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Applying the User-Centered Design Method to A Perinatal Depression Website Design

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Applying the User-Centered Design Method to A Perinatal Depression Website Design

By

Jiaying Li

Rochester Institute of Technology

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Fine Arts

Computer Graphics Design
School of Design | College of Imaging Arts & Sciences

April.1.2015

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Thesis Committee Approval:

Chief Adviser: Professor Chris Jackson, Visual Communication Design

_____

Signature of Chief Adviser   Date

Associate Adviser: Professor Marla Schweppe, Visual Communication Design

_____

Signature of Associate Adviser   Date

Associate Adviser: Assistant Professor Patricia Newcomb, College of Health Sciences and Technology

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Signature of Thesis Candidate   Date

Abstract

The Internet has become the most useful channel for people to access information. Many websites have very useful or comprehensive content. However, some users are not willing to read them, because they feel overwhelmed by reading text-based websites. User-experience design plays a crucial part in building a bridge between users and the website. With a good design, websites make the user experience more enjoyable. This thesis is about applying the user-centered design method (UCD) to websites about perinatal depression.

Keywords
User-Centered Design
User-Experience Design
Interaction Design
Information Design
Gamification Experience
Perinatal Depression

Project Link
http://www.jennyandjiaying.com/#!jourey/c1dyh

Table of Contents

1. Introduction

1.1 Problem

Depression during pregnancy is not an unusual phenomenon. According to a survey, 12.7% of pregnant women reported depression during pregnancy [1]. Many pregnant women and their family members do not know that many women may suffer from depression during pregnancy, which can often cause conflicts and misunderstanding.

I found some pregnant women, along with their families, who want to read medical education information from websites or books. However, it often causes them to feel stressed. Often there is too much professional information that they may not understand, or the websites have too much text, and they do not want to stare at the screen to read small text, so ultimately they just give up.

1.2 Solution

In order to encourage pregnant women and their family members to read useful information about perinatal depression, I designed a website called JOURNEY, which makes information simple and engaging, by applying the user-centered design method (UCD) to perinatal depression website design.

2. Content Research

Depression During and After Pregnancy

http://mchb.hrsa.gov/pregnancyandbeyond/depression/index.html

This is a handout published by U.S. Department of Health & Human Services. This resource introduces depression that occurs during and after pregnancy, symptoms and treatment.

Edinburgh Postnatal Depression Scale (EPDS)

http://en.wikipedia.org/wiki/Edinburgh_Postnatal_Depression_Scale

The 10-question Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way of identifying patients at risk for perinatal depression. The Edinburgh Postnatal Depression Scale is a widely used depression screening tool, which has been adapted and translated into many languages.

3. Design Methodology

User-centered design (UCD) is a design method that aims to satisfy users' needs and current behaviors when using the products, rather than forcing users to change their behavior when they are using the product. This design also can be implemented to ensure that the website maintains a great user experience [2]. Before designing a website, conducting user research is essential to understand a user's tasks, goals and needs.

3.1 UCD Design Process

UCD design process includes conducting user research, building persona and creating a concept. Based on the research and findings, the next step is to design the user flow, wireframes and interface design. During each step of the design process, it is important to collect user feedback and iterate design instantly. Below is a timeline according to UCD design process (*Figure 3-1*).
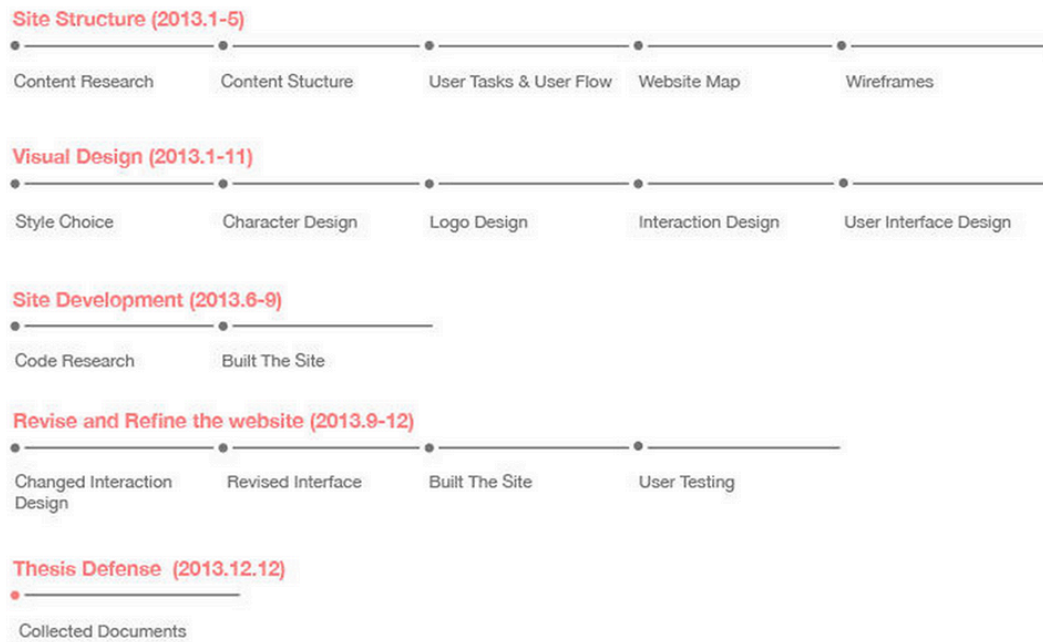
Figure 3-1
Design process and timeline

3.2 User Research

I asked my friends who had experienced depression during pregnancy, and I also joined a local group for pregnant women in order to better understand their feelings.

Some of the pregnant women stay at home and are unhappy. They are not willing to learn about what happens during pregnancy and gradually lose interest in most activities [3]. However, some of them like to play games on their computer or on their iPad at home (*Figure 3-2*).
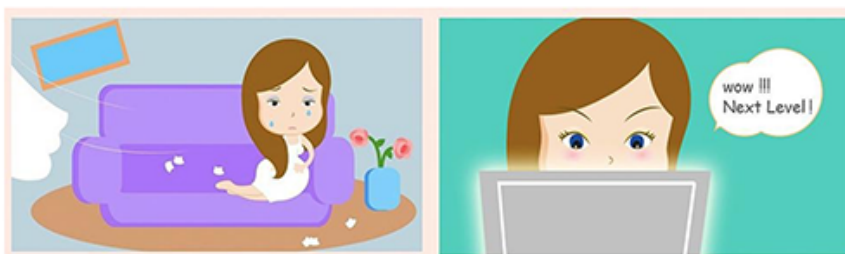

Figure 3-2
Based on my observation, many pregnant women like to play games
at home to reduce stress.

3.3 Persona

Based on the user research, I created a persona, which represents the target user, including a name and picture, roles, goals and tasks. A persona helps designers consider every aspect of a user and think deeply about users' psyches and what motivates them [4].

