropriate sound, including the integration of natural sounds in healthcare, emphasises the significance of rhythm and tempo in enhancing the auditory environment.

*For sound, ambient, and natural sound from the animals, you can use both or combine them. [E4]*

*Of course, if we want to have a very typical sound from nature, I think it's good because we're at this hospital and we know the sound all kinds of machinery from the hospital. Generally, the sound of nature has the potential to counterbalance these external noises. [E2]*

*For sound, I think is better to use natural sound... it's more calming inside. For example, use the sound of birds, and so on and so on. And then the sea, there is the sound of waves. And then the waterfall, the sound of the waterfall. [E1]*

*Tranquillity, if you want something calm, then the rhythm has to be the same as BP. Rhythm, meaning beat or tempo, is the same as the heart. So, it's a normal beat, and then there aren't many pitch notes that run high and low. [E3]*

## **Theme 2- Innovative integration of art and technology**

These themes have highlighted the benefits of integrating art and technology in healthcare and the ability to enhance patient experience, comfort, and enjoyment. Two sub themes highlight the combination of art and technology in making arts. The second subthemes the novelty and innovation of new media arts in healthcare.

### **Art and technology**

The potential integration of art and technology encourages engagement with the digital world.

*In my opinion, new media holds greater potential. Even now, I think even in healthcare, many people have put up TV screens, replacing those old posters. Screening is more high-end healthcare. So, for me, it's an opportunity to enter more new media. [E2]*

*My opinion is the combination of art and technology nowadays it's encouraging because we are moving towards to digital world. [E1]*

### **Novelty and innovation**

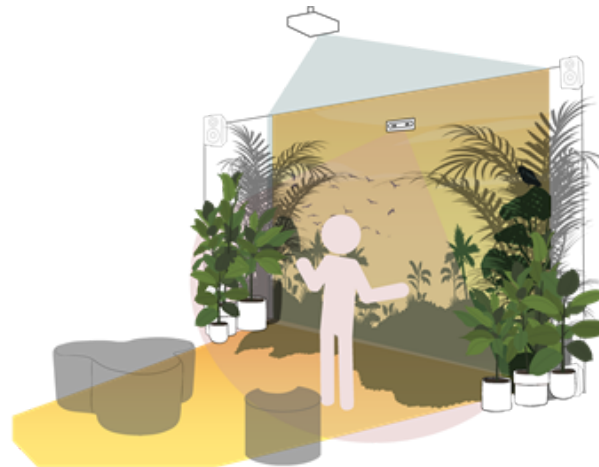
By combining art and technology, creating a new novelty prototype as an arts-based intervention in healthcare environments may create immersive and engaging spaces that encourage healing, decrease stress, and enhance general well-being.

*Usually, we only see paintings or conventional art depicting beautiful scenery, which instils a sense of calm in patients or even healthcare staff. Therefore, I believe it's a good idea to propose the creation of a prototype that combines art and technology, as no healthcare, hospital, or care centre in Malaysia currently features such technology-integrated artwork. [E3]*

*So, for me, it is a good suggestion and idea to do this prototype. I haven't seen any healthcare that used media art, interactive art, or immersive art in healthcare before. [E1]*

## TECHNOLOGIES

The development of the prototype involved several elements of software and hardware. The software involved in interaction and gesture user movement was created using Microsoft Xbox Kinect 2.0 depth sensor technology for motion recognition. The animated and graphic 3D visual experience was created using the Unity 3D game engine, and the programming language used was C# to develop interactivity coding for the interaction element in the prototype. The installation hardware includes a projector with installation on the ceiling, an MSI laptop, Kinect 2.0, two pairs of speakers, and an amplifier for immersive experiences (Figure 4).



**Figure 4. Prototype Setting**  
(Source: Author's personal collection, 2023)

## DISCUSSION

### **Objective 1: To identify the existing elements and characteristics of the artworks in the healthcare environment**

The first objective of the study, aimed to identify the existing elements and characteristics of the artworks in the healthcare environment. Through the analysis of semi-structured interviews, several key themes emerged that can provide clear pictures of the need for new arts-based intervention and more empirical findings on arts-based intervention in the healthcare environment. In this study, findings revealed that the integration of arts in healthcare is a lack of exposure, experience, and knowledge of the use of the arts in the healthcare environment. The existing artworks are older pieces, and there are no appropriate guidelines for art selection and placement in healthcare. As can be observed, there has been a lack of updates to introduce newer artwork that could enhance the patient experience, create a more

pleasant environment, and boost the productivity of healthcare staff in healthcare facilities. Previous study has shown that the main priority of integrating art into the healthcare environment is enhancement of patients' well-being through the art selection and placement of artwork that enhances and contributes to a pleasant environment (Nurhaya & Ain Farhana, 2020).

### **Objective 2: To propose a prototype media art as a new art-based intervention to enhance a pleasant healthcare environment**

The second objective of the study is to propose a prototype media art as a new art-based intervention to enhance the pleasant healthcare environment and potentially promote well-being and mental health among students in institutional healthcare settings. Through an analysis of experts' knowledge and experience with new media arts, themes such as "*innovative integration of art and technology*" and "*incorporating visual nature and natural sounds in the healthcare environment*" emerged. The findings indicate that the use of appropriate visual nature and natural sound had a calming impact, reducing stress and soothing patients, visitors, and healthcare staff, thus enhancing psychological well-being. Previous research has shown that viewing nature artworks increased stimulation and decreased sleepiness after stress compared to viewing jumbled pictures (Law et al., 2020). Experts view the integration of art and technology in the healthcare environment as a promising strategy to adapt to the digital era, reducing discomfort during the waiting period for treatment and offering positive distractions. The development of prototype media arts that include visual, interactive, and natural sound features suitable to Malaysian contexts.

The findings from both objective of the study highlight the importance of integrated art and technology, incorporation of visual nature and natural sound, and the appropriateness of art selection and placement is a promoting holistic approach that combine art, technology and natural elements to enhancing pleasant environment and promoting positive well-being and mental among patients, visitors and healthcare staff.

## **CONCLUSION**

In conclusion, the prototype is an interactive work thoughtfully illustrated to immerse users in an animated mountain meadow scene and sky. In the space, users can play and interact with butterflies by using hand and body motion gestures to control the butterflies' motion. For the user, perhaps sitting quietly and enjoying the natural sounds and visuals. Engagement with the prototype user expresses interest in and engagement with interactive prototypes, indicating a potential for interactive technologies to enhance waiting experiences. The future recommendation is to foster collaborations between artists, healthcare professionals, and researchers to create interdisciplinary teams that can develop and implement media art interventions. This collaboration will ensure that interventions are both scientifically grounded and artistically meaningful.

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