

Aquagenic Urticaria (Water Allergic): PSA

Myzan binti Noor
Creative Multimedia Animation
Malaysian Institute Information Technology
Universiti Kuala Lumpur
50250, Kuala Lumpur
myzan@unikl.edu.my

Arina Natasya Bt Ab Halim
Creative Multimedia Animation
Malaysian Institute Information Technology
Universiti Kuala Lumpur
50250, Kuala Lumpur
arina.halim@s.unikl.edu.my

Abstract – This paper is about Aquagenic Urticaria (water allergic) to be studied for a 2D Public service announcement (PSA) animated finished product. Aquagenic Urticaria is a symptom, disorder, diagnosis and treatment to a person with an allergic to water. A video using adobe after effect is being created for this project to educate the general public on the disease. Aquagenic Urticaria (AU) occurs in response to exposure to cutaneous water, including sweat and tears. This, would allow society to gain more awareness and to better understand about this rare disease by watching a 2D animated PSA video. The developer created various 2D cartoon characters, objects and text transition to attract target audience attention to understand the disease. The research method used was Addie model which analyze, design, develop, implement and evaluate the PSA with the target audience. The findings showed that the PSA is well documented. Most if the respondents strongly agreed that they understand with the information given by the researcher.

Keywords— *Aquagenic Urticaria, water allergic, Adobe After Effect, PSA video.*

I. INTRODUCTION

Aquagenic urticarial (AU), also known as water allergic, is a rare condition that progresses rapidly when the skin comes into contact with water in all forms, such as sweat and rain. The skin can respond with hives in more than 30 minutes. AU associated hives are usually tiny (about 13 mm), red or skin colored welts (called wheals) with clearly defined edges, as claimed by Center, 2016. Some patients experience headaches and itchy pain. These individuals who have just been diagnosed with this body reaction should shower for 5-10 minutes to prevent multiple effects. The rash occurs more often on the neck, upper truck and arm although it can happen anywhere in the body. If the water is removed, the rash typically disappears within 30 to 60 minutes [1].

The specific underlying cause of AU is unclear at present. These diseases are more common in women than in men or in people with no family history of AU, most cases tend to occur sporadically. Of the new cases reported in the literature, females

with on-set disease typically appear to have higher prevalence during puberty or post-puberty. Nevertheless, they have been documented on set disease in childhood. Although most cases appear to be intermitted, some cases of family illness have been recorded. However, family cases have been reported on several occasions, with one report describing the diseases in three generations of a single family. At this point, and both in histamine dependent and independent ways it appears to be mediated. It means a compound which is released by cells in response to injury and in allergic and inflammatory reactions, causing contraction of smooth muscle and dilation of capillaries. To rule out other physical hives, some patients may need to undergo further examination. Rarely one patient can have several physical hives, which may hinder diagnosis and care Rothbaum claims [2].

This paper aims to educate the general public to learn more about AU with a PSA 2D animated video which is attractive animated characters and colorful presentations with audio and video to attract audience with many back grounds of age, education and working life to learn and understand thus awareness on the disease.

II. PROBLEM STATEMENT

A. Animation

Many are not aware of this disease which for example how the hives (urticarial) effect the skin after have contact with water? What are the symptoms and the appropriate treatment to be given? This disease is not genetically runs in the family thus it is being undertaken lightly by many parents. Children who suffers the diseases were being thought as allergic to the contaminated waters they were in. Moreover, there is no public awareness about AU in Malaysia media related announcement of its awareness.

Hence, this paper hopes to explain and educate many general publics by creating the PSA 2D animated on how skin reactions with water, especially sweating can cause the skin reactions thus causing headaches and itchy pains. Center maintains that these individuals who have just been diagnosed with this body reaction should shower for 5-10 minutes to prevent multiple effects. The rash occurs more often on the neck, upper truck and

arm although it can happen anywhere in the body. If the water is removed, the rash typically disappears within 30 to 60 minutes [1].