Basic Information

Name: Nina Zhang
Age: 27
Status: Married
Occupation: Designer (quit working because of pregnancy)

Behavior

- Experiences mood swings
- Plays computer games at home
- Feels alone
- Gradually loses interest in everything

Needs

- Hopes to learn about depression during pregnancy

Frustration

- Feels that it is hard to understand knowledge from professional medical books
- Hopes to experience more care and understanding from family members

Goal

- Nina wants to find a simple way to learn knowledge about depression during pregnancy

4. User Experience Strategy

Based on my observations, some pregnant women enjoy playing computer games at home. Also, organizers of some pregnant women groups provide knowledge of pregnancy through games and activities, by which participators can gain knowledge and also share their feelings and experiences with others. In order to design an engaging user experience, I studied the gamification concept, storytelling methods and emotional design.

4.1 Gamification

Gamification uses game thinking and game mechanics in a non-game context to improve user engagement. One of the approaches of gamification strategies is to give rewards and motivations for players to accomplish tasks. Another approach is to make existing tasks more like games [5]. The gamification of learning is widely used in education to motivate students to learn by using game design [6]. By using gamification experience, the website is more engaging and motivates users to learn the website content.

4.2 Storytelling

Storytelling is a means for sharing and learning experiences. Human knowledge is based on stories. The human brain consists of cognitive machinery necessary to understand, remember, and tell stories [7]. By using a storytelling method, information is conveyed through images, scenes, and character dialogues. When users read the information, the content may feel more approachable and more interpersonal.

4.3 Emotional Design

Emotion plays an important role in humans' ability to make decisions. There are three levels of design that influence people when processing the desire for a product: visceral, behavioral and reflective. The product also has a personality [8]. Studying emotional design is very helpful in building an emotional connection with users.

5. Website Design

5.1 Information Architecture

The website has four main selections:

- Introduction of depression during pregnancy
- Depression during pregnancy screening test
- Information from organizations that help pregnant women who suffer from depression
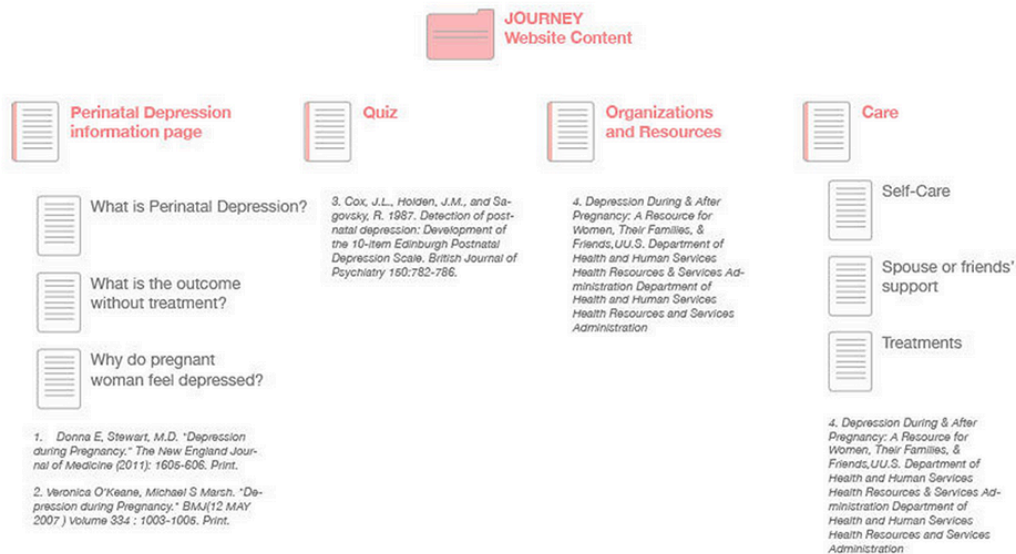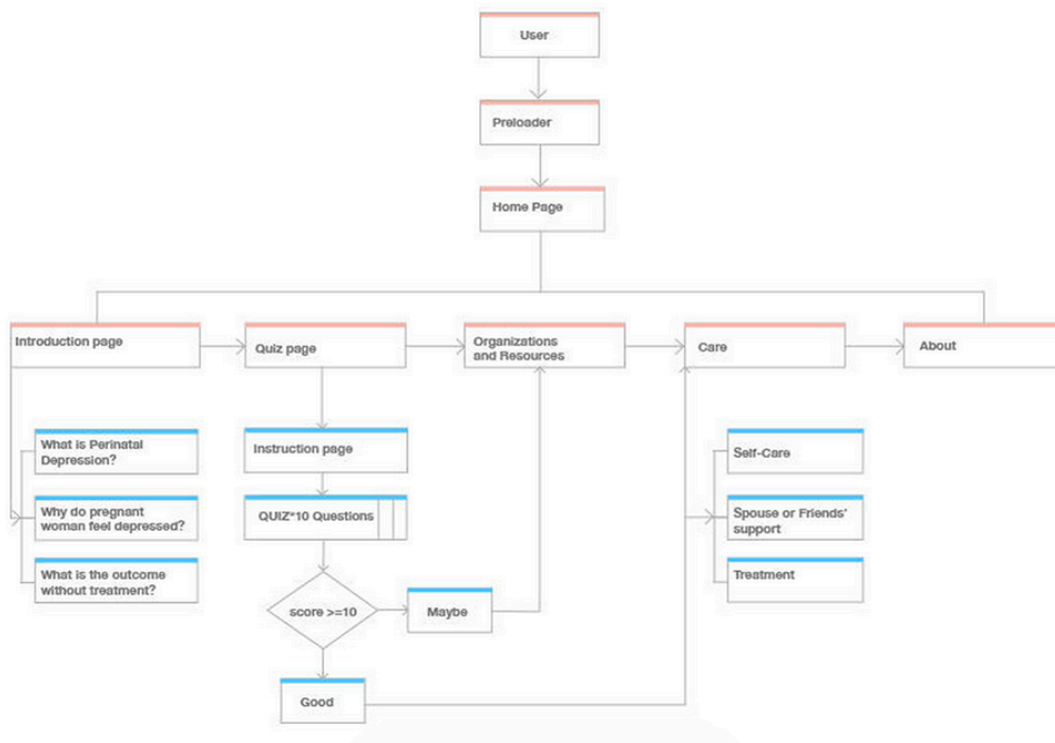- Care and treatment information

Figure 5-1
Website content and structure

5.2 Wireframe

Wireframes help designers to build paths between pages, keep design consistency throughout the pages and determine functionality/information
in the pages [9]. Based on the website content and user flow, I designed wireframes. During this process, I tried different ways to allow users to navigate the site seamlessly (*Figure 5-3*).
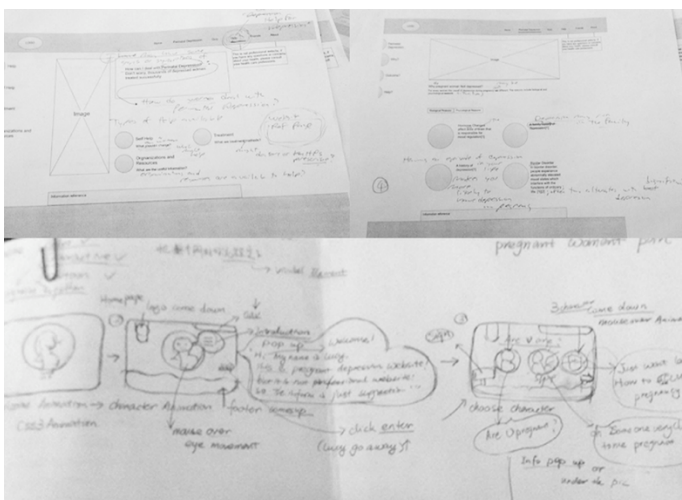

Figure 5-3
Wireframe drafts

5.3 Character design

Compelling characters are very useful on E-learning websites. Characters may help learners feel emotionally connected to the content [10]. I created a cute character to convey a positive and optimistic experience, so that pregnant women would feel good while viewing the information. I searched online for images of pregnant women, summarized their characteristics and tried different character design styles (*Figure 5-4, Figure 5-5*). I used baby's face to character design, because the baby's look evokes a sense of trust and love [11].

