CERTIFICATION OF APPROVAL

Cerebral Palsy Web Portal

By

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11303

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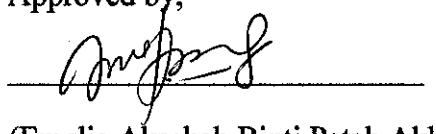
Approved by,



(Emelia Akashah Binti Patah Akhir)

UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

May 2011

CERTIFICATE OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken by unspecified sources or persons.

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(SITI NABIHAH MAHAMAT POZI)

ABSTRACT

Cerebral Palsy (CP) patients suffer physical impairment that results in the need of being dependent to the parents or guardian in performing their daily life. However, the condition of CP patient can be improvised and trained to lead their life independently with the right knowledge about the treatment and ways of handling and taking care of a CP patient. Therefore, the project, namely, Cerebral Palsy (CP) Web Portal is developed with the main objective of establishing a platform of knowledge sharing in order to encourage the CP community in Pusat Pemulihan Sultan Azlan Shah to communicate with each other more frequently so that the necessary and essential knowledge can be transmitted successfully. The interactive features of the web portal which includes forum, chat room and video gallery will be the main tools in serving the purpose of knowledge sharing between the members of the community. In conclusion, the existence of CP Web Portal can assist in bridging the communication gap and enhancing knowledge sharing culture within its members.

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CHAPTER 1

INTRODUCTION

1.1 Project Background

Cerebral Palsy (CP) is a kind of disease that affects the area of the brain that results in a physical disability to the patient. The term "cerebral" itself refers to an affected area of a brain while "palsy" means disorder of the physical ability. The disease is caused by numerous factors such as infection, abnormal development of the brain, toxic substances and metabolic disorders as well as genetically infected. Myriad of treatments options are available outside the market such as physical therapy, occupational therapy, speech therapy, surgery and many more to mention.

One with CP syndrome could not be able to perform life like a normal person as he or she will have the tendency to depend on the family members or guardian in performing daily chores and routines. Therefore, parents or guardian of the CP patients play a vital role in improving the physical condition of the CP patient in order to enhance their capabilities in leading their life independently without depending so much on other people.

This web portal for CP focused on providing an interactive platform for two way communication and knowledge sharing among the CP community in Pusat Pemulihan Sultan Azlan Shah, Ipoh which consists of the parents of CP patient, guardian of CP

patient, medical experts as well as physiotherapist. This will provide the CP community important information and knowledge pertaining to taking care of a CP patient.

1.2 Problem Statement

Knowledge is an essential ingredient in life as it will make one become better prepared for one situation. When one seeks for knowledge, it is a never ending journey as learning is an ongoing process throughout one life time. Traditionally, in order to seek for knowledge, one need to attend class then only he or she will be able to gained the knowledge needed. In the globalization era, the process of searching for knowledge has no boundary with the existence of the internet and sophisticated IT tools. In the scope of searching for information regarding Cerebral Palsy (CP), there are myriad of websites that would be able to offers that, However, the problem is that, there is still a lack of an interactive website that offers comprehensive and latest information about CP. This has brought so much difficulty for parents or guardian of CP patient to search on information for their CP child.

In Ipoh, Malaysia, Pusat Pemulihan Sultan Azlan Shah is a centre for parents and guardian of CP patient to bring their child for treatment. From the observation and some research, the knowledge sharing is only limited during the treatment hours of the CP patient as there is no platform of knowledge sharing for the CP community at the centre. It has result in a huge communication gap between the CP communities in order to share knowledge.

1.3 Objectives

The objectives of the project are:

- To develop an interactive web portal for CP community in Pusat Pemulihan Sultan Azlan Shah as a mean of knowledge sharing
- To provide a knowledge sharing platform among the CP community in Pusat Pemulihan Sultan Azlan Shah

- To bridge the communication gap between the CP community in Pusat Pemulihan Sultan Azlan Shah.

1.4 Scope of Study

The scope of study is emphasize on the CP community in Pusat Pemulihan Sultan Azlan Shah which consist of the parents, guardian or family members of the CP patients, physiotherapist as well as the practical students at the centre. The author needs to do a research on what kind of information and knowledge that are most needed by the CP community as well as knowing the level of IT literacy among the CP community.

The content of the web portal would be general information about CP, media gallery such as video as a mean to share knowledge, forum as a mean of discussion among the CP community and so forth.

1.5 Feasibility of the Project within the Scope and Time Frame

The web portal is going to be developed using Content Management System (CMS) tool, specifically, Joomla Version 1.5. The author will need to study on how to utilize this tool so that the intended content of the web portal with the correct functionalities will be achieved.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

'Knowledge is weapon', a wisdom phrase that is very significant in describing knowledge. However, it will not be as powerful as describe in the phrase if it is severely wasted and it is not being utilize to the maximum extend. The question is how can we ensure that knowledge is use as much as possible so that we can obtain some benefits out of it? Web Portal is a remedy for that as it provides a medium to store tacit and explicit knowledge for the purpose of sharing, utilization and accessibility of knowledge [1]. The implementation of knowledge sharing is not only limited to the education field, but it is also applicable to the health domain specifically for the Cerebral Palsy (CP) community.

2.1 Cerebral Palsy (CP) Overview

Cerebral Palsy (CP) can be defined as malfunction of the brain that cause problem with the muscles that disable the physical, sensory and interpersonal capability of one [2]. Based on the facts from Kiwanis Disability Information and Support Center website [3] and [2] CP can be classified in four groups which are:

- Spastic Diplegia – Affects the leg
- Hemiplegia – Affect the same side of the arm and leg
- Double Hemiplegia – Affect both side of arms and leg
- Tetraplegia – The most severe condition which involve all the limbs

According to [4], 2 to 3 per 1000 live birth is affected by CP. Though the rate may seems rather low, a child with CP need to have a thorough care and guidance from the parents or guardian as they are lack of the ability to manage themselves and lead their life like a normal human being [4]. In order to address the problem, myriad of treatment options are available outside which includes physical therapy, occupational therapy, surgery, oral medication, chemodenervation, rhizotomy and intrathecal baclofen [5].

2.2 Internet and Web-based Application

A research by [6] indicated that all organization needs to rely on the Information Technology (IT) to as the first step to embark on the knowledge management. With that, the internet is chosen to be the platform to serve the purpose using WWW. World Wide Web or better known as WWW is a booming phenomenon in this technological advanced era. Each and every day, hundreds of website is constructed thus explaining the increased number of the Internet users. A case study which has been mentioned in [7] about a project called Clinical Information Access Project (CIAP) which uses the Internet as a medium to launch the KMS was a success. The success story of CIAP doesn't end until that only as it also received several awards and recognition which are 1998 Australian Data Management Association (DAMA) Excellence Award and the 1998 Australian Library and Information Association (ALIA) Award [7]. Apart from that, it is also easy to set up as it only requires a Personal Computer (PC), a modem and an Internet connection [7]. Since the target users of the KMS is going to be from variety and different places, a web-based KMS is the best option in order to serve the purpose as it offers flexibility and ease of access to share knowledge even though the users came from different continents of the world [8][9]. In other words, it provides a platform to centralize the storage of useful knowledge to be captured and transmitted. In addition to that, web-based KMS also prove to be a time-saving approach that can be developed in a short period of time [9].

On the other hand, a web-based application also has a few drawbacks such as the security issue. The internet world is very vulnerable with the threat of the hackers that may steal the information. Thanks to the embedded security layer in the web browser, such threats can be avoided. Therefore, a web-based platform will be a cost saving method as one does not have to invest on the security aspect since a web-based platform is already integrated with the virtual networks tunnels with the existing TCP/IP network [10].

2.3 Interactive Web Portal as a Medium to Knowledge Sharing

In this globalization era, the usage of interactive web portal is emerging. The organization would most likely adopt a web portal for their company rather than having a conventional Web 1.0 that is only capable of displaying information with less interactivity with the users.

Nowadays, the concept of web portal has been implemented vastly throughout many domains which includes government services, medical, education, entertainment and so forth. The government of Canada made a very good initiative to provide its citizen with services and information via the Internet by having a web portal where the citizens can access anytime and anywhere that they wish to [11]. The government of Malaysia did also implement the same thing with the entry project of Multimedia Super Corridor (MSC) to support these efforts [12].

The usage of web portal does not only limited to the government only, but it is also has been used widely in the education field. The institution of higher learning in Malaysia also has its own university portal as a platform to communicate with its students [13]. In other words, the web portal will act as the middle man in conveying information and sharing valuable knowledge with the students.

Web portal can give an enormous number of benefits to its users. Mainly, web portal can assist organization or enterprise to achieve an effective management of its services of the

organization [14]. In addition to that, web portal can also act as a gateway of information and knowledge to the users as they can make most benefits out of the knowledge obtained [15]. [16] also mentioned that web portal is the source of information and knowledge for its users providing that the quality of the information is on par with the expectation of the users.

In terms of medical, a web portal has been developed for Diabetic patient and it was found that it's been a great assistance in providing the patient with clinical information thus making them feel secured and in control of the disease [17].

CHAPTER 3

METHODOLOGY

3.1 System Development Methodology

Rapid prototyping is the chosen methodology in order to develop the knowledge management system. Reason being, it provides an iterative process that enable the knowledge developer to make necessary improvements and adjustments to the developing system so that it will be at par with the requirements intended by the end users. The process is not really stringent unlike the waterfall process where there is a need to strictly follow the sequence of the process of developing the system. Rapid prototyping would be able to provide a sense of flexibility to the developer in order to produce a system that is synchronized with the needs and expectation of the users. Enclosed is the diagram of the process of rapid prototyping followed by the explanation of the each and every step in the process.

