Promoting Health Through Digital Applications
Exploring Requirements for a User-Centred Health Website in Havana

LINN VIDÉN

© Linn Vidén
Mångfaldigande och spridande av innehållet i detta arbete – helt eller delvis – är förbjudet utan medgivande.
Att främja hälsa genom digitala applikationer: En undersökning av förutsättningarna för en användarcentrerad hälsowebblats i Havanna

Promoting Health Through Digital Applications: Exploring Requirements for a User-Centred Health Website in Havana

Linn Vidén

2017

This thesis explores requirements for a health website made to support Cuba’s and its people’s development, in terms of improved health and wellbeing, through access to user-centred online health information. The study uses semi-structured interviews to investigate how health information is accessed in Cuba today, the need for certain types of health information, and the role of the currently limited internet access in Cuba. The study shows that Cubans often turn to friends, family, and contacts to access health information, due to the slow process of accessing it through the local clinics and the limited possibilities of accessing it online. The study also shows there is a demand for a wider range of health information than what is currently accessible from official sources, in addition to health information that is adapted specifically to Cuban conditions. Employing research based around health website and low-bandwidth design, the study uses the requirements established from the interviews as a basis in the production of a development proposal for a Cuban, user-centred health website.

Kuba, hälsa, fältstudie, hälsowebblats, Havanna.
# Table of Contents

1  INTRODUCTION .............................................................................................................. 4
   1.1  BACKGROUND ............................................................................................................. 5
      1.1.1  Advantages of OHI and OHI use ......................................................................... 6
      1.1.2  Healthcare in Cuba ............................................................................................... 6
      1.1.3  Available Cuban health websites and their use .................................................. 8
      1.1.4  Problems of accessing internet ........................................................................... 9
   1.2  PROBLEM DESCRIPTION ......................................................................................... 10
   1.3  PURPOSE OF STUDY AND RESEARCH QUESTIONS ............................................... 10
   1.4  DELIMITATIONS ...................................................................................................... 11
   1.5  DISPOSITION ........................................................................................................... 11

2  EARLIER RESEARCH AND METHOD OF ANALYSIS ...................................................... 12
   2.1  MOTIVATIONS FOR ACCESSING OHI ................................................................. 12
   2.2  HEALTH WEBSITE DESIGN .................................................................................. 13
       2.2.1  Designing for health literacy .............................................................................. 14
   2.3  DESIGNING FOR SLOW NETWORKS .................................................................... 14
   2.4  SUMMARY AND ANALYTICAL TOOL .................................................................... 15

3  METHOD ......................................................................................................................... 17
   3.1  SEMI-STRUCTURED INTERVIEWS ......................................................................... 19
   3.2  SAMPLING AND PARTICIPANTS .......................................................................... 19
   3.3  COURSE OF ACTION ............................................................................................... 21
   3.4  ETHICAL CONSIDERATIONS ................................................................................... 23
   3.5  DATA PREPARATION AND ANALYSIS .................................................................. 23

4  RESULTS ......................................................................................................................... 25
   4.1  ACCESSING HEALTH INFORMATION .................................................................... 25
   4.2  OBSTACLES ACCESSING HEALTH INFORMATION .............................................. 27
       4.2.1  Participant suggestions for improvements ....................................................... 28
   4.3  DESIRED CONTENT FOR A CUBAN HEALTH WEBSITE .................................. 28

5  ANALYSIS AND DEVELOPMENT PROPOSALS ............................................................. 30
   5.1  FUNCTIONS ............................................................................................................. 30
5.2 CONTENT ...................................................................................................................... 32

6 DISCUSSION .................................................................................................................. 37
   6.1 LIMITATIONS ............................................................................................................. 37
   6.2 SUGGESTIONS FOR FUTURE RESEARCH ................................................................. 39

7 REFERENCES ................................................................................................................... 40
APPENDIX A: INFORMATION TO PARTICIPANTS ............................................................... 46
APPENDIX B: INTERVIEW MANUAL ................................................................................ 48
1 Introduction

This thesis describes the results of a field study conducted in Havana, Cuba, exploring requirements for a Cuban health website, developed to promote health and wellbeing through access to user-centred online health information (OHI).

Improving people’s access to health information, and their ability to use it to promote and maintain good health, is reported to have both personal and societal benefits (WHO, 2009). Cuban healthcare is already working with healthcare promotion and education today, possibly one of the reasons why Cuba’s health indicators are so good, even comparable to those of industrialized countries (Sixto, 2002; Campion & Morrisey, 2013). Yet the restrictions of freedom of speech and right to assembly in Cuba (Gustafsson, 2006, s. 314; Freedom House, 2016), might cause Cubans to experience a lack of certain types of health information (Ruger, 2005). As internet access expands in the country (Cuban Business Report, 2016, 2 February), a new possibility of increasing access to a wider variety of health information through online resources arises.