Figure 5-4
Character drafts and different character styles

Figure 5-5
Final character design

5.4 User Interface Design

My goal for the user interface design is to facilitate users to finish the online screen and also understand the content more easily. User Interface Design makes an essential impact on users. According to emotion design concept, there are three levels of design that influence people processing a product: visceral, behavioral and reflective. Visceral design is about appearance, the impression of a product [8]. Typography and graphic design improve website aesthetics and also support website usability. Design aesthetics may influence user performance and enhance user experience [12]. In order to make the website more interpersonal and closer to the users, I used a character to introduce information. The website will have a personality and build an emotional connection with users.
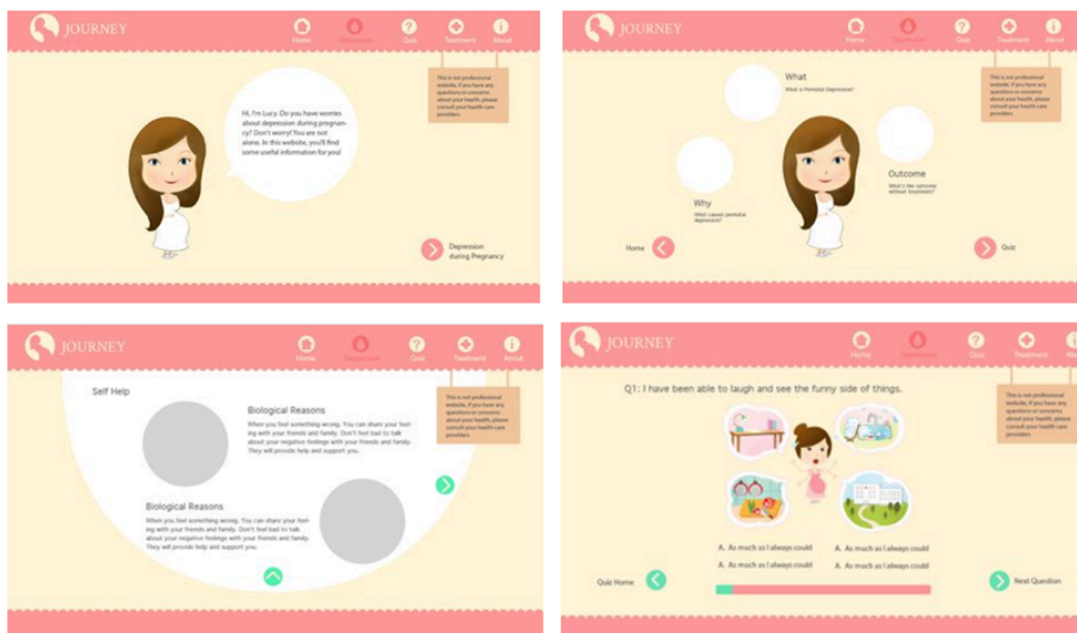

Figure 5-6
Website mockup I

After I designed the first version of the interface design, I asked the opinion of my professors and peers. The feedback was that the website lacks attractiveness and creativity, because the same background was used across all pages (*Figure 5-6*).

It led me to rethink my project and content. Pregnancy is a journey for every new mom. Each may experience different emotions during this process. Navigating a website is also a journey for users. Each reads different content from the website.

According to this concept, I designed different themes according to the content of each page of the website.

Figure 5-7
Mockup drafts II

For the second version of the interface design, I tried using different backgrounds for each page. The web pages became more interesting, but the background distracted users from the content according to users' feedback (*Figure 5-7*).

Figure 5-8
Mockup drafts III

In the third version of the interface design, I used a single color for the environment, so that the content would stand out. However, the background silhouettes still distracted users' attention from the content (*Figure 5-8*).

Figure 5-9

Final homepage interface design

Figure 5-10

Final introduction of depression during pregnancy *interface design*

After many iterations, I simplified the interface, reduced background elements, and used several harmonious colors. The interface is now engaging and also makes the content stand out (*Figure 5-9, Figure 5-10*).

5.5 Color Scheme

Color is as an important factor that influences users' emotions and perceptions of a website [13]. I studied maternity and baby products' packaging designs, and website design. I summarized color schemes. Wheat yellow is often described as cheery and warm. Coral pink is associated very strongly with youthful femininity. Lake blue is often described as peaceful and secure. According to research, pregnant women prefer soft colors, because as they experience hormonal changes, their vision becomes more sensitive [14]. I chose soft colors as the website color scheme (*Figure 5-11*).

Figure 5-11
Color scheme

5.6 LOGO Design

The logo representing this website and the goal of logo design is to help users understand this website's themes instantly. I studied Isotype (International System of Typographic Picture Education), a method of showing social, technological, biological connections in pictorial form [15]. I used an iconic image to represent the website, and brainstormed three different directions (*Figure 5-12*).
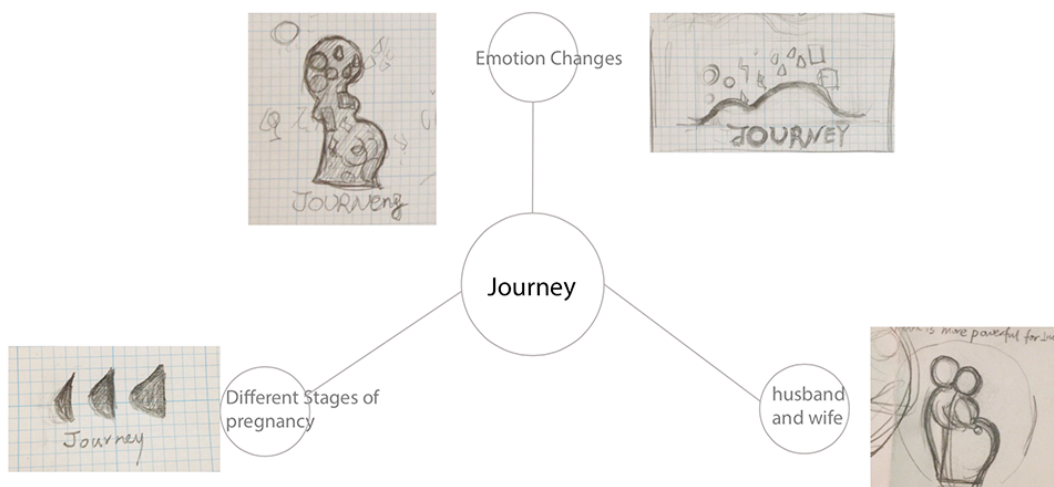

