Mobile App of Food Combinations- Medley for Mom

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MOBILE APP OF FOOD COMBINATIONS
- MEDLEY FOR MOM

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Thesis Essay
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Abstract

In the past, according to EFFECTS OF DIETARY INTERVENTIONS ON PREGNANCY OUTCOMES, “there were variations in the types of dietary intervention and the effects of specific nutrient components. There was no heterogeneity for dietary intervention components, but considerable heterogeneity for all dietary interventions combined.”[1] With the development of the society and the improvement of living conditions, people’s eating habits have become much more diverse. However, some food combinations could potentially bring discomfort, such as indigestion, constipation, among other issues.[2]

Due to individual differences in human digestive systems, some food combinations can be harmful to different population groups. Among those, pregnant women are particularly vulnerable.[3]

As Paul B. Thompson puts it, “there is little that extols the health benefits for both women and their babies of taking a health-based approach to eating during pregnancy. In the medical model, the woman is seen as essentially a barrier to fetal care, and her food choices understood primarily in terms of fetal risk.”[4]

Due to a cascade of endocrine effects throughout pregnancy, pregnant women become considerably more sensitive to various stimuli, including food. This necessitates that special attention should be paid to the diet during this period.[5] The aim of this research is to design a user-friendly mobile phone application that provides healthy food collocation guidance for pregnant women in real time, to let future mothers avoid potential discomfort arising from daily eating.

1. Introduction

Along with pills to prevent indigestion, modern medicine offers a variety of digestive and dietary aids for the stomach. However, in most cases, stomach discomfort symptoms arise from poor food combinations. Therefore, ignorance of specific rules of food combinability can lead to serious harm to our body and even be life-threatening for pregnant women.[1]

Although many and varied websites and phone apps addressing food combination are currently available, all of them have several limitations. The following three aspects appear to be most problematic.

First, most of the available websites and phone apps lack a thorough data system, which makes the information too sporadic to check and collect.[2]

Second, even when the existing websites and phone apps possess a relatively complete database, their interface designs are not user-friendly.

Last but not the least, the existing websites and apps do not target specific user groups. Therefore, the target audience of these applications is assumed to be general healthy population. However, it is obvious that people’s needs considerably vary depending on their personal health conditions. Moreover, these conditions can also change throughout time. In this context, targeting specific user group is essential to make the entire system more accurate and efficient.

[1]: Effects of dietary interventions on pregnancy outcomes: a systematic review and meta-analysis
1. Introduction

This project focuses on pregnant women. Given that only a prototype is presented in this work, the study will mainly address the first two limitations of the existing websites and phone apps outlined above. To this end, this research will focus mostly on (1) building a complete database and (2) providing a simpler, but more appealing user interface system.\[3\][4]

[4]: http://detoxinista.com/food-combining/
2. Review of Literature

In this section, I have highlighted books and Apps that are helpful to my research.

“食物相克”(Unhealthy food combination)
Producer: ZNTEAM

This is a Chinese mobile app that helps people to identify unhealthy food combinations. It is the best model available thus far.

1. Database
   The database of this app is fairly systematic but incomplete.

2. User interface
   The design is too simple, including not only the layout, but also the color range. Users can input a food’s name into the search bar, after which the main interface will display the results related to this food. By clicking on one of the results, the title of the combination and some text information of this improper food combination will be displayed. There are neither images nor icons in the interface, which deteriorates the visual efficiency of this app.

3. Customers
   General audience

The new book of food combining: a completely new approach to healthy eating
Jan Dries, Element Books Ltd, 1995

To the best of my knowledge, this is best book on food combinability available in the market. Jan Dries makes food combining easy and understandable for everyone. A reader can fully understand the subject, as the process of digestion is illustrated with comprehensive diagrams.
2. Review of Literature

**Icon Design: Graphic Icons in Computer Interface Design**  
*Steve Caplin, Watson-Guptill Publications: 2001*

Icon design is pivotal in today’s design environment. Being able to communicate an idea and concept through symbolism both simplifies and optimizes life of a graphical reader. Therefore, the key concept to the User Interface design is the icon and what it represents. The book explores the world of icons and symbols and logically presents all necessary ideas and tools to help readers build, develop, and design clear and impactful icons. This book has been an inspiration for the present researcher in terms of designing a user-friendly interface for the app presented in this work and has helped to make the entire system concise, clear, and attractive.

**“Mobile Design Pattern Gallery: UI Patterns for Mobile Applications”**  
*Publisher: O’Reilly Media. Final Release Date: April 2014*

This book focuses on the current mainstream mobile design, including Apple iOS, Android, and Windows Mobile, in the interactive design of some norms and precautions. The author summarizes the typical design of the typical applications. The strength of this book is that it integrates the existing product experiences, which allows for a more systematic use of different modules and provides a clearer understanding of the structure. However, considering that the Internet industry is ever changing, the book is not immediately relevant for the current mobile design environment.
3. Process

3.1 Implementation Strategies

1. Information collection
   Building a database of food combinations, including specifications of their advantages and disadvantages. While the scope of food combinations could be large, since the present project presents only a demo, the database used in the present study was not indeed large-scale. However, effort was invested to make it maximally systematic.