III. RELATED WORK

A. Aquagenic Urticaria cases

It is not widely known about the nature of this disease since it is seldom detected. Such illnesses include the skin, which causes itchy and sore skin. Less than 100 cases of AU were reported in the medical literature. The prevalence of females, with the average onset age during off after puberty, is higher. Many cases occurred sporadically, but there were also several family cases found [3]. The first recorded case of AU was reported in 1963, when after water skiing, a 15-year-old girl burst out in sores. Subsequently it was described as a severe sensitivity to water, manifested within minutes by itchy hives breaking out on the exposed skin, according to Sturgess [4]. A recent analysis published in the Journal of Asthma and Allergy assessed approached to diagnose and treatment of AU, a difficult to treat, rare type of Urticaria caused by skin exposed to water, including sweat and tears.

B. The lack of pathogenesis

The lack of a consistent pathogenesis for AU had led to the difficulties in bringing forward evidence-based therapies for the patient affected. Jung Eun Seol claims, AU mechanism is not well known and researches have been unable to decide whether the disorder is or is not based on histamine release. Aquagenic clinical appearance includes “characteristic 1-3 mm folliculocentric wheal’s and accompanying 1-3 cm erythematous flares within 20-30 minutes of skin contact with water. “The analysis notes how the diagnosis is based on a history of Urticaria following water exposure and a successful water challenge test” [5].

C. Medicine

Antihistamines are medicines used to treat symptoms that resembles allergic. The doctor may recommend taking an antihistamine prescription to calm the hives and can’t breathe, they will need to use an EpiPen. EpiPen contains epinephrine, or adrenaline. They are only used as an option in emergency for serious allergic reactions. EpiPen increase bloods pressure to minimize swelling and hives. When they are limited they help the lungs function. A study conducted by University of Nebraska Medical Center (UNMC) researchers shows vitamin D as an alternative therapy may offer some relief for chronic hives (refer to the picture below Fig.1.), a cure free disorder with limited treatment options [7]. Chronic hives, an inflammatory skin disease. Causes red, itchy welts on the skin occasionally swelling they can occur every day, and last for more than six weeks, every year, says Cerino [6].



Fig.1. Aquagenic Urticaria (hives)

D. Public Social Announcement (PSA)

A PSA (Public Service Announcement) is a short informative clip designed to raise awareness of a significant topic among the public. PSA can include interviews, drama, animation, and many more other video and audio material, cited by Technology [8]. A few case studies have been done on this to get the best results of it:

E. Analysis table

	PSA - What would happen if you were allergic to water?	PSA - 10 Interesting facts about AU?	PSA - Can you drink water if you have AU?	PSA - I am allergic to water
Information about Aquagenic Urticaria	✓	✓	✓	✓
Symptoms about Aquagenic	✓	✓	✗	✓
Treatment for Aquagenic	✓	✓	✗	✗
Background sound	✓	✓	✗	✗
Sound effect	✓	✓	✗	✓
Narrator	✓	✓	✓	✓
Subtitle	✓	✓	✓	✓

Fig.2. The Analysis of the case studies

The figure above explains the analysis of the four PSA available case studies on the arrangement of the information of the subject, the symptoms about AU, the treatment, the background sound, audio effects, narrator and subtitle. The reasons behind this study is to really look into the user requirements needs factor and achievement of the solution as required.

In conclusion, this project is a PSA video is the best option to spread awareness on AU, it will be created to show an 2D animation that explains about the symptoms, diagnosis, and

treatment. It's also will explain the lifestyle changing after diagnosed with AU. The PSA video duration is This PSA video will feature graphic image, audio and video about the body reaction for 6 minutes all together. That is 2 minutes of its awareness, 2 minutes of the symptoms and effect and lastly 2 minutes of pre-caution and solution.

IV. RESEARCH METHODOLOGY

The ADDIE Model is best to be applied to this study as it is the usability factors to be concerned with the instructional design solution. There were five phases of the processes to go through in completing the project. Firstly, the developer needs to analyze, then design, then develop and implement and lastly evaluation.

These processes were carried –out to make sure the user needs are achieved. In the beginning, analyzing audience preferences which covers what do they need for the learning. This is where information goes from only being bits of data loosely connected to a finished product useful for decision-making.