To develop such a resource – in the case of this study a health website – it is important to understand both your target audience needs and requirements for health information, as well as the contextual and environmental settings in which the website will be used (Siang & Dam, 2017). In the case of Cuba, this includes slow networks and limited bandwidth (Dye et al., 2017), elements that can impede access to website content (Pujari, Namdev, Siddheshwar & Prakash, 2016). To create good conditions for the use of the website, one also need to understand the factors in play that influence how users access and understand health information online, as health website design has been reported to affect both website use and usability (Sillence, Briggs, Harris & Fishwick, 2007a).

Thus, this study aims to explore requirements for a Cuban health website through investigating the current use of, and need for, health information by Cubans living in Havana, in addition to any obstacles experienced as limiting health information access, such as limited internet use.
1.1 Background

Late November of 2016 I got an e-mail from the University of Borås’ international coordinator, informing me that I had been awarded a scholarship to conduct a Minor Field Study (MFS) for my Bachelor’s thesis. The scholarship is financed by SIDA, the Swedish International Development Cooperation Agency, and is open to applications from students who wish to undertake an in-depth field study and to collect data in a developing country. I had applied to conduct my proposed MFS in Cuba – a country I had visited once before at twelve years old and wanted to return to, but this time as an adult with an adult’s perspective.

Accepting an MFS scholarship from SIDA means adhering to demands that the study must be of interest to the development of the country in question. At the same time, writing a Bachelor thesis for the Web content manager and designer programme at the University of Borås also comes with several specific requirements, not least that the work in some way must concern user-centred evaluation and development of websites. Thus, as a student in this programme, accepting the SIDA MFS scholarship I, in effect, accepted having two sets of requirements for my study that needed to be combined and balanced.

My programme’s requirement of centring the thesis around the topic of website development provided a given focus point for the study, while SIDA’s requirements provided the orientation. I chose to focus on health as my area of interest for development, as I myself have always had a personal interest in health questions and, during my last year at the Web development program, have also gained an interest in the prospect of working with digital applications to improve health or similar development areas. Knowing that internet access had recently begun to improve in Cuba, I saw the opportunity to explore how a health website could be developed to fit the current circumstances of a still limited internet, in addition to provide Cubans with health information that could have a positive effect on their lives, as well as Cuban society.

Before turning to the problem description, purpose and research questions, a more thorough presentation of contextual and background factors of relevance to this area of interest will be provided here in the background section. This is
motivated not least because of the many interests, stakeholders, and social and cultural differences that come together in this thesis work. I begin with a presentation of the advantages of online health information (OHI) and OHI use, followed by a brief background into the Cuban healthcare system. Also, a presentation of what current Cuban health websites are available for users of health information, as well as a description of possible obstacles of going online to access said sites, will be provided.

1.1.1 Advantages of OHI and OHI use
The internet has become an important medium in terms of health, increasing access and availability to a wide range of information, unbound by any physical restrictions of space and time (Rice, 2006; Jiang & Beaudoin, 2016). Health information online also has the advantage, compared to traditional, offline health information, of being easily updated and adapted to new conditions, such as ongoing viruses or season related illnesses, providing people with timely and accurate information (Kreps & Neuhauser, 2010).

Implementing accessible online health resources could be a way to reduce health costs, as informed people use healthcare services in a more efficient way (Fisher, Burstein, Lynch & Lazarenko, 2008; Nölke, Mensing, Krämer & Hornberg, 2015; Jiang & Beaudoin, 2016). Likewise, OHI that is adaptable and contextually tailored to fit a large user group is reported to benefit both healthcare and health promotion efforts (Kreps & Neuhauser, 2010). People who use OHI have also been reported as more likely to visit doctors, get HIV tests, and have shorter hospital stays (Macher, Mayo & Ukhaneva, 2016).

1.1.2 Healthcare in Cuba
Before 1959, the year of the revolution in Cuba, all healthcare was privatised and a lot of Cuba’s poorer population could not afford to visit hospitals or buy medication (Gustafsson, 2006, p. 567). When the new, socialist regime took power, healthcare became free for all, and in a move to improve health in the rural areas of Cuba, the new president Fidel Castro made it mandatory for new doctors to initially serve for a few years in the countryside, resulting in the eradication of polio by 1963, and malaria by 1965 (Gustafsson, 2006, p. 302). From there only being one rural hospital in 1958, there were 62 in 2000 (Sixto,
2002, p. 331), and most villages has an infirmary serving its occupants (Gustafsson, 2006, p. 569).