2. Visual identity design
   Including logo, icons, and whole process of the interface.

3. User Interface design
   Including flow chat, lay-out design.

4. Demonstration
   Including animation and part of operating procedures.
   (Using Proto.io to make the App demo
   https://proto.io/en/demos/)
3. Process

3.2 Visual identity design

At first, based on the concept of mother's love for her baby, the phone application was named “Eat for baby”. In the logo design, the concept was based on the first letter, a handwritten “E”, represented a profile view of a pregnant woman’s body. Then, in the “belly” position of the design, a heart-shaped symbol was added to refer to the mother’s love for her baby. Finally, a soft and friendly baby pink color was selected.

However, the first version was too simple and not immediately clear to the user. Therefore, in the second version of the design, “E” was made lay down, in a shape resembling that of a cloud, to represent peace and easiness. On the top, a baby's face was added so that the logo looks more stable and makes a direct reference to mother and child products.
3. Process

3.2 Visual identity design

However, based on the feedback with the present researcher’s advisors, this logo was found to be too complex, for the following reasons:
1. Over-focus on the baby (while the mobile phone application targets primarily pregnant women);
2. Too many colors;
3. The shape of the graphics is difficult to understand.

Therefore, the design was changed to focus more on pregnant women and food combinations.

The updated name of the application is “Medley for Mom”. The design concept also takes the use of the first letter “M”, the first letter of “Mom”, as the base of the app icon. Then uses the negative space design to represent a fork, on behalf of showing this is a diet application.

[1]: Logo design love: a guide to creating iconic brand identities; Chapter 3: Elements of iconic design
3. Process

3.2 Visual identity design

LOGO & Colors

Changing the format, make the logo more solid.

For the main color, the cream red hue was selected for the final version of the logo, which is more feminizing and also helps appetite. Secondary colors that are used include cream yellow, dark grey, and light grey. All these colors are soft and warm.

![Logo Variations]

<table>
<thead>
<tr>
<th>Color</th>
<th>Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cream Yellow</td>
<td>R: 240 G: 75 B: 50</td>
</tr>
<tr>
<td>Dark Grey</td>
<td>R: 88 G: 89 B: 91</td>
</tr>
<tr>
<td>Light Grey</td>
<td>R: 237 G: 238 B: 227</td>
</tr>
<tr>
<td>Cream Red</td>
<td>R: 241 G: 242 B: 242</td>
</tr>
</tbody>
</table>
3. Process

3.2 Visual identity design

*Grid rules*

Considering this is the logo of a mobile application, the design was further improved by letting the logo follow the iOS system grid rules. In the process, the shadow effect was first added, but then removed based on the results of the user survey (see Section 4.2).

[1]: The iOS 7 Design Cheat Sheet: http://iwomynstinen.com/blog/the-ios-7-design-cheat-sheet
3. Process

3.2 Visual identity design
Fonts

First, “Modulario” was used, because it is elegant and easy for reading.

Eat for Baby

However, with the improving of the logo, the font was changed to “Montserrat Bold”, as the edges of this font have more round corners, which makes it better suited for the logo.

Medley for Mom

The content font used is “Lato”. Overall, “Lato” has 2 different weights. This font is good for presenting information; furthermore, it also is user-friendly on a mobile screen. Therefore, two versions of “Lato” were used as the content fonts.\(^1\)

Lato Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

Lato Light

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

\(^1\): Logo design love: a guide to creating iconic brand identities: Chapter 11: 25 practical logo design tips
3. Process

3.2 Visual identity design

*Icon design*

The style concept of icons continues the style of the new logo, which is solid and includes negative space.\(^1\)[\(^2\)]

\(^1\): Icon design: graphic icons in computer interface design; Chapter 3: Pick and Choose
\(^2\): Icon design: graphic icons in computer interface design; Chapter 6: Designing Icons
3. Process

3.2 Visual identity design

*Icon design*

However, after the screen test, the negative space almost disappeared on the screen and much detail was lost. Besides, the purpose of icons is to share information, rather than shape, so that they were modified into an outline style, which is more clear and readable on a mobile screen.\(^1\)

\(^1\): Icon design: graphic icons in computer interface design; Chapter 6: Designing Icons
3. Process

3.3 User Interface design

Flow Chat

The original flow chart focused only on the searching function. Users can input 1 to 5 different food combinations and check the results.

However, after the data collection, it was that most of the results are articles and books,\(^1\) so the logical algorithm is to add tags to the corresponding articles. When the input keywords and tags are the same or associated, the app will display the corresponding results.

\(^1\): The Complete Book of Food Combining: A New Approach to the Hay Diet and Healthy Eating
3. Process

### 3.3 User Interface design

*Functions*

The initial idea behind this mobile phone application was to simply let users search for different food names and then provide them relevant results on these food combinations. However, after a discussion with the advisors, the function was finally determined as follows:

1. **Home page**
   - Display recommended and featured articles or books.

