

# CLAUSTROPHOBIA VISUAL STUDIES AMONG UNIVERSITI SAINS MALAYSIA (USM) STUDENTS: MEDIA MAPPING ART ASSISTS IN THE ACCEPTANCE OF SMALL SPACES

Mohd Asyiek Mat Desa<sup>1</sup>  
Norfarizah Bakhir<sup>2</sup>  
Ariff 'Aizat bin Abd Aziz<sup>3</sup>

<sup>1,2,3</sup>*School of The Art, Universiti Sains Malaysia (USM), Penang, Malaysia.*  
asyiek@usm.my

*Date received: 15 April 2022 / Date accepted: 10 June 2022 / Date published: 30 June 2022*  
<https://doi.org/10.51200/ga.vi.3826>

---

## ABSTRACT

A study on visuals that can provide comfort to students of Universiti Sains Malaysia (USM) suffering from claustrophobia. According to previous studies, the visuals on display have helped claustrophobes in coping with their phobias. For example, Rizki Arif Darmawan and also Dody Pernady have made a study on claustrophobia patients using visuals from Virtual Reality (VR). The researcher uses VR to address this problem. The study needs to use virtual reality video game applications. The results of this project show that by using visuals, able to give claustrophobia patients to go through the narrow conditions that they must go through every day.

**Keywords:** Claustrophobia, visual mapping, media and technology.

## INTRODUCTION

A *phobia* is defined as excessive anxiety or fear that causes individuals to feel uneasy. A phobia is an illogical and absurd fear reaction. When confronted with the source of the fear, individuals may feel a profound sensation of dread or panic. Fear can be directed at a specific location, circumstance, or item. Individuals might suffer from various problems, including anxiety disorder, panic disorder, social anxiety, and general restlessness.

Numerous phobias exist, including spider phobia (arachnophobia), open space phobia (agoraphobia), altitude phobia (acrophobia), and confined space phobia (claustrophobia). This study focuses exclusively on phobias associated with enclosed spaces, i.e., Claustrophobia.

Claustrophobia is derived from *claustrum*, which means secure place, and *phobo*, which means dread. *Claustrophobia* is a linguistic term that refers to an unreasonable dread of a tight or constricted environment. Claustrophobia will avoid tiny areas or circumstances that may cause panic. A tiny space can take on a variety of meanings depending on the degree of fear. Those who suffer from this fear will avoid entering an aircraft, train, or elevator. Additionally, those who have claustrophobia may race to locate an escape once they enter a crowded room, fearing the door will close when they are in a specific location and remain near the exit when in a crowded environment. Claustrophobia can be triggered by a variety of events, including being crammed into an elevator, being in a room without tiny windows, boarding an aircraft or small automobile, undergoing an MRI or CT scan, being in a huge or crowded room and passing through a tunnel, or using a public restroom.

Visual media is an excellent endeavour to assist students in overcoming this obstacle. They are fearful of being confined due to their environment being completely flat. Thus, visual lightmapping is an essential medium since it may serve as a visual representation of our thoughts. Rizki Arif Darmawan and Dody Pernady (2018), have previously researched patients who have claustrophobia utilizing VR images. However, it may have adverse effects on users, such as myopia, dizziness, etc. In addition, prolonged exposure to VE and VR might result in cybersickness (Joseph & LaViola, 2000).

Thus, it is evident that the usage of VR might be detrimental to people if they become too absorbed in it. Not only that, but they may be physically hazardous as well, as the gadget covers their eyes and they are unaware of their surroundings.

This project was designed to assist those who have claustrophobia, particularly USM students, by offering comfort when they are in a confined space through modern media. Additionally, the research developed a new media system based on light mapping and a little music to assist them in navigating those difficult periods. Additionally, the development of this research may provide an opportunity for this group to experience the sensation of being in the space, despite the space's narrowness and confinement.