Figure 5-12
Brainstormed three different directions

After discussions with my professors and peers, I determined that a pregnant female figure is the best to represent the website theme, and also according to research, the human brain can process images immediately [16]. So when users see the logo, they can quickly understand the website's theme (*Figure 5-13*).
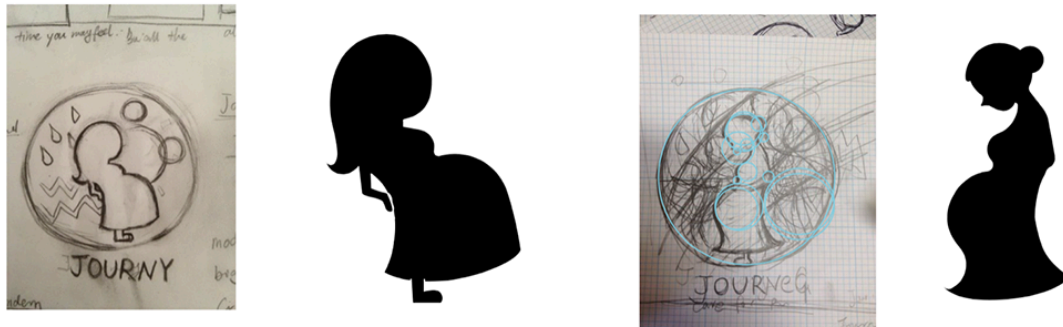

Figure 5-13
Different 'pregnant woman' styles

Because the website's theme is perinatal depression, I used different graphical elements to represent a depressed pregnant woman's complex emotions (*Figure 5-14, Figure 5-15*).
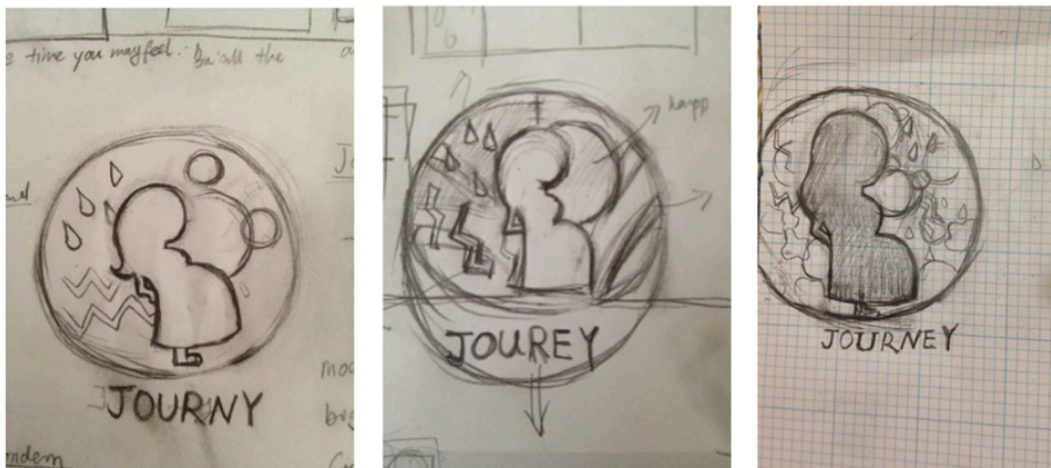

Figure 5-14
Different abstract elements to represent emotional changes

5-15
Different color and different combinations

My professors commented that the logo looks too complex, and the pregnant woman's figure is hard to recognize, which deviates from the goal of the logo design. I removed all other elements and simplified the logo, so that users are able to perceive the meaning of the logo immediately *(*Figure 5-16).

Figure 5-16
Final logo design

5.7 Depression During Pregnancy Screening Test Interaction

The website's main function is to let users complete a perinatal depression screen test. However, the paper test usually makes users feel cold and reluctant to fill out the test. In his TED talk, innovator Thomas Goetz recommends using technology to help make health decisions. He discusses the issues surrounding medical data, and how redesign of medical data can power the drive to behavioral change [17]. I was inspired by his talk and used images to indicate the questions to motivate users to fill out the test, and to help users feel comfortable while filling out the test.

The perinatal depression test's options are listed based on the different scores. Below is an example question from the Edinburgh Postnatal Depression Scale (EPDS) [18].

4. I have been anxious or worried for no good reason
   ☐ No, not at all
   ☐ Hardly ever
   ☐ Yes, sometimes
   ☐ Yes, very often

Figure 5-17

Question example

My idea is to use different images that relate to each option. When users make selections, the images will change according to their selection. Users will get visual feedback immediately that confirms their selections.

In the beginning, I used the slider bar to represent different options *(*Figure 5-18). However after I discussed this with my professors, I realized that the slider bar is normally used for different percentages and is not an appropriate way to indicate a selection.

Figure 5-18

Users slider bar to select options

For the second version of the design, I changed the slider bar into a radio button *(*Figure 5-19). When users select their option, the image on the top will be changed. The option's meaning will be reflected in the image. The users will get feedback this way.

Figure 5-19
Question interface design

In the local navigation on the left, the selection result will be displayed and users can view their selection directly. Users are able to edit their selections by clicking each question's navigation.

5.8 Visual Storytelling Methods to Introduce Information

Some people find it hard to read medical information because of the professional terms and expressions. By using visual storytelling methods, the content will be conveyed to users quickly. Visuals also evoke human emotions by improving user engagement and leading to more profound changes in behavior [19]. I used images to display various reasons why pregnant women become depressed and how to care for them, so that users can understand the content easily.

In the first version of the interface design, I used iconography to display different information (Figure 5-20). But the feedback from my professors was that too many images would distract users' attention, and users would find it difficult to focus on each piece of information. In addition, some icons did not show the information correctly, which would make users misunderstand.

Figure 5-20
Design drafts

For the second version of the interface design, I iterated the design. I selected one piece of information and created a story to display the information visually, so that users can understand the content easily and to evoke emotional connection (Figure 5-21).
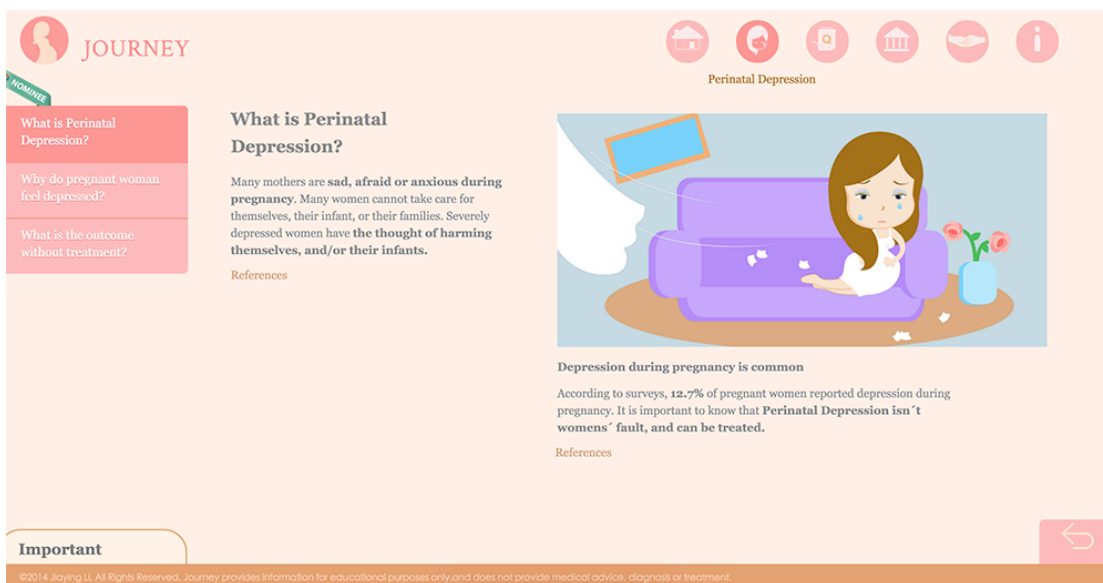

Figure 5-21
Final interface design

6. Technology

The website applied gamification to user experience. HTML5, CSS3, JavaScript and JQuery provide great animation effects and multimedia experience for implementation. Some of the code examples are in Appendix B.