2. **Searching**
   - The user can enter one or more keywords at a time and get relevant results.

3. **Food list**
   - A list for common food; users can review all the content of a specific food.

4. **Books area**
   - Related books recommended, with the possibility to directly purchase them.

5. **Sharing**
   - Through the social platform, users can like the articles or books and share them with their friends.

6. **Personal pages**
   - Users can create their own accounts, save favorite articles or books; their home page information can be modified according to their own information, such as pregnancy interval, personal preferences, and so on.
3. Process

3.3 User Interface design

Wireframe design
3. Process

3.3 User Interface design

*Layout design*

In the original concept, users can input two or more names of different kinds of food in the search bar and then the corresponding icons will show up in the main interface. Users can take a quick search among branch of types of food and then the system will show all of the results on a non-recommended food combination. Also, users may drag one of these food icons to another icon and check the results.
3. Process

3.3 User Interface design

Layout design

However, after a discussion with advisors, it was concluded that, while animation effects were good-looking and interesting, the practicality was not satisfactory. Therefore, it was decided that showing the results directly would be a more efficient strategy. Since the proposed mobile phone application provides reference information, similarly to providing tips, the main design concept was decided to be in the “card” form. For the size, the iOS Design Guidelines\(^1\)[\(^2\)] were adhered to.

\[^1\]: Mobile Design Pattern Gallery: UI Patterns for Smartphone Apps; Chapter 7: Tutorials and Invitations
\[^2\]: The iOS 7 Design Cheat Sheet: http://ivomynttinen.com/blog/the-ios-7-design-cheat-sheet
3. Process

3.3 User Interface design

Layout design

Software using:
Adobe Illustrator; Adobe Photoshop
4. Summary

4.1 Demo display
*First version - Home Page*
4. Summary

4.1 Demo display
First version - Detail Page
4. Summary

4.1 Demo display

*First version - Media Page*
4. Summary

4.2 User survey

After the version of the design outlined in Section 3 was implemented, a user survey aiming to obtain user perceptions of the proposed app was conducted. The main conclusions of the survey are as follows:

1. The drop shadow effect is redundant; the navigation bar and icon colors are not very well coordinated.\[1\]

2. The position of the navigation bar is at the top, which causes inconvenience in one-handed operation.\[2\]

3. The detail page is too simple, and the content is low relevance.

\[1\]: Mobile Design Pattern Gallery: UI Patterns for Smartphone Apps; Chapter 11: Anti-Patterns
\[2\]: Designing for Large Screen Smartphones; Chapter: Designing for Thumbs
4. Summary

4.3 Refinements

Based on the results of the user survey (see Section 4.1), the following refinements have been introduced into the app.

1. Design style

Change the icon design and color combination, remove the drop shadow effect, simplify the layout.\[1\]

\[1\]: Mobile Design Pattern Gallery: UI Patterns for Smartphone Apps; Chapter 1: Navigation
4. Summary

4.3 Refinements

2. One-handed operation

The navigation bar was moved to the bottom; most function buttons were replaced to the comfort zone.
4. Summary

4.3 Refinements

3. Detail page

The navigation-dot bar was removed, the related contents section was replaced, and tags for each content item, as well as smiley or sad face icons to present good or bad diet, were added.

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Love eating persimmons?

Love eating persimmons?

Et quam aliquam ressim eaturitaecto optatur, nobit quae. Editae parchitem adiasi que everend lemand cor aut eos quam que none dicit estavello dicia?

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Etia ventota tibudosae nonseque non nullupia lat maximo enteris. Gliafull crempemem fugatur, exatus esti tan excepresi sit ommepetopu repualst.

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Love eating persimmons?

Love eating persimmons?
4. Summary

4.4 Final demo display
Proto.io
4. Summary

4.4 Final demo display

Proto.io
4. Summary

4.4 Final demo display

Proto.io
4. Summary

4.4 Final demo display

Proto.io
Conclusion

In this project, the following aspects have been significantly improved.

1. Visual design skills
   Different projects should have their unique design language, including the use of appropriate color and icons. Improvement of the logo should be based on the application’s features. Through the course of this study, this skill has been improved.

2. Interactive design capabilities
   By an in-depth understanding of the interactive design process, as well as acquisition of basic principles and comparing the proposed app with other similar mobile applications, the present researcher’s design capabilities have been significantly enhanced.

3. Importance of user feedback
   Throughout the design process, iterative feedback is the key to improving an app’s design. In this study, the results of user survey demonstrated that most pregnant women prefer single-handed operation. Based on the results of the survey, the interface was promptly improved.
Conclusion

A more detailed personal system could be added to this project, so that more customized recommendations are provided to different target groups of the app users. However, due to time constraints, this study provides only basic design ideas and a demo version of the app. In the future, further modifications should be implemented so that to make the proposed app perfectly fit the target audience and respond to the specific needs of pregnant women.
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