People were living with claustrophobia struggle to cope with a complex scenario, by adding another layer of complexity when they have to traverse the space to reach their next destination. They will remain fearful and restless, and this situation will deteriorate if not addressed immediately. Since sufferers fear enclosed environments such as elevators and public transit, claustrophobia

affects between 2 per cent and 5 per cent of the population. Thus, claustrophobia might be classified as a distressing mental condition (Wittchen, H.U. et al., 2011). These previous findings led researchers to explore the use of visual media to assist patients or persons who have claustrophobia in living more confidently, comfortably, and calmly.

## **STATEMENT OF THE ISSUE**

Numerous flaws in the media have been identified to address the issue of claustrophobia. VR is one of the most advanced technologies ever created. However, significant concerns arise regarding the fundamental objective of treating the ill and preventing disease progression due to the media created. Referring to prior research conducted by Rizki Arif Darmawan and Dody Pernady (2018) on individuals who have claustrophobia utilizing VR images. VR However, it can have adverse effects on users, including myopia, dizziness, etc. In addition, prolonged exposure to VE and VR might result in cybersickness (Joseph & LaViola, 2000).

## **NEW MEDIA DESIGN AND TECHNOLOGY**

Claustrophobia is a kind of anxiety disorder marked by an irrational dread of enclosed areas. While medication can successfully reduce symptoms, the effects quickly dissipate once the medication is discontinued. Numerous studies demonstrate that combining psychotherapy and medicine is more successful than medication alone. However, conventional psychotherapy has the drawbacks of being time-consuming and costly (Tsai Chai-Fen et al., 2018). The phrase “New Media” refers to various forms of electronic communication that have emerged as a result of advancements in computer technology. In comparison to “traditional” media such as periodicals, newspapers, books, and other non-interactive forms of media. Online social platforms, online communities, blogs, forums, and web pages are examples of new media. Additionally, new media is characterized as “borderless information technology.” It is designed to explain the late twentieth-century rise of digital, computer, or network information and communication technologies.

In today’s world, new media is beneficial. However, it is critical if we can incorporate it into our daily life. As with this study, the researchers aided this group of people living with claustrophobia by utilizing images from light mapping. Among the benefits of this visual medium are the following:

- It is one of today's psychiatric therapies.
- Technology that enables society to explore itself in situations or scenes that are physically impossible.
- A solution for those who like to infuse the land with a futuristic flavour.

Based on the past study, the researcher addressed this issue through the use of VR. Therefore, the study's methodology must include the utilization of virtual reality video game apps. This claustrophobia patient is subjected to a video game, and users will overcome their phobias by being confined to a minimal sight. The user must progress through two phases before reaching the successful column. The experiment enrolled three individuals with claustrophobia who were roughly 22 years old. Patients have never received phobia therapy via VR, and this is the first time they will get therapy via VR. The outcome of an experiment involving three individuals who suffer from claustrophobia. Based on the results of this study, it can be concluded that claustrophobic symptoms such as tremors, dizziness, and panic have been found and that claustrophobia may be reduced by utilizing virtual reality glasses that provide the user the illusion of being in the actual world.

This study aims to examine new media technologies in terms of 3D graphics created by light mapping to assist students at USM who suffer from claustrophobia. As demonstrated in earlier studies, the researcher concentrated on using VR to treat patients. He confines the patient in a small space to force the patient to combat the ailment. The researcher attempts to comfort claustrophobia patients in this scenario because the researcher does not have nursing competence. Along with pictures, music is critical to the continuity of visual video. Another advantage of music is that it helps people overcome or manage stress. According to research, those who listen to music recover from stress more quickly than those who do not. Music can reduce the body's cortisol or stress hormone production (Sienny Agustin, 2022).

## **METHODOLOGY**

The researcher will conduct a study throughout USM and compile a list of the locations that are constantly the focus of this claustrophobia patient. Questionnaires supplied using Google Form will be delivered via WhatsApp, Instagram, and other social media platforms often used by USM students. After getting the findings of the questionnaire, the researcher will continue conducting the study at the location suggested by the majority of USM students.