Thus, design phase followed to deal with the execution of the instruction. The instructional designer handling design of the solution of the PSA needs to produce raw drawing, storyline scripts, audio and video arrangements, character design and objects of the interface design with color theme and mood coordination. Then, the development goes on to choose the suitable software and hardware in constructing the illustrations, focuses on designing evaluation for subject, selecting a course type, and developing their own instructional strategy. In the design process, the researcher conducted a literature review to determine the features that will be included in the project. Certain components 2-dimensions, animation, sound and color included.

Aside from this, a case analysis was also conducted by the investigator to determine a discrepancy in data for and project that was previously develop. This will assist the researcher gets an idea of the idea that should be included in a project. In this method, the investigator has created a character to prove. The video is related, as it would be in a sequence of three. Several they made drawings and video designs. The researcher has opted to use a bright color to make it more visual appealing. According to Chappell, the growth stage includes the format and the course are given. This is where the screenwriting, sketches, and comprehensive explanations of various. The development stage into three key stages that produced the first model, developing the project such as development and quality assurance which also perform a testing [9].

The implementations reflect the work undertaken to fulfil the criteria of the scope of work and to comply with the charter. The project team completed the work defined in the plan during the

implementation phase and make adjustments when the project factors changed. Barron cited that the project plan is set into action during the third stage, the implementation phase and the project work is carried out. During implementation, it is essential to maintain control and communicated as necessary [10].

The evaluation phase followed through at last where Questionnaires have been prepared to be distributed to the targeted audiences. According to McCue, the models produced are checked during the evaluation phase of the project to decide whether they have addressed the question or challenge defined at the beginning of the process. The models are also tested during this process to assess if the empirical performance meets the needs of the end users and is actionable in the relevant context. Evaluation phase of the process is a review of the overall accuracy of the model, as well as the type and nature of the errors. Predicting low-frequency events such as crime can be especially difficult, and with these low-frequency events, the overall accuracy of the models produced can be somewhat misleading [11].

V. THE DEVELOPMENT OF THE PROTOTYPE

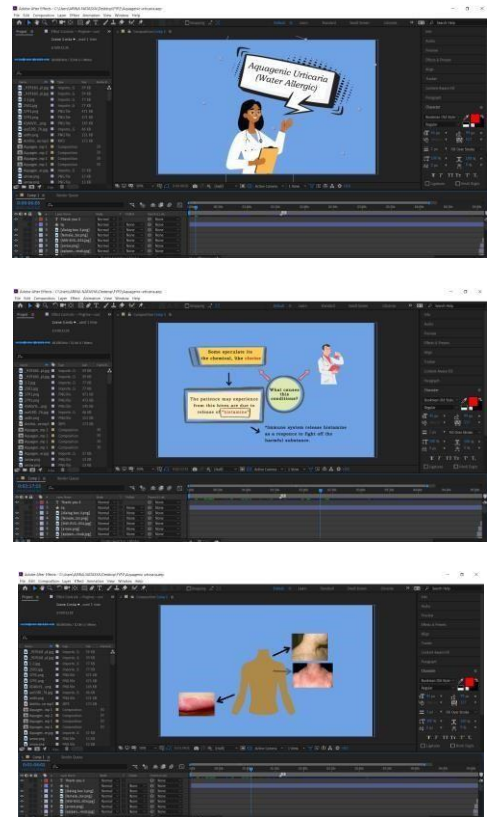


Fig. 3. Prototype in Adobe After Effect



Fig.4. The graphic design – character



Fig.5. The color scheme

The graphic design of character, the interface design of the theme and mood are equally important to the PSA. On top of these, the color is critical in the results outcome of a PSA. It can be challenging to this subject of AU to be designed as pleasing, calming and suitable with the subject. In this prototype we have selected cool color with warm as contrast to make the overall theme and mood of the AU attractive and easy to understand to the audience.

VI. RESULT AND DISCUSSION

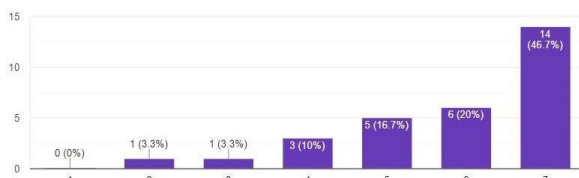


Figure 5: The information presented is well -documented

Figure 5 shows that the PublicService Announcement are well documented. Most if the respondent were strongly agreeing and understand with the information given by the researcher.