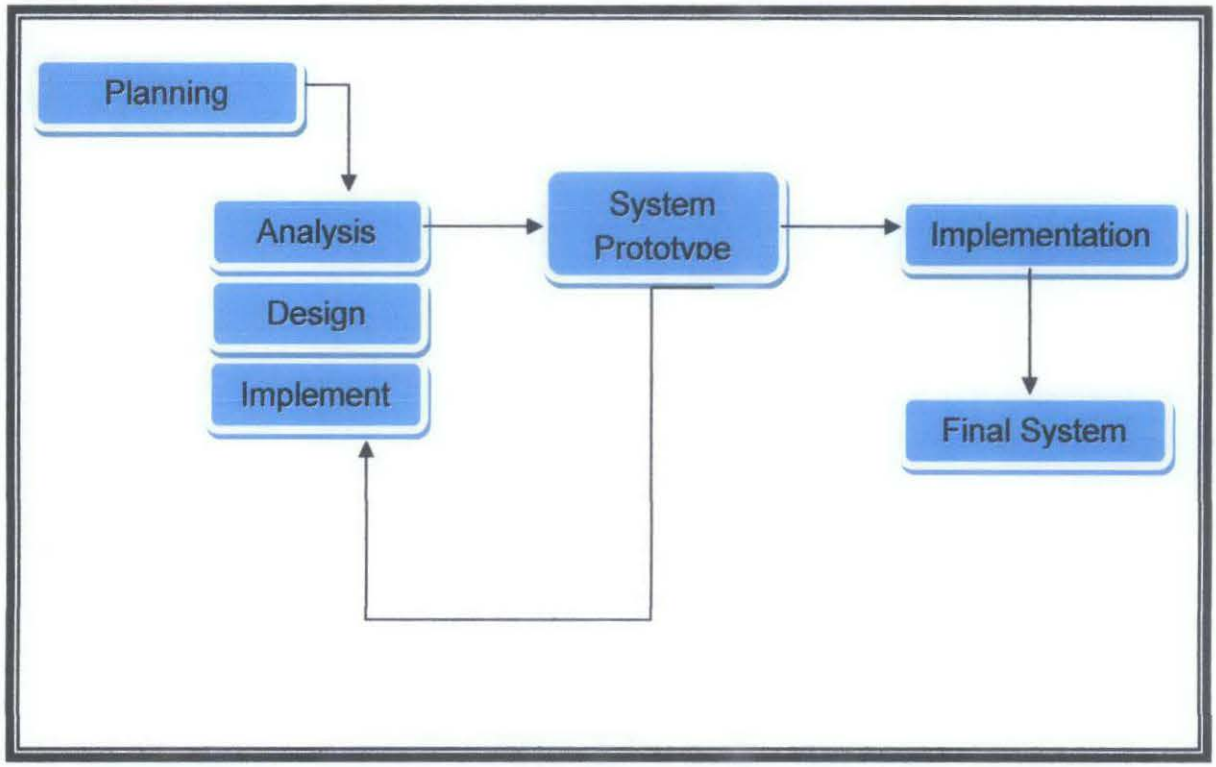

Figure 3.1 Prototyping-based Methodology

3.1.1 Planning

During planning phase, a few questions need to be answered such as:

- What problem that the CP community faced in knowledge sharing?
- If a tool is created for them to share knowledge, how it will be able to capture their interest to fully utilize the tool?
- Will the tool created brings benefits to the users? In what sense?

3.1.2 Analysis

Under the analysis breakdown, the main activity that is conducted in order to gather the requirements of the system from the potential users is by utilizing the survey methodology. A sample of 30 survey participants answered the questionnaire developed who consist of the physiotherapist, family members of CP patient as well as the students who are taking physiotherapy as a course at their college or universities. Enclosed is the rationale and relevancy of the questions embedded in the survey.

No	Questions	Objective
1.	Please state your age What is your education level? Household income	To obtain the demographic information about the participants of the survey.
2.	Do you personally know of a child diagnosed with Cerebral Palsy? If yes, please indicate your relationship with the child below.	To indicate the knowledge level of the participant towards CP
3.	Currently, do you rely on any website or media to obtain information pertaining to Cerebral Palsy?	To identify the existence of any website or media that is used for the purpose of knowledge sharing of CP.

4.	I need an effective and efficient web portal to search for information and knowledge sharing of CP. If, let say an interactive web portal is develop for the purpose of providing a platform for knowledge sharing among CP community, what kind of features you would like to have on it? I believe that an effective system will also integrate the people in CP community to have a better knowledge sharing culture..	To retrieve the interest of the potential users towards the idea of developing an interactive web portal for CP community. .
5.	What kind of information would you like to retrieve from the interactive web portal?	To identify the features that most likely is the preferences of the potential users
6.	I spent approximately... hours online in one day Do you have an internet connection at your house or workplace? I am an active Internet user.	To know the relevancy of having a web portal towards the potential end users.
7.	I believe with a web portal will assist parents and guardian in searching for valuable information that are important in taking care of CP child.	To be informed about the reliability of the web portal in delivering information.
9.	I believe that an effective system will also	To measure the

	integrate the people in CP community to have a better knowledge sharing culture.	effectiveness of the web portal for closing the communication gap between parents and physiotherapist of CP patient.

3.1.3 Design

Design phase will require the author to design architecture and framework of the system based on the requirements needed by the potential users. The design will also cover aspect such as the software, hardware as well as the infrastructure.

Graphical user interface (GUI) is also included under the design phase. The author will need to determine what kind of interface that would be able to gain the interest of the user as well as provide user-friendly features to the users.

3.1.4 Implementation

The system will be built based on the design developed in the phase before. During the implementation phase, in parallel, the author will develop and conduct testing in ensuring that the system being develop is in line with the requirements specified by the potential users.

3.1.5 System Prototype

System prototype posses almost 70% of the functionalities that is required by the users. The system prototype will be tested first to the final user. Any changes will be implemented in order to improvise the system so that it will meet all the necessary requirements.

3.1.6 Implementation

Again, the improved system will be tested again to the user. If the system is fully function and meet the requirements specified, it will be ready to be established into a final system.

3.1.7 Final System

Finally, the fully completed system is going to be delivered to the user for maximum utilization.

3.2 Research Methodology

Throughout the project, several methodologies have been identified in completing the project which includes:

- Interview

  Two type of interview methods are going to be applied which are the face-to-face interview and telephonic interview. Face-to-face interview requires a real time interaction between the interviewer and interviewee and it is conducted in a real environment [17]. It is one of the best methods to be conducted as the yield of information from the interviewee would be very high. A real interaction with human can enhance the understanding and the message that one is trying to convey would be easier to be expressed and comprehend.

  As for telephonic interview, it is going to be applied if the interviewee is in a different place. The telephonic interview also is considered as one of the most cost-saving method but the information sometimes is not encoded properly.

- Observation

  This is the most common type of collecting data and information. Observation can't be use solely as a data gathering method, therefore explains the decision to combine it with the interview method in order to produce more accurate information [18]. The observation will be conducted at the selected physiotherapy center or hospitals in order to observe the behavior of the CP patient.

- Survey

  A survey with a set of questionnaire is conducted to the physiotherapist, family of CP patients as well as the students who are taking the physiotherapy course. A sample of 30 participants is recorded for the survey.

3.3 Tool Required

3.3.1 Hardware

The hardware used to develop the system is a Sony Vaio Personal Laptop and the specification of the hardware is as followed:

Operating System	Microsoft Windows Vista Home Basic
Processor	Intel ® Core ™ Duo Processor T7100 1.80 GHz
Memory	1 GB of RAM
Disk space	80GB

3.3.2 Software

- Tool – Content Management System (CMS) tool Joomla Version 1.5

3.4 Gantt Chart

Key milestones are included in the Gantt Chart. Kindly refer to **Appendix 2.**

CHAPTER 4

RESULT AND DISCUSSION

4.1 Questionnaire

Referring to the research methodology specifically the questionnaire, the purpose of conducting the survey is to unleash the potential of developing this system. Other than that, it is also to identify the best platform to develop the system which utilizes the web-based platform. The result of the questionnaire is analyzed and presented in a graph as follow:

Demographic information:

1. Please state your age

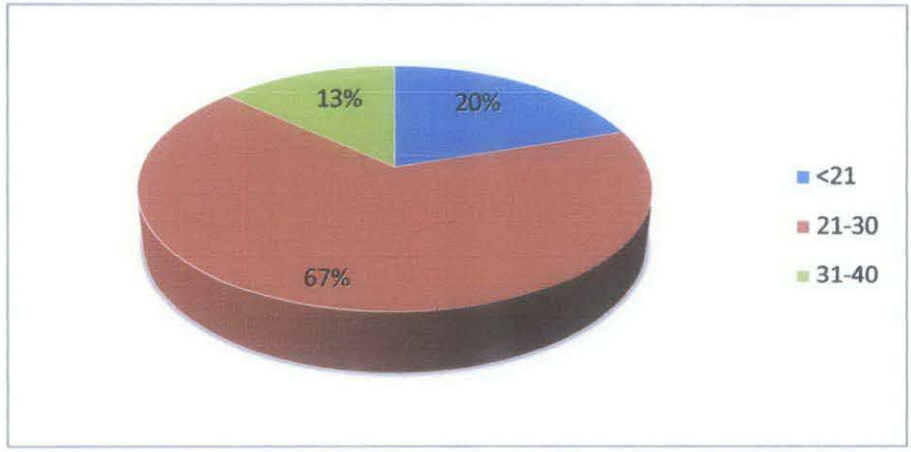

Figure 4.1 : Age of respondents

2. What is your education level?

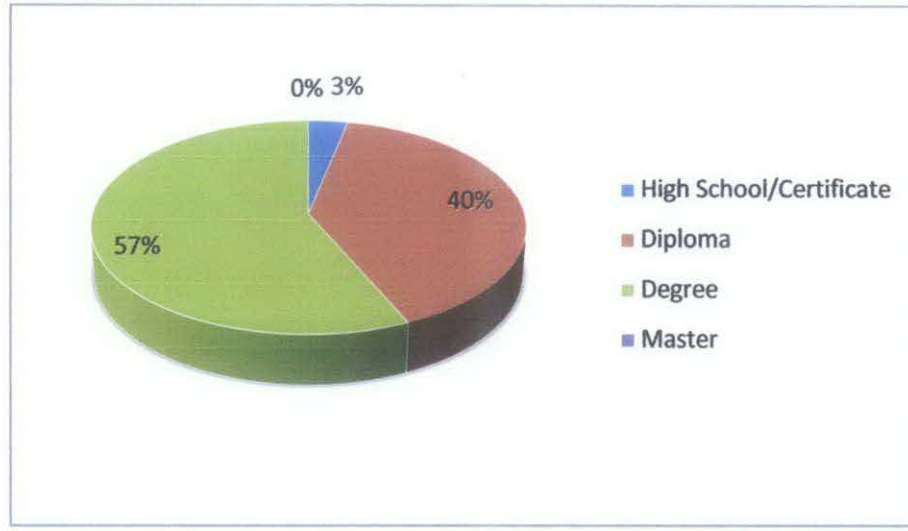

Figure 4.2: Education level of respondents

3. Household income

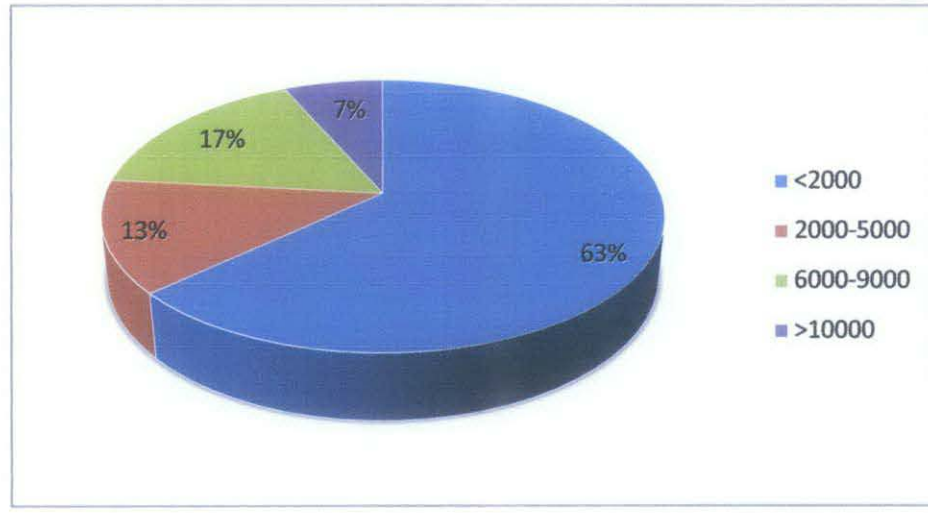

Figure 4.3: Household income of the respondents

4. Do you personally know of a child diagnosed with Cerebral Palsy? If yes, please indicate your relationship with the child below.

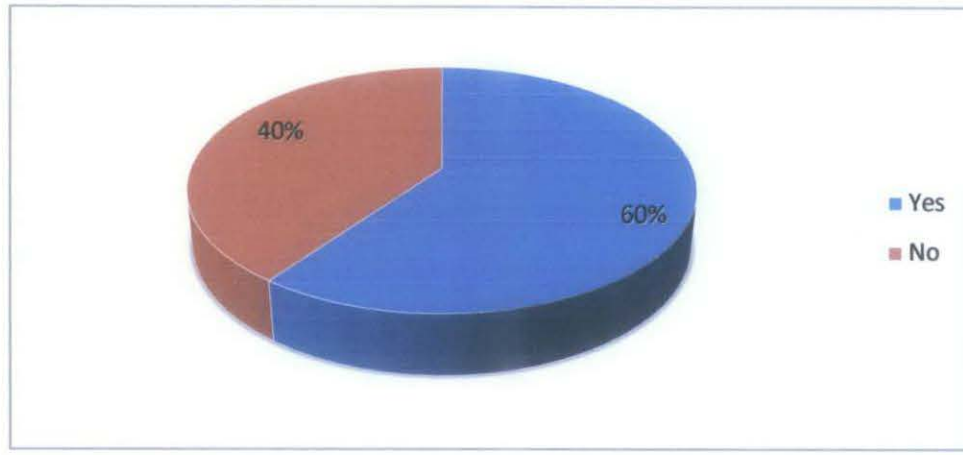

Figure 4.4: Relationship with any Cerebral Palsy (CP) patient

Most of the answer indicated that they are familiar with Cerebral Palsy since they have a either patient or family relationship with the CP patient.

System Requirement:

5. Currently, do you rely on any website or media to obtain information pertaining to Cerebral Palsy?

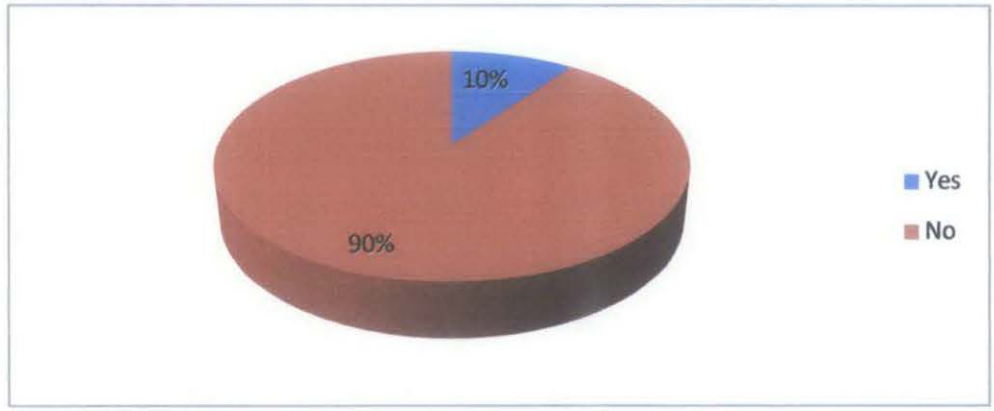

Figure 4.5: Dependency on any website media to search for information

Majority of the participants does not rely on website or media to assist them in searching for information about Cerebral Palsy.

6. If, let say an interactive web portal is develop for the purpose of providing a platform for knowledge sharing among CP community, what kind of features you would like to have on it?

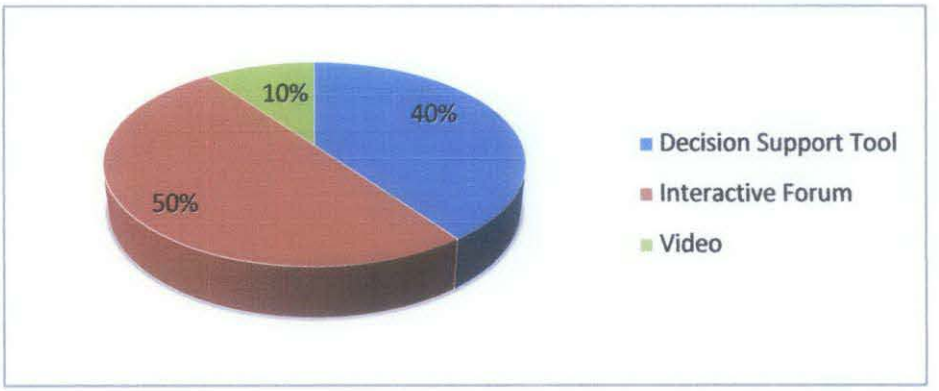

Figure 4.6: Features respondents would like to have

The result indicated that 50% of the participants wish to have an interactive forum followed by Decision Support Tool as part of the requirements of the system.

7. What kind of information would you like to retrieve from the interactive web portal?

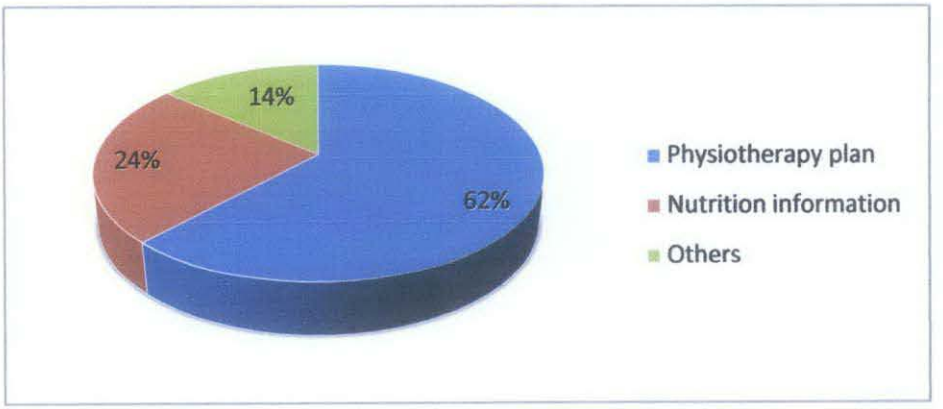

Figure 4.7: Information intended to retrieve

Relevancy of using web-based platform:

8. I spent approximately... hours online in one day

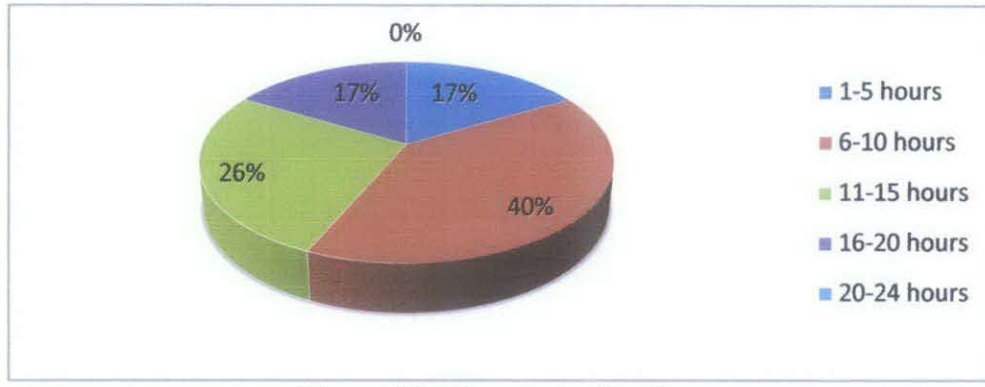

Figure 4.8: Hours spend online

9. Do you have an internet connection at your house or workplace?

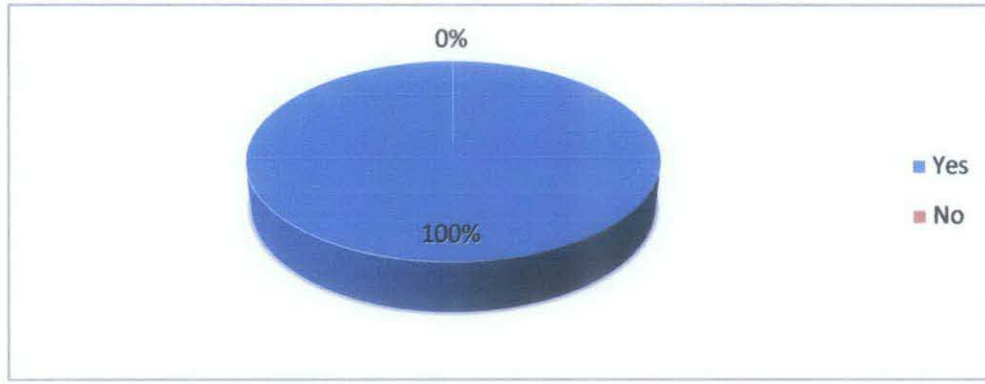

Figure 4.9: Availability of Internet connection

10. Scale rating questions

    Indicator:

    - 1 Strongly Agree
    - 2 Agree
    - 3 Somewhat Agree
    - 4 Neutral
    - 5 Somewhat Disagree
    - 6 Disagree
    - 7 Strongly Agree

Question/Rating	1	2	3	4	5	6	7
I need an effective and efficient web portal to search for information and knowledge sharing of CP.	46.2%	23.1%	7.7%	23.1%	0%	0%	0%
I am an active Internet user.	15.4%	38.5%	15.4%	30.8	0%	0%	0%
I believe with a web portal will assist parents and guardian in searching for valuable information that are important in taking care of CP child.	38.5%	30.8%	7.7%	23.1%	0%	0%	0%
I believe the high number of CP website on the Internet is not helpful enough.	30.8%	23.1%	7.7%	15.4%	15.4%	0%	0%
I believe that an effective system will also integrate the people in CP community to have a better knowledge sharing culture.	38.5%	46.2%	0%	15.4%	0%	0%	0%

4.2 Prototype

The prototype was developed based on the requirements gathered during interview as well as survey conducted at the centre. The prototype of the web portal has several interactive functionalities such as video and picture gallery, forum, chat room and many more to mention.

The home page displayed all the menu selection in order for the user to choose. There are two options of menu, one is from the drop-down menu tab on top of the web and another one is at the bottom left of the website. The purpose of doing this is to achieve the objective of having an interactive web portal that provides interactive user interface for the users.

Figure 4.10: Home page

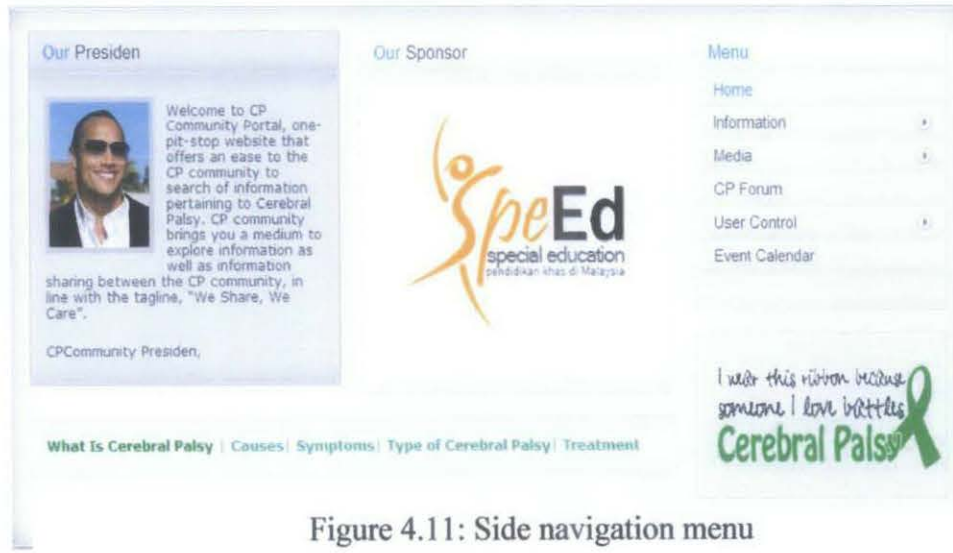

Figure 4.11: Side navigation menu

In order to fully navigate and utilized the web portal, one will need to register as a member first. An e-mail will be sent to registered member e-mail mailbox for the purpose of verification then only that person will be able to log in into the system.

Figure 4.12: Register as member pop-up display

When the user click on the Information drop-down menu, a whole list of type of information will be displayed such as "What is Cerebral Palsy?", Treatment, Causes, Type of Cerebral Palsy and many more. Each of the links will lead the user to the basic and general information about CP. In addition to that, users will be able to comment on each of the articles included below the information drop-down menu.

Figure 4.13: Information menu will lead to this page

Figure 4.14: Users will be able to comment on the article

As the user hover the cursor to the media tab, there will be a drop-down menu listing two more selections which are the image gallery and video gallery. The registered user will has the ability to upload pictures into the web site and other registered users would be able to comment on the picture. As for video gallery, the users will also be able to upload the video and the other users will be given chances to comment, rate as well as save their favorite video.

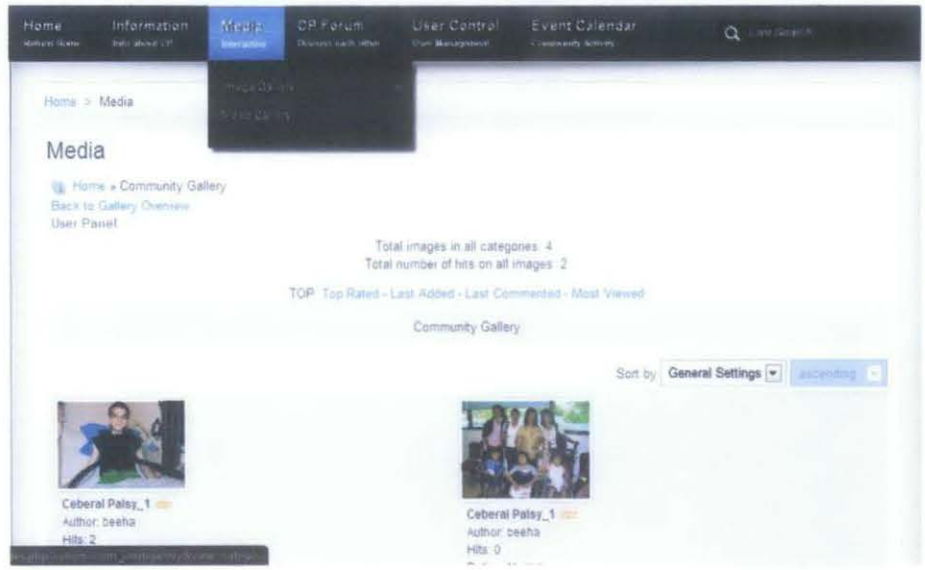

Figure 4.15: Pictures can be uploaded and commented

Figure 4.16: Videos uploaded can be comment, rate and save by users

The next tab is the Cerebral Palsy (CP) Forum function, a platform for the purpose of discussion among CP community. Under the forum, there are a few categories of discussion such as Cerebral Palsy Treatment, Parents with Cerebral Palsy Children, Mobility Tools and a lot more to mention. Users can open up a new thread for discussion under each of the categories.