According to research conducted by Rizki Arif Darmawan and Dody Pernady, visual usage is quite efficient for this claustrophobia patient. Hypotheses were developed based on their study, "Studies on people living with claustrophobia Using Virtual Reality (VR) Visuals." This study was done statistically by interviewing and personally observing three people living with claustrophobia.

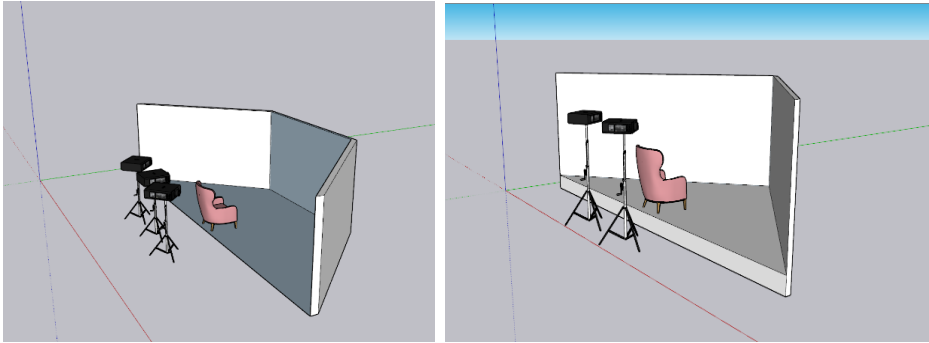
Apart from the survey approach, the researcher also employs the observation method. The researcher employed the observation technique in his or her study region, namely at USM, Penang. Additionally, this technique was implemented at the forthcoming RINTIS expo.

The researcher followed detailed protocols for collecting data. This guarantees that the data obtained is accurate and factual, that it meets the study's objectives, adheres to research ethics, and may be utilized for future research. Through a questionnaire, the researcher will pick a tiny area or building at USM and solicit comments from students who suffer from this anxiety. And then, the designated location or space will be visited.

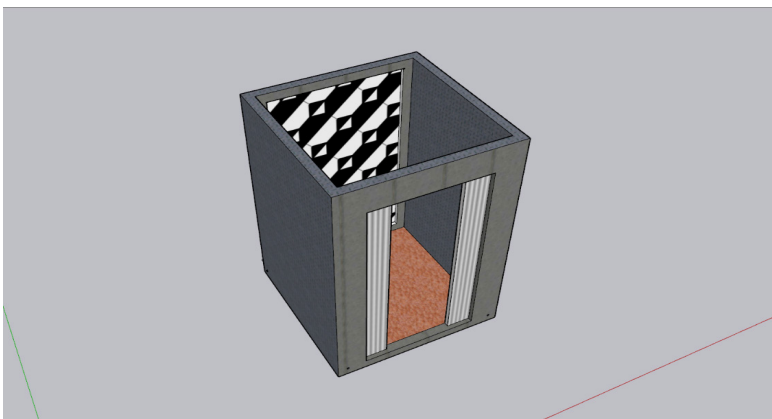
The results were gathered from respondents through a Google Form. Respondents will be asked a series of questions and asked to choose their most uncomfortable location if they have claustrophobia. The data collected can assist researchers in achieving the study's aims and be compared to results from past studies.

A quantitative study can determine which locations are perpetually problematic based on studies completed by most USM students. As a result, it is simple for the researcher to conduct studies and experiments at that location.