7. User Testing

Because this website theme is sensitive, I was not able to invite real depressed pregnant women to test this website. I invited my professors and my peer classmates to test this website.

I used the questionnaire to test users and also observed users' behavior while they used the site. The questions assessed degree of user friendliness and ease of use, as well as users' overall satisfaction. By my observations of user's behavior, I could see the website's intuitiveness and the users' appreciation of this website.

Based on user testing feedback, I found these problems:

Homepage
- Users did not know where they should click.

Screening test page
- Users did not know how to go back to the previous page.
- Users' next button is far from the users' vision, so users often ignore it.

Based on user testing, I addressed each problem. I added "Go" and an arrow to indicate where users should click *(Figure 7-1).*

Figure 7-1
Introduction of depression during pregnancy page

I added a return button to indicate how the user can go back to the previous page, and also moved the "Prev/Next" button closer to the questions, so that users could see the button easily *(*Figure 7-2*)*.
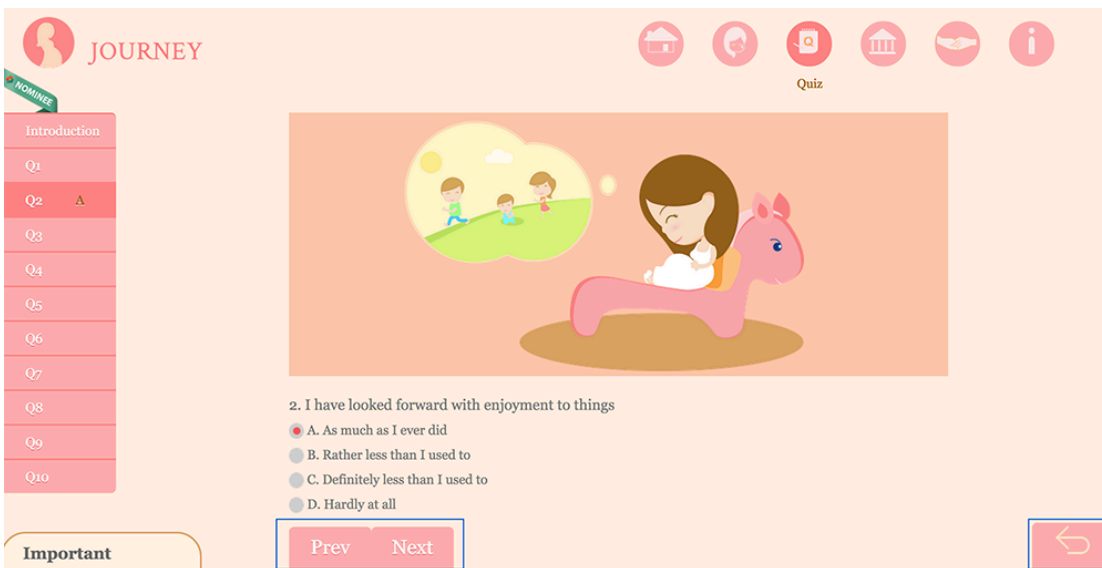

Figure 7-2
Question page

8. Conclusion

Throughout this project, I studied design methods, design principles and development languages. I learned how to apply the user-centered design process to the project and also how to use color psychology, visual storytelling, gamification experience and character design to improve user engagement.

I studied HTML5, CSS3, JQuery and JavaScript to implement the website, including object-oriented technique, test calculations and animations. The user testing helped me to identify the problem and also to iterate the design to make the design better.

While design methods and techniques are important for designing the project, time management and planning also play important roles in completing a project. I learned how to set a good plan based on priority and discussed my design with professors weekly, so that I could iterate designs promptly (in 24 hours) and complete the project on time.

User experience design is a language that communicates to users. To best persuade users, it is essential to deeply think from the user's perspective and consider every aspect of user experience.

Today, with the increasingly rapid pace of life, users are more likely to employ the web and applications to gain information. User experience design is in demand to enhance user engagement and increase user efficiency. Products will become more personalized and smart. There is much potential in exploring user experience design.

9. Awards

AWWWARD nomination

Feb 2014 A nomination for a AWWWARD Design Award

CSSDA nomination

Feb 2014 A nomination for a CSS Design Award WOTD
(Website of the day)

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"The UK Government Needs a Strategy to Meet the Scale of the Challenge. Their Current Plan Isn't Good Enough.Help Us Tell the Food Ministers to Change This and Act Now." WWF. Accessed May 13, 2012.
http://assets.wwf.org.uk/custom/foodstory/.

11. Appendix

11.1 Appendix A-Thesis Proposal

Rochester Institute of Technology

A Thesis Submitted to the Faculty of the College of Imaging Arts and Sciences in candidacy for the Degree of Master of Fine Arts

Depressed Pregnant Women: using an interactive method to inform people about depression during pregnancy information

by Jiaying Li
Oct 10,2012

Abstract

"Caring for Depression Pregnant Women" is an interactive graphics design project that uses interactive methods and data visualization to show information about depression during pregnancy.

Problem Statement

Pregnancy is a big event in every mother's life. Having a baby is supposed to be exciting for the family, but quite often, women feel depressed during pregnancy. Based on data and observations, between 12.7% of women is depressed during pregnancy[1]. There are many reasons that trigger depression during pregnancy, including internal and external causes, such as hormonal changes, morning sickness, mood swings, and anxiety about losing the baby. Another aspect that makes pregnant women feel pressured is that they need to learn about new things. Neither they nor their families know why they are feeling sad, depressed or in a bad mood. Understanding the cause of depression would lesser the pressure that would trigger conflicts.

Women commonly learn about pregnancy from pregnancy classes, books, TV, and websites. I am thinking about how I can use interactive methods to reduce the information overload and also bring some fun to the situation.

Websites about pregnancy are common. Most of them are focus on how to care about the baby, such as fetus development, food choice, etc. It is rare to find a website that focuses on women's mental health during pregnancy. Popular websites for pregnancy are kellymom (http://kellymom.com/) and baby center (www.babycenter.com). They have vast quantities of information,
but these website are not designed to consider the user's emotional state. Popular websites also accommodate how users process information.