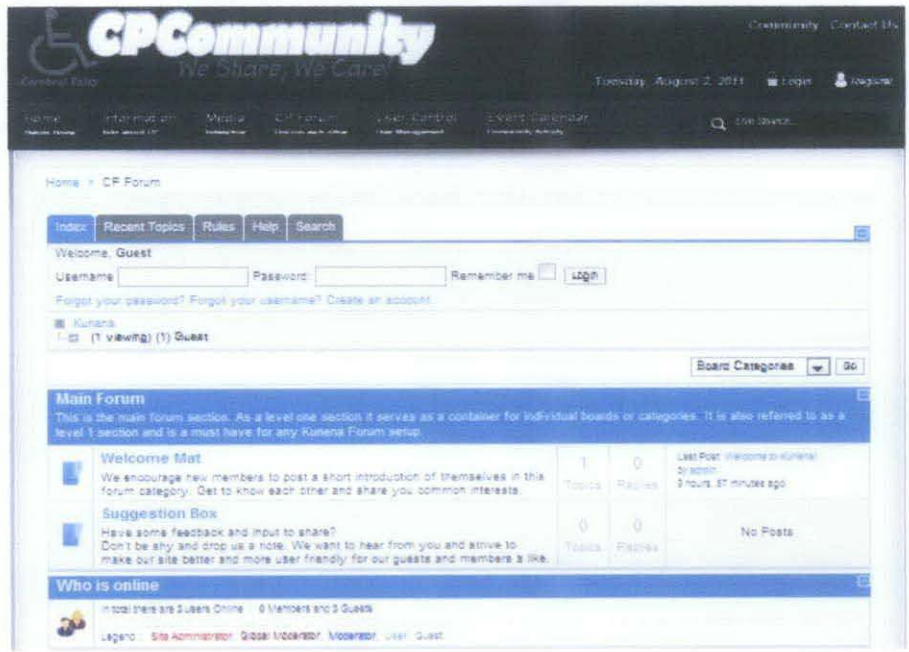

Figure 4.17: Cerebral Palsy Forum for discussion

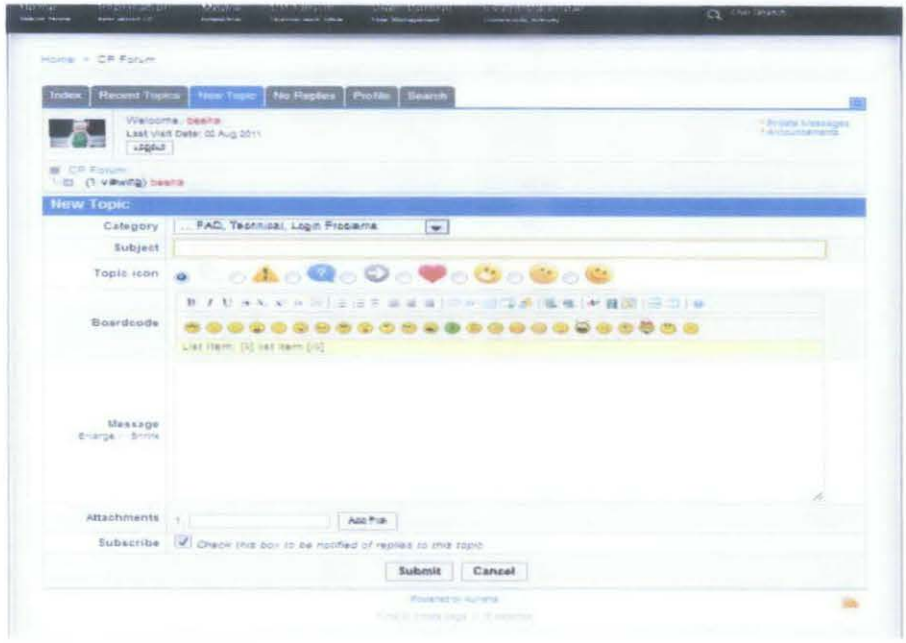

Figure 4.18: Function for user to create new thread or topic in the forum

Besides of that, the web portal also an event calendar for the CP community to upload and notify all members about any upcoming event that they are going to organize. For that, each of the members will be updated from time to time and will be able to get involve actively in the activities organized by the community

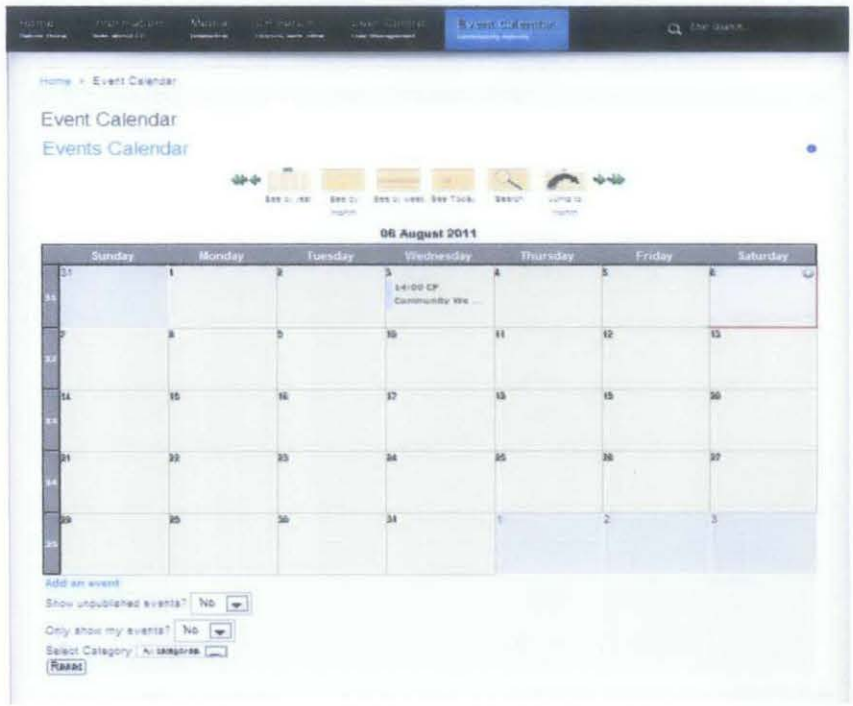

Figure 4.19: Event calendar function

Chat function is also available inside the web portal for a quick and interactive discussion among the members.

Figure 4.20: Chat function

Under the user control tab, a user will be able to manage his or her own profile by updating the necessary information needed. Besides of that, users can also see their connection with other members in the web portal. Users can also send a private inbox message to the other user within the web portal.

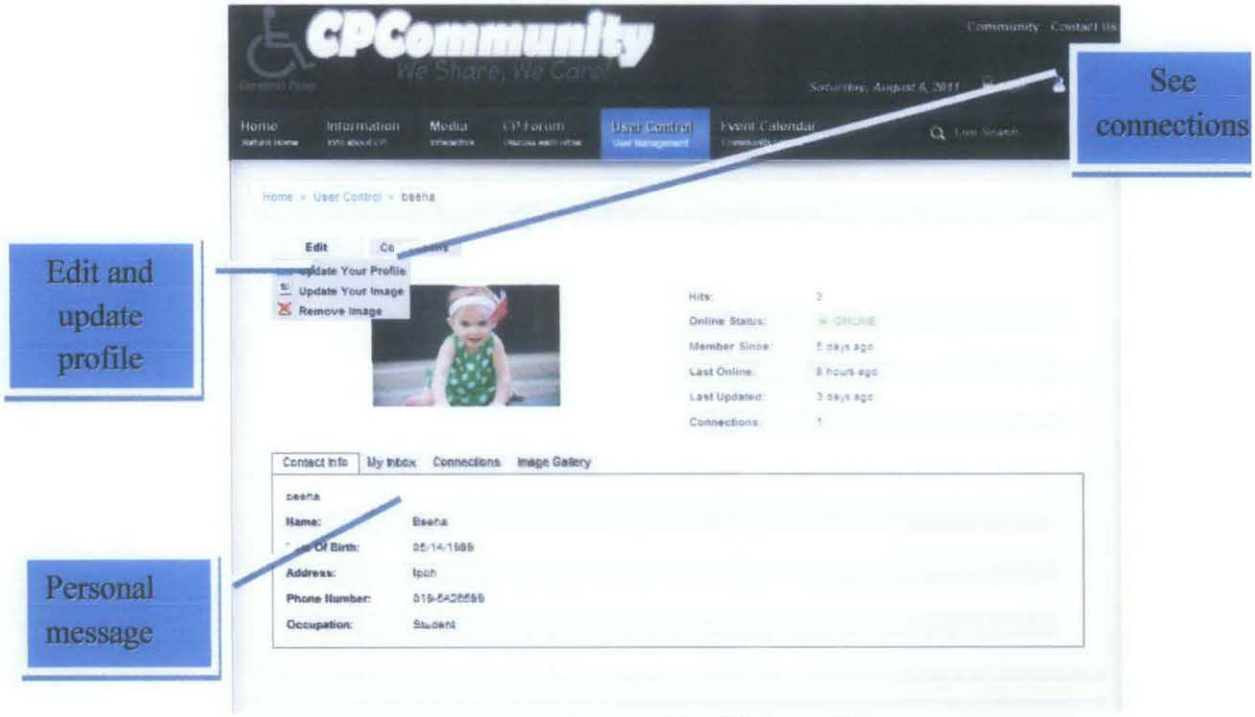

Figure 4.21: User profile

4.3 User Acceptance Test

4.3.1 Purpose of User Acceptance Test

The main purpose of conducting the User Acceptance Test (UAT) is to verify whether the web portal developed for the Cerebral Palsy (CP) in Pusat Pemulihan Sultan Azlan Shah is able to achieve the requirements as well as the objectives stated at the very beginning of this project. This test was also conducted in order to identify the area that in need of improvements in order to provide the web portal that meets the requirements and needs of the potential users.

4.3.2 Method

The aspect that the author covers under the UAT includes the functionalities, interface as well as the in terms of interactivity level of the web portal. The UAT provides a mean for the users to test the web portal and after that they were given a set of questionnaires where their feedback is required regarding the web portal. The users consist of the CP community in Pusat Pemulihan Sultan Azlan Shah consisting of the parents, guardian and physiotherapist.