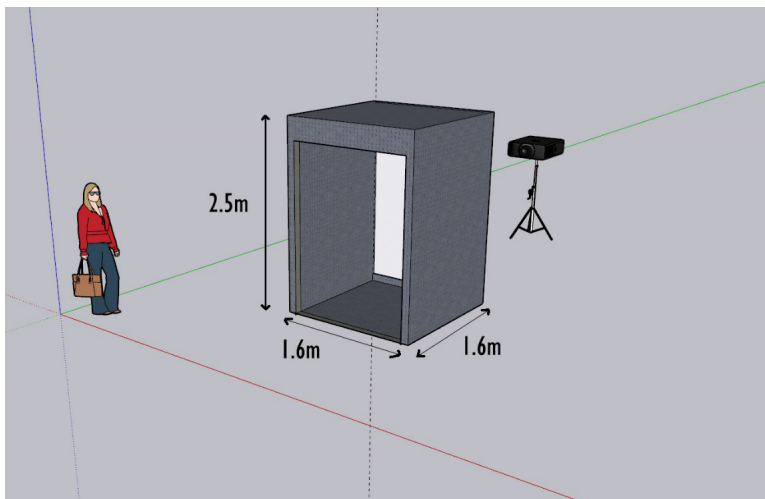
User testing of the ClaustroVisual elevator model (Fig 1 – Fig 4) was conducted face to face with eleven people. They need to be in the elevator for 2 minutes to feel their claustrophobia senses.



**Figure 1** The set up of visual mapping



**Figure 2** The set up for elevator in 3D

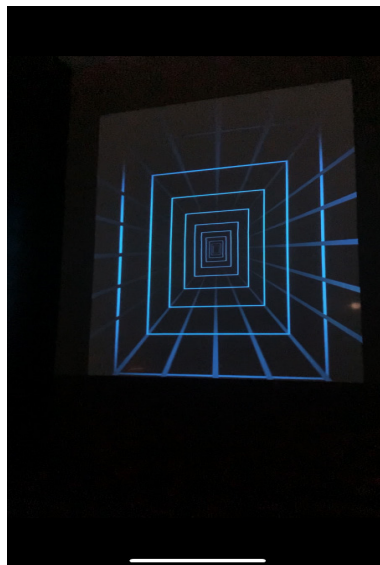


**Figure 3** The final set up along with the actual prototype of elevator measurements



**Figure 4** The visual mapping construction of the model

The concept of this ClaustroVisual elevator model project (Fig. 5) uses qualitative. Qualitative research was conducted through interviews with several respondents, including students from USM. It allows getting accurate and precise data. The production process of this model also has many obstacles, such as USM's movement control, which does not allow students to use the laboratory. However, that is justified given the state of COVID-19 at its current status. However, this model was successfully produced.



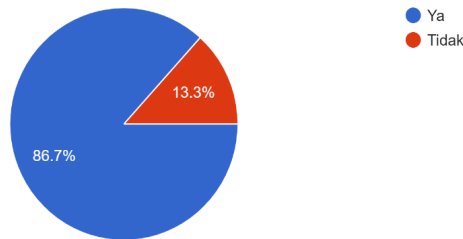
**Figure 5** Visual mapping from the projection

## DATA ANALYSIS

Statistics were conducted to evaluate the responses obtained from the respondents. Each answer from the respondents was taken into account to obtain information. This data is used as a reference for design development.

The chart (in Fig. 6) shows that 86.7 per cent of respondents felt uncomfortable, and 13.3 per cent chose comfortable.

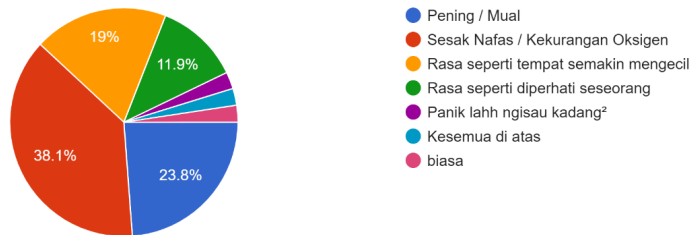
Adakah anda merasa tidak selesa apabila berada di ruang yang sempit ?  
45 responses



**Figure 6** The feeling of uncomfortable when in a cramped space?

In Figure 7, the chart shows that 38.1 per cent of respondents feel their condition is to be short of breath or lack of oxygen. Again, options become the highest percentage compared to other options.