I am targeting the pregnant women who want to gain information about depression during pregnancy from the web, ranging from ages 20 to 35. These women are an Internet generation and generally learn information from the Internet. I plan to use organized and understandable information by using color psychology and interactive

story telling methods. My goal is to give users a good learning experience. They can get the idea quickly and in an interesting way.

Survey of Literature

Book

Emotional Design

by Donald A. Norman

2005

This book introduces how emotion plays an important role in the human ability to make decision. There are three levels of design that influence people while processing a product: visceral, behavioral, and reflective. Visceral design is about appearance, the impression of a product. Behavioral design is about look and feel, the users' experience of using a product. Reflection is about how users think after using a product.

Design for everyday things

by Donald A. Norman

2002

This book introduces how design communicates between objects and users. The author describes the psychology behind a good or a bad design by using users case studies.

Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules

by Jeff Johnson

2010

This book introduces how to design intuitive UI design based on human cognitive psychology. In order to make UI efficient and convenient for users to use, it is essential to understand the human perception and human behavior.

User-Centered Design: A Developer's Guide to Building User-Friendly Applications

by Travis Lowdermilk

2013

This book introduces how to use user-centered design methods to create an engaging user experience. The author also introduces how to apply design principles and considerate usability into user experience design.

Pregnancy Blues: What Every Woman Needs to Know about Depression During Pregnancy
by Shaila Kulkarni Misri M.D.
2006
This book introduces the symptoms, the causes of depression during pregnancy, and also discusses treatments. It is a helpful self-test and resource.

Website
Slavery Footprint
http://slaveryfootprint.org/
Slavery Footprint is an online survey website that asks and responds to the question, "How Many Slaves Work For You?" The site is used by CSS3 animation effects and Jquery which gives the user an engaging experience.

Kick My Habits
http://www.leedsbuildingsociety.co.uk/resources/kick-my-habits/
Kick my habits is an online survey website which asks users questions about users habits. This website is developed by HTML5, CSS3, Jquery, and JavaScript. The website's graphics are changed based on users' selections.

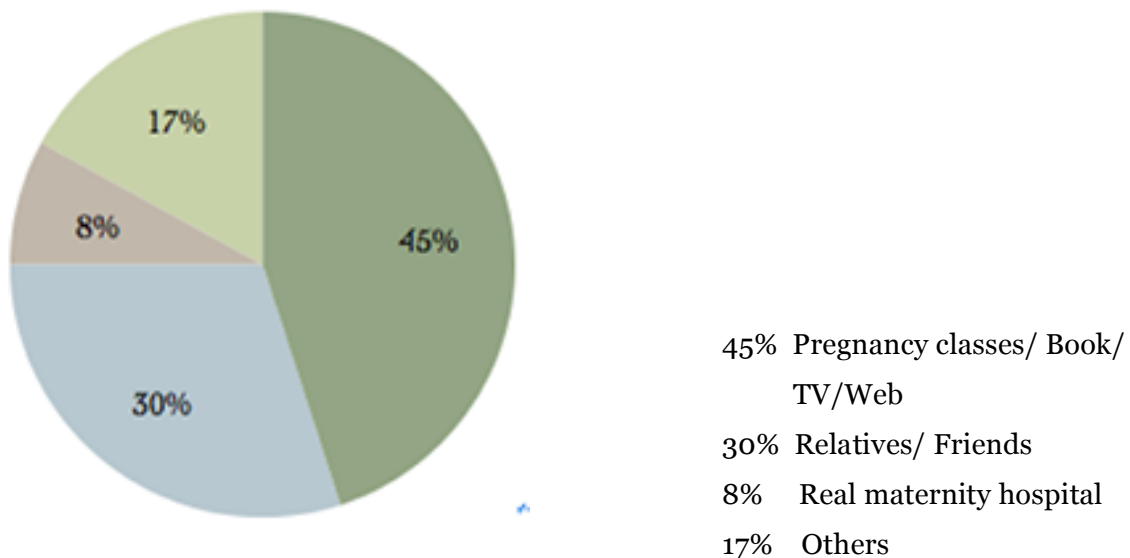### Food Story
http://assets.wwf.org.uk/custom/foodstory/
Food story is a website which introduces how humans can take actions to make environment better. The images will be changed when users use the slider bar. By using clever interaction, users will understand that their action would make a difference on the environment.

Research and Study

In order to design a good website, I are studying human learning process. Humans process information through the encode process, which includes the code from sensory input, such as visual, acoustic, and semantic[2]. For my project, I will use visuals and graphics to communicate with users. In addition, visuals can overcome barriers, like different languages. It can also help users memorize the information more easily.

How Pregnant Women Get Information:

45% Pregnancy classes/ Book/ TV/Web

30% Relatives/ Friends

8%   Real maternity hospital

17%   Others

As (Figure-1) showing, pregnant women mainly get information from book, TV and web[3].

Figure 1

Investigation of the knowledge needs for different periods in pregnancy
Xiuzhen, Fee
Chinese Nursing Journal , Volume 41, Number 9, September 2006

Design Ideation

While I was designing my website, I saw a TED video about Redesigning Medical data[4]. How to use data changes human behaviors. Good medical data design could raise patients 'awareness about their health status. I think this idea is very helpful for my website design.

My design idea: First, a pregnant woman will do a screening test about whether she has depression symptoms. Then, she will choose what trimester she is in. Finally, the website will show what factors can trigger pregnant women depressed, and will provides suggestions about coping.
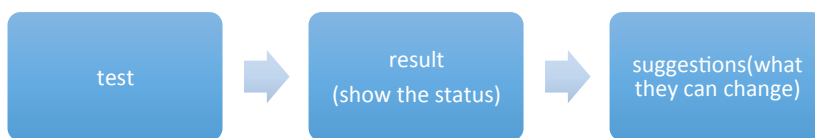
Figure 2
Screen test user flow
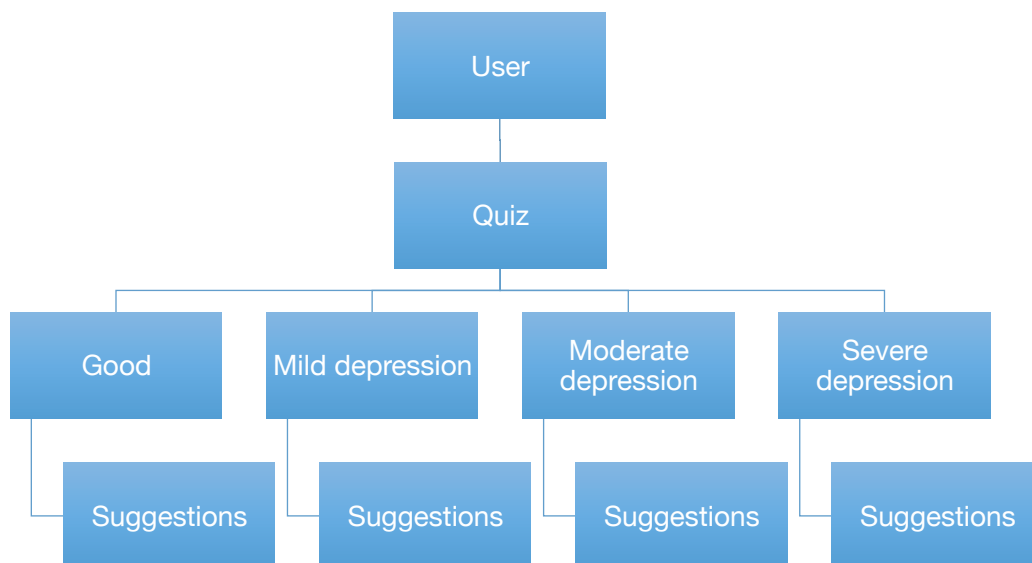
Figure 3
Screen test user flow