4.3.3 Result

1. Are you able to register as the member of the CP Community web portal?

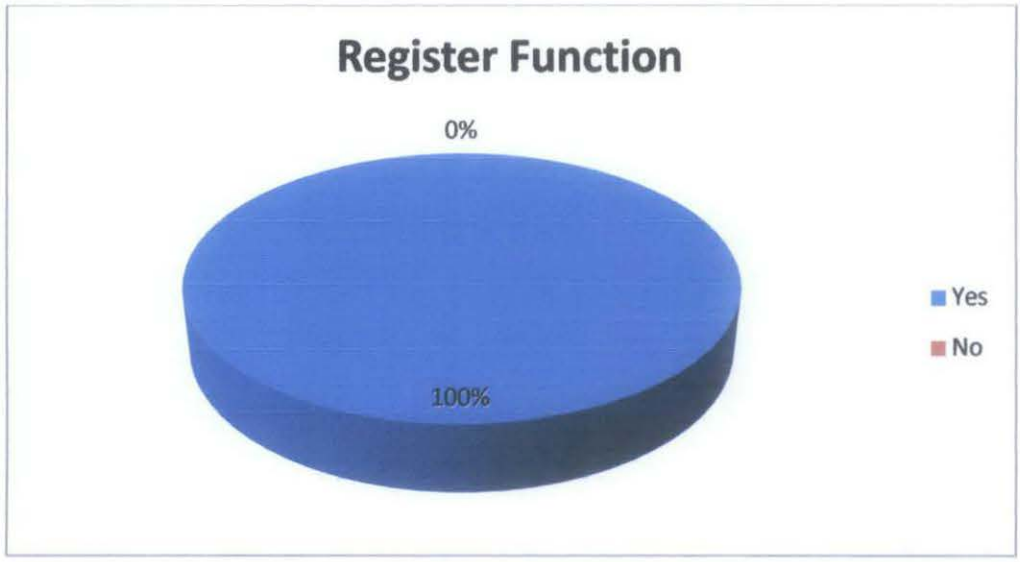

Figure 4.22: Register Function

2. Is it convenient for you to make changes to your profile and edit necessary information?

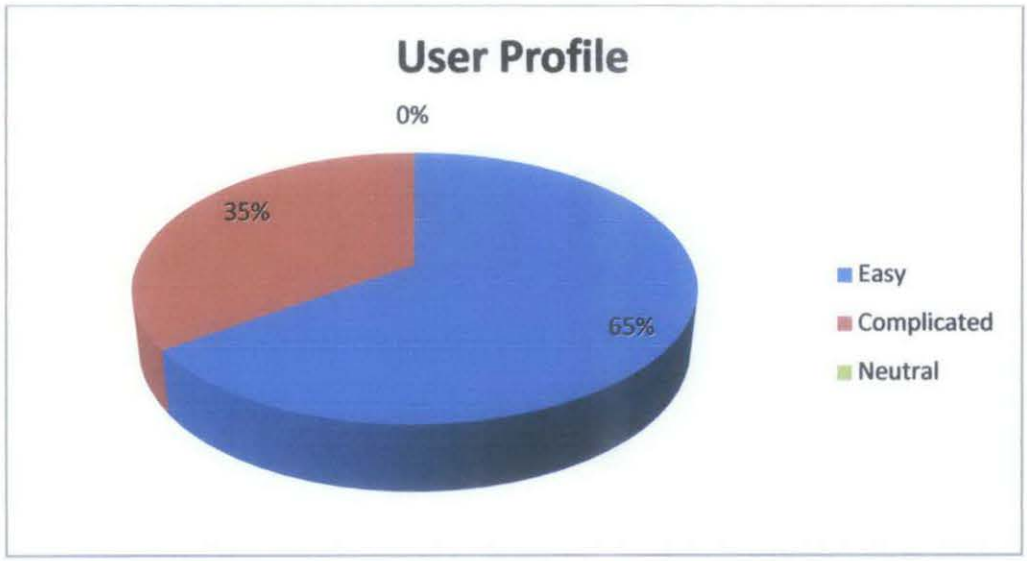

Figure 4.23: User Profile

3. Do you find it easy to manage your connections with other members in the web portal?

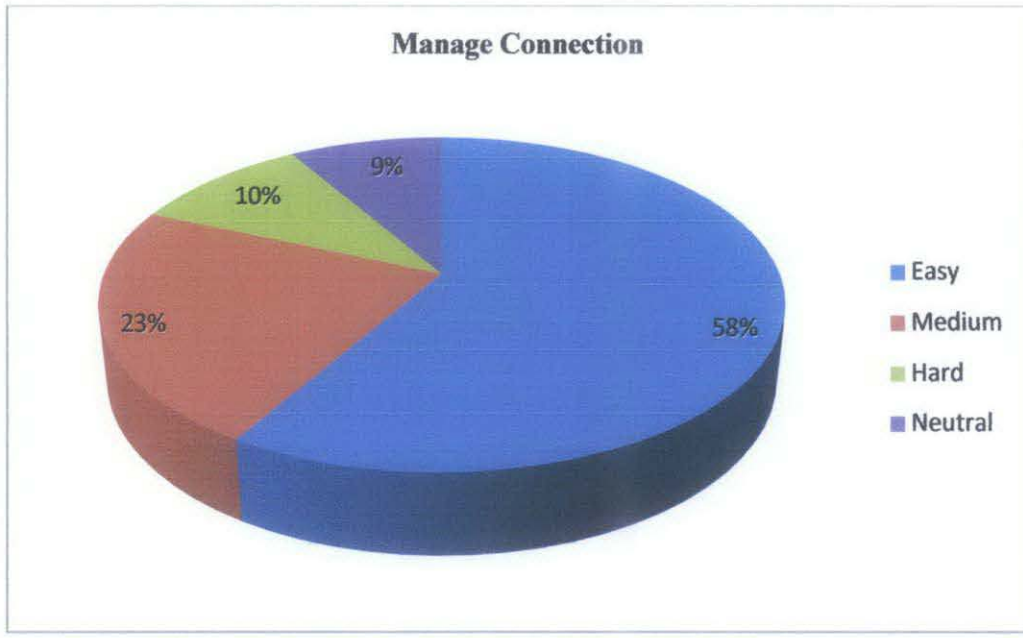

Figure 4.24: Manage Connections

4. User would be able to leave comments on the articles or information provided. Do you find this function to be very good in terms of interactivity level?