Jika Ya, apakah perasaan anda apabila berada di ruangan sempit ?  
42 responses

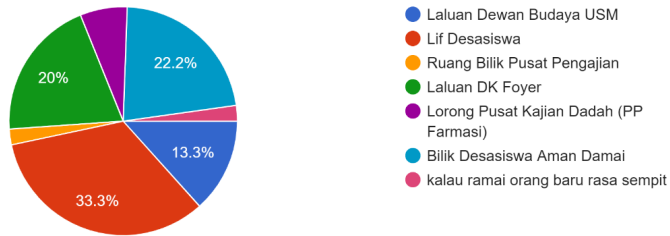


**Figure 7** Result shows how feeling in a narrow space?



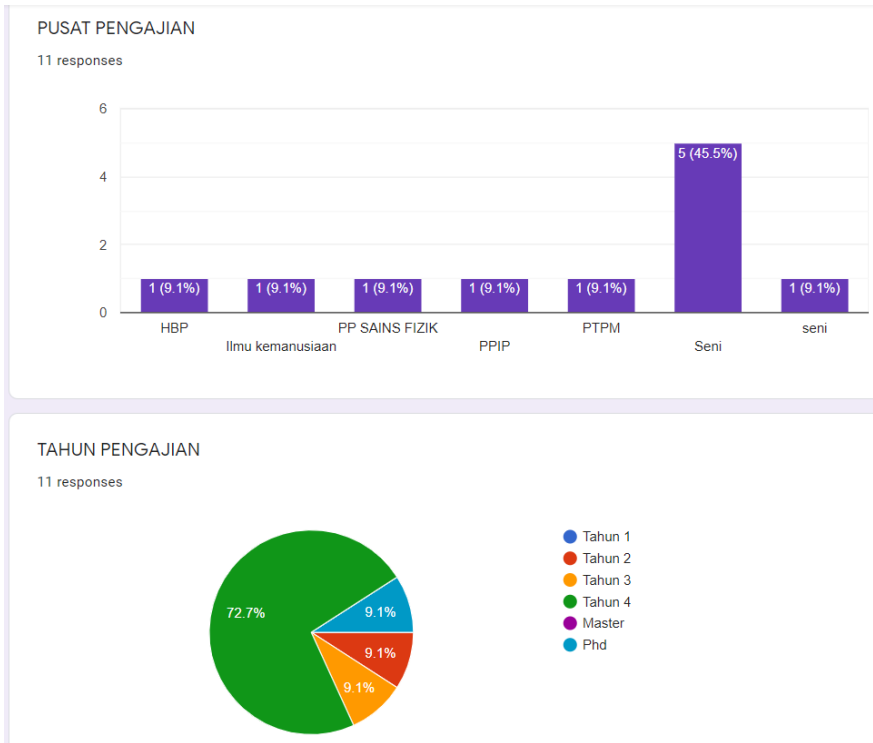
From the chart in Figure 8, 33.3 per cent chose the undergraduate elevator as the place that led to their fears. However, it shows the highest percentage compared to all the options given. The feedback was conducted during user testing. The Google Form questionnaire was distributed to 11 people who had emotionally narrow area problems. They have used the ClaustroVisual elevator model face-to-face.

Pilih kawasan mana yang sempit bagi anda. Jika ada kawasan lain, sila kemukakan.  
45 responses



**Figure 8** Result shows areas that are highly frightening to those with claustrophobia.

The question identifies and confirms that this group is a student of USM. The chart in Figure 9 shows 6 people are students of the School of Arts, one from Ph.D. students, one from the School of Education, one from the School of Physical Sciences, one from the School of Humanities, and one from School of Housing, Building and Planning. The average is year 4 of 7 people, one Ph.D., 2 people are year students, and one is year 3.