Design component

Design website logo

Pregnant women character design

Icons

Storytelling Images

Visualize the screen test questions

Visualize different triggers of depression

Visualize suggestions for different degrees of depression
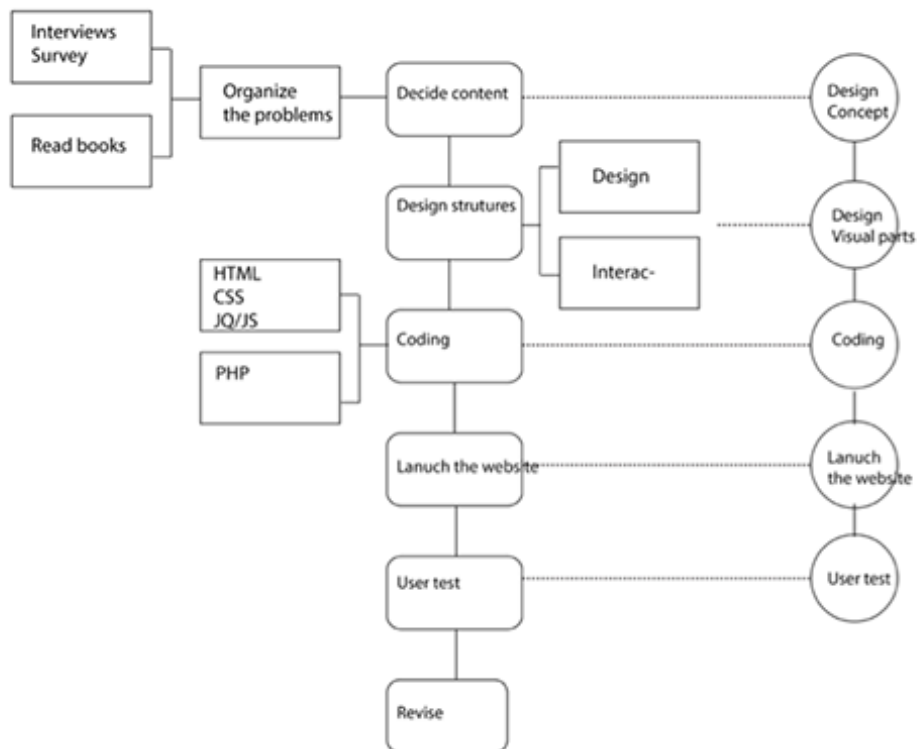
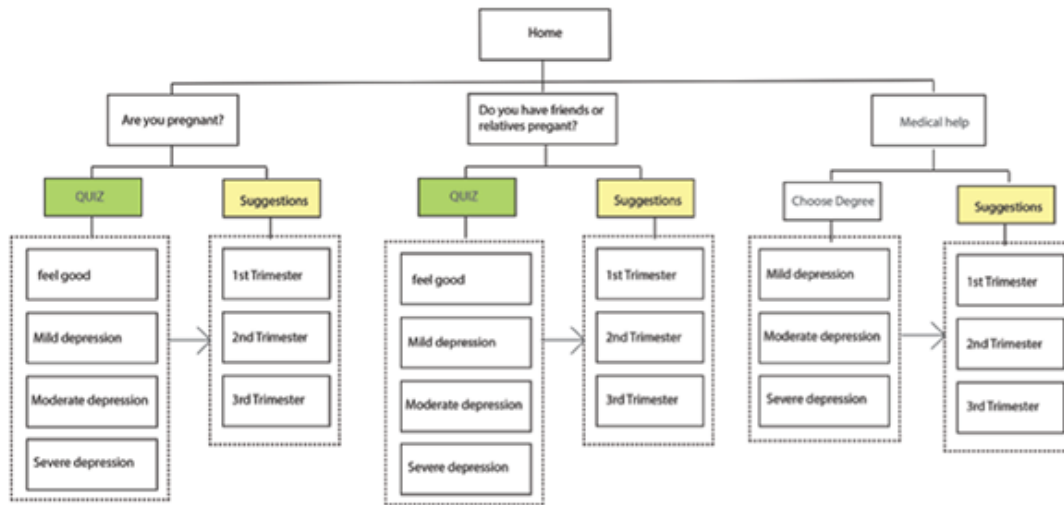# Flow Chart

Figure 4

Flow chart

Website Map

Figure 5
Website map

Design Interface Drafts

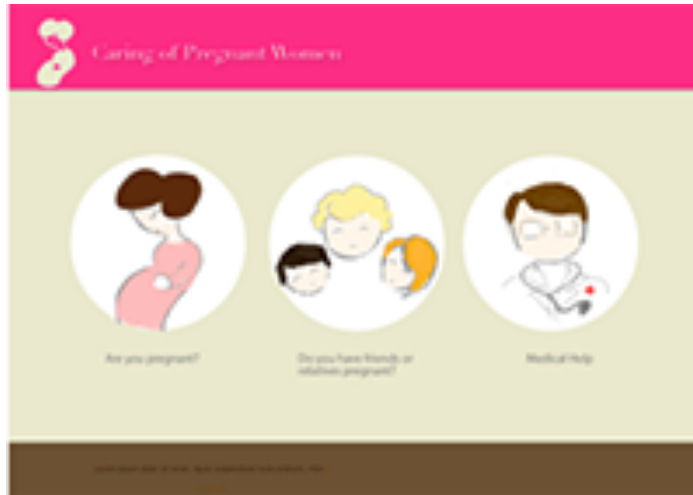Step1: Choose who you are: a pregnant woman, a friend of pregnant women, or do you want to see some medical help?

Figure 6
Homepage

Step2: If you choose "pregnant woman", you can select to do a Quiz or see some suggestions.

Figure 7
Quiz page

Step3: If users select the quiz part, it will show 6-10 questions to test whether the pregnant woman has symptoms of depression.

Figure 8
Question page
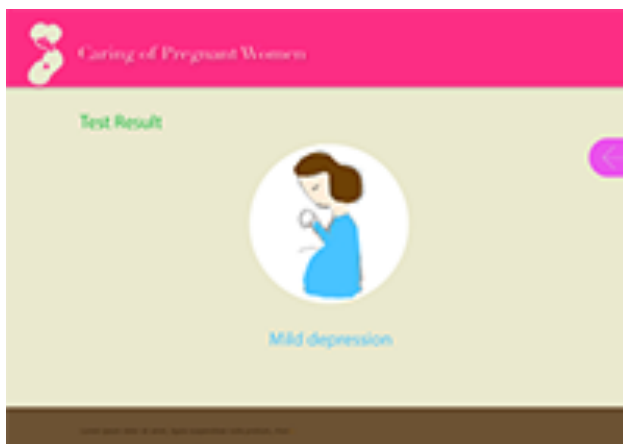
Step4: The result will show up.