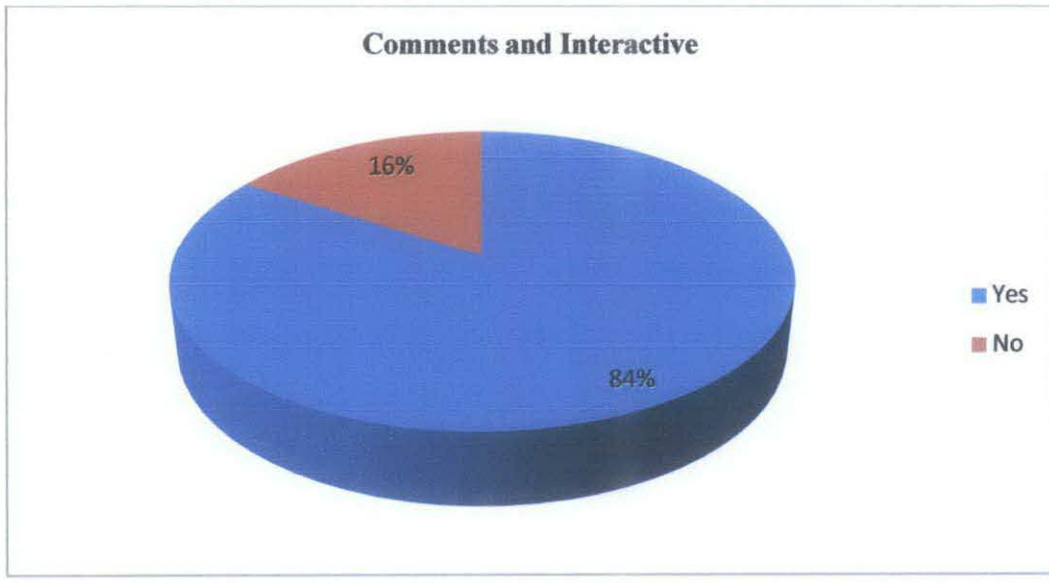

Figure 4.25: Comments and Interactive

5. The video and image up loader are very helpful in information sharing and made the process become more interactive.

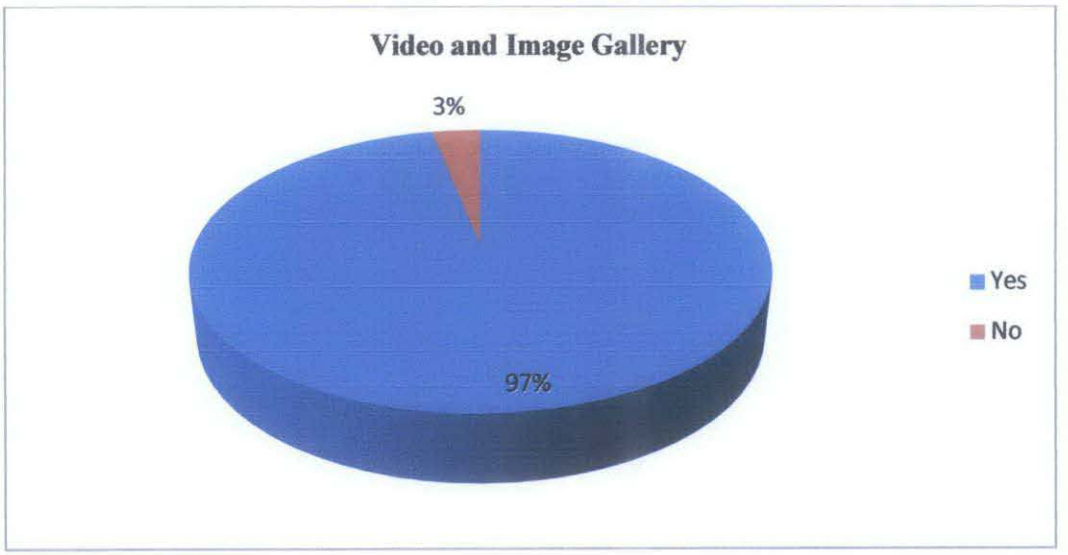

Figure 4.26: Video and Image Gallery

6. I found the forum to be interesting and interactive.

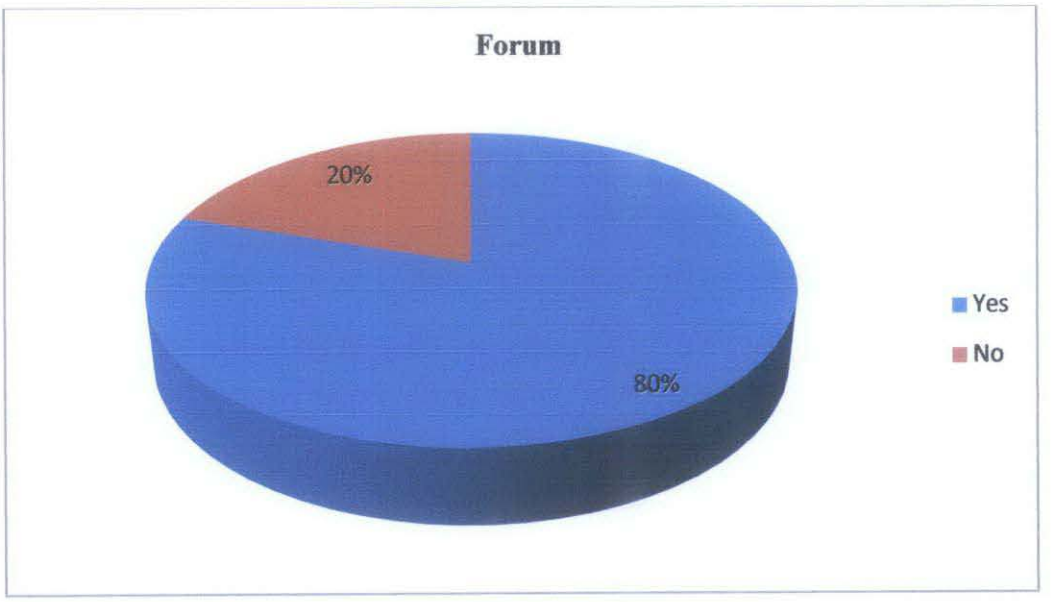

Figure 4.27: Forum

7. The event calendar function would enable the community to always be in the loop and updated about the upcoming event.

Figure 4.28: Event Calendar

8. The web portal can enhance the culture of knowledge sharing between the CP communities.

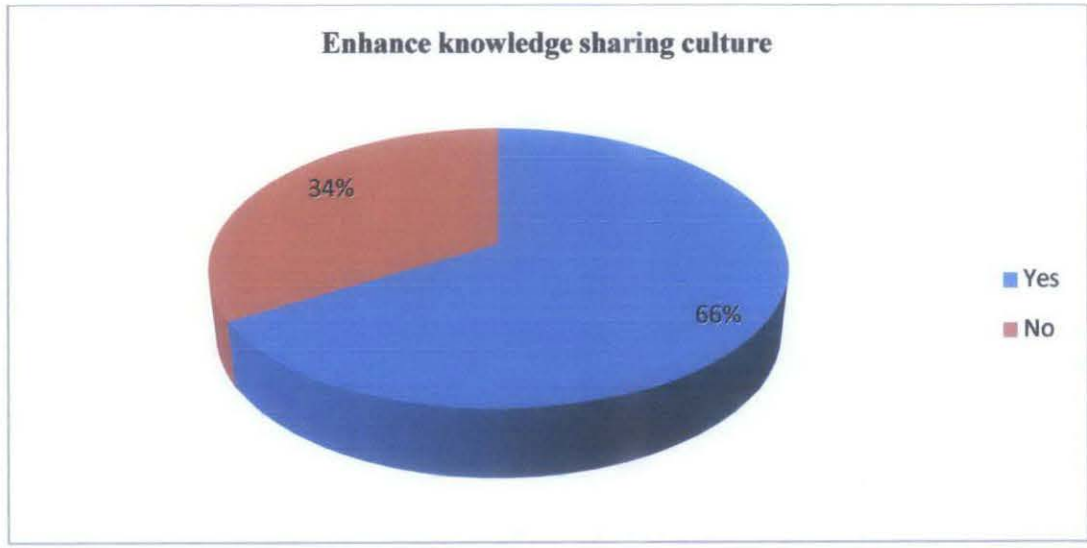

Figure 4.29: Enhance knowledge sharing culture

9. The web portal will be able to provide a platform for quick and easy access of information besides enhance the interaction among the members

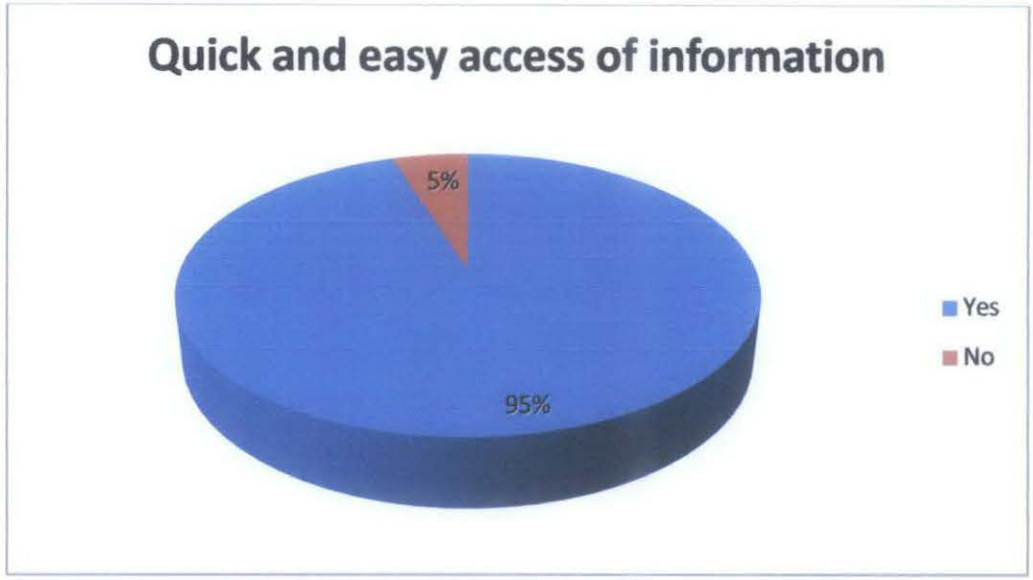

Figure 4.30: Quick and easy access

10. The functions of the web portal are sufficient enough. If No, please specify what kind of function you intend to have.