**Figure 9** Result shows the year and school of user of the ClaustroVisual model.

In, Figure 10, the chart shows the total percentage i.e., 100 per cent gave a “Yes” result. It shows how they feel restless when in a cramped space, thus leading to claustrophobia.

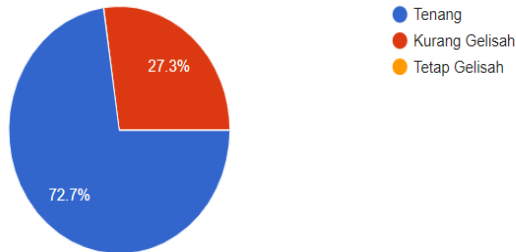


**Figure 10** Result shows the user’s feelings restless in cramped space

As in Figure 11, the chart above shows that 72.7 per cent of 8 people said they felt calm, and 27.3 per cent of 3 said their anxiety was slightly less.

Apa yang ada rasa setelah berada di dalam dan melihat visual yang dipamerkan di dalam model lif tersebut ?

11 responses



**Figure 11** Result shows the user's feelings after seeing the visuals on display.

In conclusion, most respondents have given positive feedback on this ClaustroVisual elevator model. Users speak several verbal suggestions. A little light should be placed in the elevator model so as not to frighten users, should be placed automatic or manual elevator doors to look attractive and realistic, and decoration in the actual elevator. The researcher accepted all suggestions so that the subsequent study would be better.

## CONCLUSION

People with Claustrophobia phobia need to be given significant emphasis, especially students. From the reflection, it can have a very negative impact on their learning process. Furthermore, they had to go through that narrow space every day to get to their room. So, to reassure and give comfort to them, the appropriate modification of the elevator concept needs to be implemented. As constructed by the researchers, it is clear that the users of the visual concepts displayed are beneficial to these Claustrophobes in overcoming their fears. Furthermore, this ClaustroVisual elevator model has convinced them to be and ride the elevator.

This project has some limitations or limitations. For the first, this project was done during the movement control order announced by the USM. Researchers have limited time to use the laboratory. Therefore, the researchers tried their best to make this ClaustroVisual elevator model project a success. It cannot be avoided or changed. Second, the "Rear Projection Curtain" is

not suitable for displaying ClaustroVisual visuals. For this suggestion, the researcher suggested using LED screens for more appropriate and clear visuals. For information, this project is indeed proposed to use screens. As a result of the lack of funds and strict controls, researchers need to think creatively. “Rear projection curtain” is used to replace the LED screen.

## REFERENCE

- Joseph & LaViola. (2000). A discussion of cybersickness in virtual environments. *SIGCHI Bulletin*, 32 (1), 47.
- Rizki Arif Darmawan & Dody Pernadi. (2018). Modeling virtual reality menggunakan blender dan unity untuk terapi claustrophobia. *Jurnal Ilmiah Informatika Komputer*, 23 (1).
- Sienny Agustin, Alodokter. (2022). *Memahami claustrophobia, fobia terhadap ruang sempit*. Retrieve from <https://www.alodokter.com/memahami-claustrophobia-fobia-terhadap-ruang-sempit>
- Tsai Chai-Fen, Yeh Shih-Ching, Huang Yanyan, Wu Zhengyu, Cui Jianjun & Zheng Lirong. (2018). The effect of augmented reality and virtual reality on inducing anxiety for exposure therapy: A comparison using heart rate variability. *Journal of Healthcare Engineering*. <https://doi.org/10.1155/2018/6357351>
- Wittchen, H.U., Jacobi, F., Rehm, J., Gustavsson, A., Allgulander, C., Alonso, J., Faravelli, C., ...& Steinhausen, H.C. (2010). The size and burden of mental disorder and other disorder of the brain in Europe. ECBN/RBC REPORT, 2011.