Figure 9
Result page

Step5: After showing the degree of depression, you can choose what pregnant trimester are you?

Figure 10
Pregnant trimester page

Step6: If you choose First Trimester, there are some reasons why you feel depressed and provide suggestions.

Figure 11
Reason page and suggestions

Methodological Design

I am using interactive storytelling methods and information visualization, user-center design and E-learning methods.

Target Audience

This website mainly focuses on pregnant women and people who want information regarding pregnancy.

Gender: Mainly female

Age:20-35

Language: English

Personas

Based on my observation. I designed three personas.

Christina - in early stages of pregnancy

She is 24 years old. She likes surfing on the Internet, reading news and online shopping. She just got married and soon found out that she is pregnant. She is very excited and happy. She does not have any experience about pregnancy and knows nothing about pregnancy. Her husband also does not have any experience about pregnancy. She is experiencing the mood swings and pregnancy symptoms. Sometimes she cannot control her feelings, she thinks it is her fault, and her husband does not understand why she changing moods quickly. This website may help them to learn about pregnant women mental health and how to take care of depressed pregnant women.

Lisa-In the second trimester

She is 28 years old. She quits her job because of pregnancy. She went through the exciting time in early stages of pregnancy and is going to the second trimester.

She is always at home and takes care of herself and husband. She is experiencing big changes. She sometimes becomes sentimental, sometimes gets bored, and sometimes burst into tears. She used to like to hang out with friends, read books, shop, and paint. However, after pregnancy, she gradually lost interest in what she usually likes.

She feels lonely, because no one understands her, and her parents are far away. Now, surfing the Internet is her only way of having fun. She wants to change her emotional state and become more positive. She wants to get more information about how can she change and whether she has symptoms of depression.

James-His wife has depression symptoms
He is 30 year old. His wife is pregnant and he thinks his wife changed a lot. He thinks his wife is depressed. He cares about why his wife changed, and he wants to take care of her.

Implementation Strategies

Decide the content of website
Design graphic elements
Website map
HTML, CSS, JavaScript, JQuery for website coding part

I took the web design course last quarter and this quarter. I learnt HTML, CSS, and a little JavaScript, JQuery.

I will keep on learning HTML5 to know the technology better. I will ask professor Jeff and Dean from the IT department for technical help. I also can learn from books or website.
My backup plan is to use flash to build the website.

Evaluation Plan

Pregnant women are a special group. I will contact some pregnant women's groups online. I will do online surveys. I will also interview some pregnant women.

My analysis of the feedback will be qualitative and quantitative. After the user test, I will modify the website based on the problem I found.

References

1. Donna E. Stewart "Depression during Pregnancy." The New England Journal of Medicine, November 1, 2011.

2. McLeod, Saul. " Information Processing." Cognitive Approach in Psychology. Simplypsychology, 2008. Web. 19 Sept. 2012. <http://www.simplypsychology.org/cognitive.html>.

3. Fee, Xiuzhen. "Investigation of the Knowledge Needs for Different Periods Pregnant Women." Chinese Nursing (2006)Print, Journal , Volume 41, Number 9.

4. Goetz, Thomas. "It's time to redesign medical data." Lecture, TED from TED, January 1, 2011.

11.2 Appendix B-Code Example

HTML5

I used <section> to write each page's HTML code, and used JavaScript to control different sections, which improves user experience, due to reduce the loading time.

Figure 7-1

HTML5 code example

JQuery

I used JQuery to write the uses screen test parts, calculates and validates their answers.

```
46          check: function(e, t, n, r) {
47              $(r).empty();
48              var i = document.getElementById(t);
49              var s = i.getAttribute("data-selection");
50              $(r).text(s);
51              if (e == 0) {
52                  $(n).removeClass("a b c d");
53                  $(n).addClass("a")
54              } else if (e == 1) {
55                  $(n).removeClass("a b c d");
56                  $(n).addClass("b")
57              } else if (e == 2) {
58                  $(n).removeClass("a b c d");
59                  $(n).addClass("c")
60              } else if (e == 3) {
61                  $(n).removeClass("a b c d");
62                  $(n).addClass("d")
63              }
64          },
```

Figure 7-2

JQuery code example

```
77          validateForm: function() {
78              count_int = document.getElementById("number_of_questions").value;
79              for (var e = 1; e <= count_int; e++) {
80                  if (!journey.isChecked(e)) {
81                      fLabel = document.getElementsByName("q" + e).item(0).getAttribute("title");
82                      if (fLabel == null) fLabel = e;
83                      alert("Please answer question " + fLabel + ".");
84                      return false;
85                      break
86                  }
87              }
88          },
```

Figure 7-3

JQuery code example

```
475         sum: function() {
476             var e = 0;
477             var t = 0;
478             journey.validateForm();
479             var n = $("#question1 input[type=radio]:checked").val();
480             var r = $("#question2 input[type=radio]:checked").val();
481             var i = $("#question3 input[type=radio]:checked").val();
482             var s = $("#question4 input[type=radio]:checked").val();
483             var o = $("#question5 input[type=radio]:checked").val();
484             var u = $("#question6 input[type=radio]:checked").val();
485             var a = $("#question7 input[type=radio]:checked").val();
486             var f = $("#question8 input[type=radio]:checked").val();
487             var l = $("#question9 input[type=radio]:checked").val();
488             var c = $("#question10 input[type=radio]:checked").val();
489             var h = Number(n);
490             var p = Number(r);
491             var d = Number(i);
492             var v = Number(s);
493             var m = Number(o);
494             var g = Number(u);
495             var y = Number(a);
496             var b = Number(f);
497             var w = Number(l);
498             var E = Number(c);
499             $("#result").empty();
500             var e = parseInt(h + p + d + v + m + g + y + b + w + E);
501             $(".resultss").empty();
502             $(".resultss").text(e);
503             if (e >= 10) {
504                 journey.goscreen("resultmaybe")
505             } else if (e < 10) {
506                 journey.goscreen("resultgood")
507             }
508         },
```

Figure 7-4

JQuery code example

CSS3

By using CSS3 animation, the website became more dynamic and engaging. Our brains and eyes pay attention to moving objects more easily. CSS animation could call attention to changes that hide or reveal information.

```
.image6.imageimge {
    opacity: 0;
}

.image6.imageimge.a {
    opacity: 0;
}

.image6.imageimge.b {
    opacity: 0.25;
}

.image6.imageimge.c {
    opacity: 0.6;
}

.image6.imageimge.d {
    opacity: 1;
}

.imageimgf {
    width: 300px;
    height: 200px;
    background-image: url(../img/q7-5.png);
    background-repeat: no-repeat;
    position: absolute;
    top: -50px;
    left: 500px;
    opacity: 1;
    -webkit-transition: .2s .4s cubic-bezier(0.3,.01,.3,0.3);
    -moz-transition: .2s .4s cubic-bezier(0.3,.01,.3,0.3);
    -ms-transition: .2s .4s cubic-bezier(0.3,.01,.3,0.3);
    -o-transition: .2s .4s cubic-bezier(0.3,.01,.3,0.3);
    transition: .2s .4s cubic-bezier(0.3,.01,.3,0.3);
}
```

Figure 7-5

CSS3 code example