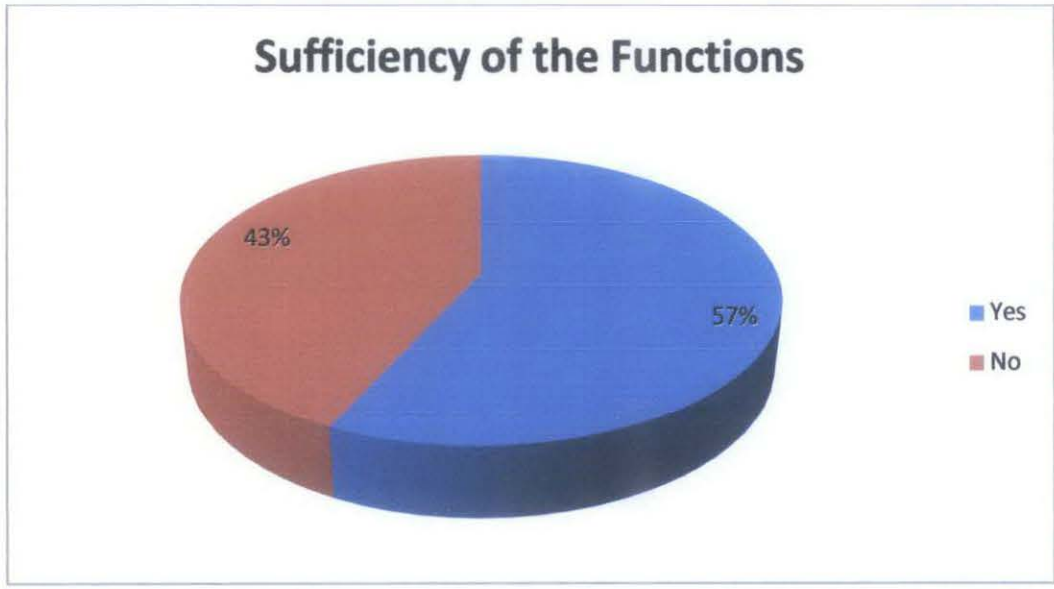

Figure 4.31: Sufficiency of the Functions

11. The theme color of the web portal is an ease to my eyes.

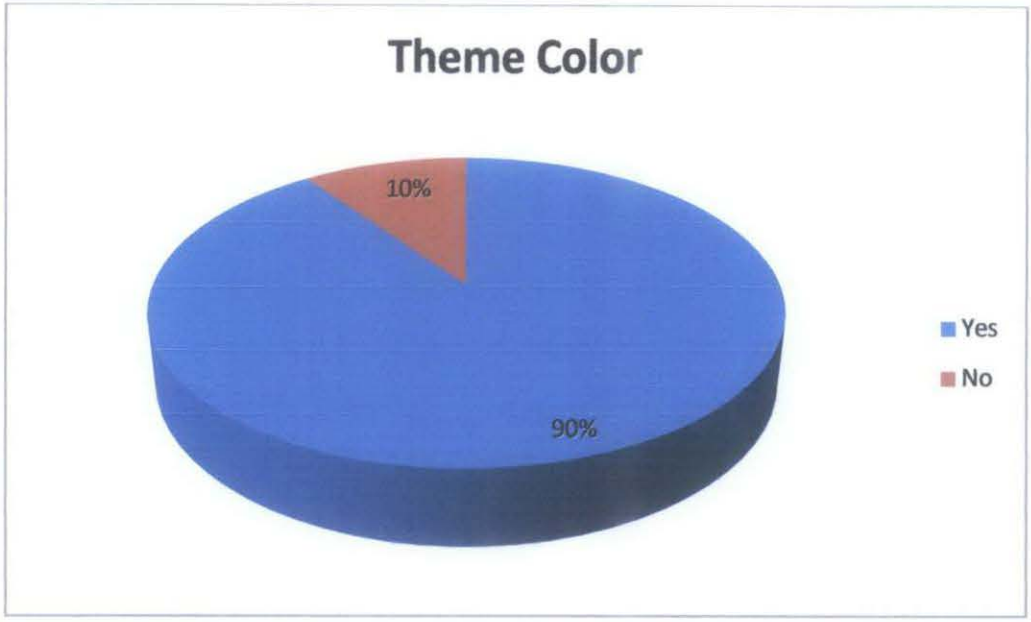

Figure 4.32: Theme Color

12. The navigation of the site is very intuitive and user-friendly.

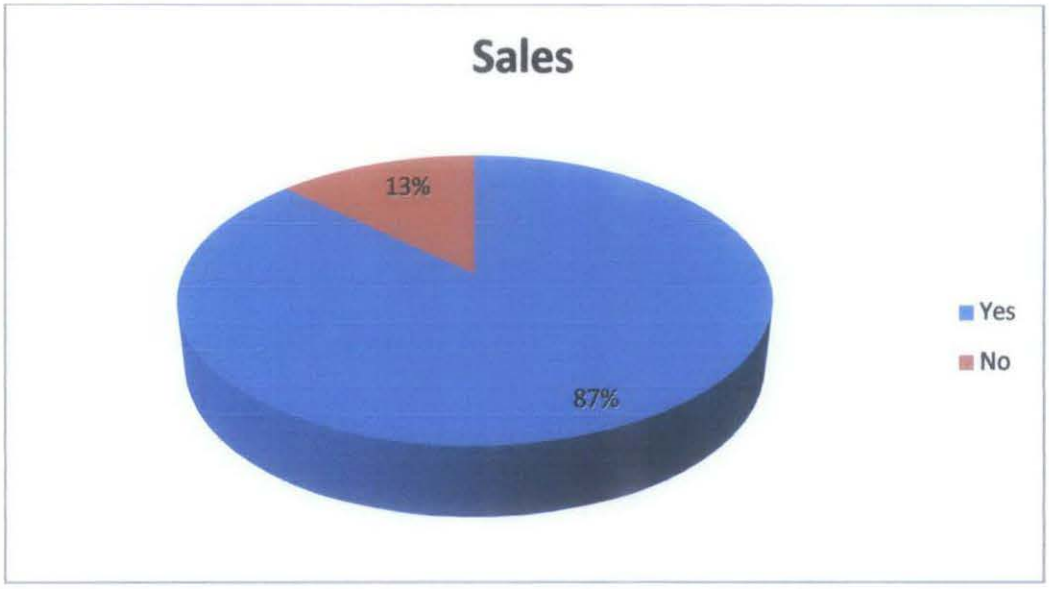

Figure 4.33: Intuitive and User friendly

4.3. Conclusion of User Acceptance Test (UAT)

Overall, the users are satisfied with the functionalities and interface of the web portal developed. However, there are certain area such as the navigation of the user profile should be improvised to make it less complicated. In addition to that, users also would like to have an added functionality such as a Decision Support System (DSS), Patient Management System and many more to mention.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Recommendation

The functionalities of the web portal which includes forum, chat room, video and media gallery as well as displaying information about Cerebral Palsy (CP) is quite comprehensive and meet the requirements of an interactive web portal. However, it would be an added bonus if the web portal is equipped with an expert system, say a decision support system to come out with a physiotherapy plan for the CP patient. This expert system would be a great assistance to the physiotherapist in helping them with the decision making by eliminating the lengthy duration, thus providing an effective decision making process for them.

Other than that, it would also be an advantage to the users if the web portal is equipped with a formal online teaching tool to give lesson to the physiotherapist and parents or guardian of CP patient step-by-step lesson of conducting a certain exercise that is part of the therapy. Though it can be implemented by using the video gallery where users can upload the method to implement the therapy, it would be nicer to have a proper and formal online teaching tool. For all the points mentioned above regarding recommendation of the project, the author believes that it would improvise the web portal in every aspect, hence bringing so many benefits to the potential users of the web portal which consist of the physiotherapist and parents or guardian of CP patient.

5.2 Conclusion

Having an interactive web portal for the CP community in Pusat Pemulihan Azlan Shah, Ipoh would be a good platform established to encourage the knowledge sharing within its members. The members can share the knowledge that they posses with the other members of the community. Knowledge sharing culture can make the knowledge within the community to grow even bigger and make them become more knowledgeable. Other than that, reflecting back to the objectives of this project, the web portal would be a one-pit-stop place for the CP community to find valuable information pertaining to CP. The existence of the web would also bridge the communication gap among the CP community members.

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APPENDICES

Appendix 1

The purpose of this survey is to gather the requirements in order to develop an interactive web portal as a platform of knowledge sharing among the Cerebral Palsy (CP) community. **All questions are required to be answered.**

1. Please state your age
    - <21
    - 21-30
    - 31-40
    - 41-50
    - 51-60
    - >60
2. What is your education level?
    - High School/ Certificate
    - Diploma
    - Degree
    - Master
    - PhD
3. Household income
    - <2000
    - 2000 – 5000
    - 6000 – 9000
    - >10 000
4. Do you personally know of a child diagnosed with Cerebral Palsy? If yes, please indicate your relationship with the child below.
    - Yes
    - No
    - If yes, please specify_____

5. Currently, do you rely on any website or media to obtain information pertaining to Cerebral Palsy?
    - Yes
    - No
    - If yes, please specify_____
6. If, let say an interactive web portal is develop for the purpose of providing a platform for knowledge sharing among CP community, what kind of features you would like to have on it?
    - Decision Support Tool
    - Video
    - Interactive Forum
    - Other_____
7. What kind of information would you like to retrieve from the interactive web portal?
    - Physiotherapy methods
    - Nutrition information
    - Others_____
8. Do you have an internet connection at your house or workplace?
    - Yes
    - No
9. I spent approximately... hours online in one day
    - 1-5
    - 6-10
    - 11-15
    - 16-20
    - 21-24

10. Please rate the answer that is best represent your view.

Indicator:

- 1 Strongly Agree
- 2 Agree
- 3 Somewhat Agree
- 4 Neutral
- 5 Somewhat Disagree
- 6 Disagree
- 7 Strongly Agree

Question/Rating	1	2	3	4	5	6	7
I need an effective and efficient web portal to search for information and knowledge sharing of CP.	46.2%	23.1%	7.7%	23.1%	0%	0%	0%
I am an active Internet user.	15.4%	38.5%	15.4%	30.8	0%	0%	0%
I believe with a web portal will assist parents and guardian in searching for valuable information that are important in taking care of CP child.	38.5%	30.8%	7.7%	23.1%	0%	0%	0%
I believe the high number of CP website on the Internet is not helpful enough.	30.8%	23.1%	7.7%	15.4%	15.4%	0%	0%

I believe that an effective system will also integrate the people in CP community to have a better knowledge sharing culture.	38.5%	46.2%	0%	15.4%	0%	0%	0%

END OF SURVEY

THANK YOU FOR YOUR PARTICIPATION

Appendix 2

Activity	Duration	Start Date	End Date	Key Milestones
Stage 1: Proposal and Approval	9 Days	31/1/2011	7/2/2011	**Approved Proposal**
-Submit Project Proposal	0 Days	4/2/2011	4/2/2011	
-Gain approval on topic	0 Days	7/2/2011	7/2/2011	
Stage 2: Research and Development	25 Days	8/2/2011	4/3/2011	
Phase 1- Analysis				
-Conduct Research	10 Days	14/2/2011	23/2/2011	
-Submission of Extended Proposal	0 Days	4/3/2011	4/3/2011	**Submit Extended Proposal**
Phase 2: Design	14 Days	6/3/2011	19/3/2011	
-Design system prototype	7 Days	6/3/2011	12/3/2011	
-Design User Interface	7 Days	13/3/2011	19/3/2011	**Proposal Defense Presentation**
-Prepare Interim Report	14 Days	20/3/2011	1/4/2011	**Interim Report**
-Prepare Technical Report	14 Days	2/4/2011	15/4/2011	**Technical Report**
Phase 3: Develop	45 Days	1/5/2011	22/6/2011	
-Develop Interface	1/5/2011	27/3/2011	22/6/2011	**Prototype**
Phase 4: Implement	10 Days	23/6/2011	4/7/2011	
Phase 5: Evaluate	14 Days	5/7/2011	19/7/2011	
-Develop Test Plan	7 Days	5/7/2011	11/7/2011	
-Execute Test plan	7 Days	12/7/2011	19/7/2011	
Final Presentation	0 Days	September	September	**Presentation**
Final Report Submission		September	September	**Final Report**