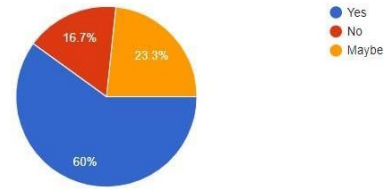


Fig.6. The awareness of the public about AU before this PSA

Fig.6.6 shows the awareness about the existence of Aquagenic Urticaria. 60% of the respondent are aware about the existence of this diseases after they watched the PSA. 23.3% of the respondent not that aware about this disease before and 16.7% respondent didn't aware about the existence of Aquagenic Urticaria.

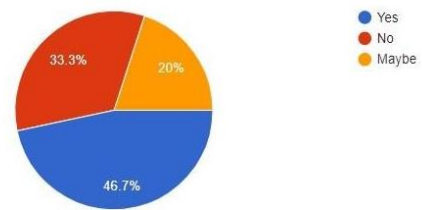


Fig.7. The general public are not aware that AU patients cannot touch any type of water form

Fig.7. 46.7% respondents are not aware about the problems AU patients have. 20% respondents are unsure and 33.3% did not know anything about it.

VII. CONCLUSION

The testing phase solution of multimedia such as this Public Service Announcement (PSA) production is critical. The PSA is designed with all the multimedia requirements of animation, usability navigation buttons, fonts and typeface for the pleasing of the interface theme and mood. The solution needs audience testing phase to be completed with the best output. This demonstrates that the PSA takes a longer time a little bit for the best results to be shown. The research objectives are met to the problems statements and finally the research methodology that is shown in ADDIE model.

VIII. REFERENCE

- [1]. Center, g. a. (June, 2016). Retrieved from <https://rarediseases.info.nih.gov/diseases/10901/aquagenic-urticaria#:~:text=Aquagenic%20urticaria%20is%20a%20rare,around%20the%20onset%20of%20puberty.>
- [2]. Rothbaum R, M. J. (n.d.). Retrieved from <https://www.dovepress.com/aquagenic-urticariadiagnostic-and-management-challenges-peer-reviewed-fulltext-article-JAA>.
- [3]. NZ, D. (n.d.). <https://dermnetnz.org/topics/aquagenic-urticaria/>.
- [4]. Sturgess, K. (2015). <https://www.sciencealert.com/here-s-what-happens-if-you-develop-an-allergy-to-water>.
- [5]. Aquagenic Urticaria Diagnosed by the Water Provocation Test and the Results of Histopathologic Examination, Jung Eun Seol, Do Hyeong Kim, So Hee Park, Jeong Nan Kang, Ho Suk Sung, Hyojin Kim Department of Dermatology, Busan Paik Hospital, Inje University College of Medicine, Busan, Korea pISSN 1013-9087 • eISSN 2005-3894 Ann Dermatol Vol. 29, No. 3, 2017 <https://doi.org/10.5021/ad.2017.29.3.341>
- [6]. Cerino, V. (2014). <https://www.unmc.edu/news.cfm?match=12374>.
- [7]. Platform, D. C. W. (Director). (2020). *Hives | Urticaria-Causes, Symptoms, Treatment | Skin Rash | Allergy - Dr. Rasya Dixit Doctors' Circle* [Motion Picture].
- [8]. Technology, p. t. (2017). Retrieved from <https://mediacommons.psu.edu/2017/02/14/public-service-announcement/>.
- [9]. Chappell, M. (2018). Retrieved from <https://elearningindustry.com/getting-know-addie-analysis>.
- [10]. Barron, M. (n.d.). Retrieved from <https://opentextbc.ca/projectmanagement/chapter/chapter-3-the-project-life-cycle-phases-project-management/#:~:text=The%20implementation%20phase%20represents%20the,when%20the%20project%20factors%20changed.>
- [11]. McCue, C. (2015). Retrieved from <https://www.sciencedirect.com/topics/computer-science/evaluation-phase>.