In 1984, a new scheme of Family Doctor-and-Nurse programs were introduced in the country, so called “consultarios”, to provide better, integrated care into communities (Gorry, 2017, p. 6). Now, alongside the polyclinics and hospitals, the consultarios form the backbone of primary care in Cuba, taking care of approximately 80% of all health problems, in addition to working with health promotion (Dresang, Brebrick, Murray, Shallue & Sullivan-Vedder, 2005, p. 298). One such health promotion activity performed by the consultarios are inspections into people’s homes, informing them not to have “standing water” around to avoid mosquito-borne infections, such as dengue fever (Campion & Morrissey, 2013, p. 298).

Each consultario is staffed with family physicians, nurses, and other healthcare workers, responsible for up to 1,500 patients, who are all categorized into four groups according to level of health (Gorry, 2017, p. 6). According to Gorry (2017, p. 7), consultario doctors are required to conduct home visits to patients in group one – apparently healthy individuals – at least once a year, while patients belonging to the other groups are due two or more visits per year. If necessary, the consultarios can refer patients to the district polyclinic for speciality evaluation, but remain in charge of the follow up care (Campion & Morrissey, 2013, p. 297).

The consultarios regularly report to the district polyclinic, which supervises a maximum of thirty consultarios (Gorry, 2017, p. 6). In these reports, the consultarios report how many of their patients are currently in the “risk zone” – hypertension, diabetes, asthma – thus acting to prevent a deterioration of health in the population in general (Campion & Morrissey, 2013, p. 297).

Evaluating four decades of Cuban healthcare, from 1960-2000, Sixto (2002) highlights Cuba’s achievement of increasing its health indicators to levels comparable to those of industrialized countries. According to Campion and Morrissey (2013, p. 298), the improved health indicators are largely the result of improvements in nutrition and health education. Health education is part of the mandatory school curriculum, contraception is free and encouraged, and
smoking is in decline since cigarettes were withdrawn from the monthly ration card (Campion & Morrissey, 2013, p. 298). However, the Cuban healthcare is still struggling with issues such as a lack of medication and low wages for healthcare workers (Sixto, 2002, p. 340), a lack of technology, and a minimum of internet access for its healthcare workers (Campion & Morrissey, 2013, p. 298). Even so, Cuba is acknowledged as having one of the highest percentages of doctors per 1000 people in the world; statistics from 2010 state that Cuba has 6.72 doctors per 1000 people, comparable to for instance USA who has 2.41, or Sweden who has 3.77 (The World Bank, 2016).

1.1.3 Available Cuban health websites and their use
If you have the possibility to access internet in Cuba, including the limited, national internet, you have the possibility to access several health-related websites. One of the bigger ones is called INFOMED, which is the website of an online network created to connect medical schools and institutions across Cuba, providing access to scientific reports and news, and facilitating email exchange (Urra, 2008). INFOMED is directed at medical professionals, both in and outside of Cuba, and aims to facilitate the exchange of research and information (Séror, 2008).

From INFOMED you can access the Biblioteca Virtual de Salud (BVS), a virtual library that integrates access to Cuban electronic medical publications, as well as important U.S., Latin American, and international publication initiatives (Séror, 2008). Also available via INFOMED is the website Al Día, aimed at medical professionals as a news service that “…allows updating in different medical themes and disciplines related to health, public health and the priorities and objectives of the Cuban National Health System…”1 (Al Día, 2016).

The common denominator for these websites is that they are all primarily aimed at medical professionals, not the general user or public. Their content is mainly focused on more advanced areas of medical information, news, and research, and there is a lack of proper navigation and search aid – factors which could impede access to the websites’ information, especially for those users who lack

1 In Spanish: “…permite la actualización en diferentes temáticas médicas y disciplinas afines con la salud, la salud pública y con las prioridades y objetivos del Sistema Nacional de Salud (SNS) cubano…”. 
knowledge about advanced medical terminology and abbreviations (Fisher et al., 2008).

1.1.4 Problems of accessing internet
Another, more practical, problem for Cubans to access OHI is the limited internet access. In 1996, Cuba connected to the internet and seemed on their way of further developing their digital services. However, partly due to lack of technical infrastructure and political will, the development stagnated and access to internet became severely limited (Press, 2011). Today, access is still restricted, and only 5% of Cuban households have been reported to have access to the internet from home (San Pedro, 2016, 21 March), an increase from the 0.4% reported by the International Telecommunication Union (ITU) in 2011 (Biddle, 2013).

But things are changing. Deals between ETECSA, the government owned telecommunication service, and Ericsson, a multinational telecommunications company, have been made to expand 3G technology in the country (Patrick, 2016, 19 September), and broadband via fibre cable is under development (Cuba Business Report, 2016, 2 February). As of 2015, 65 Wi-Fi hotspots were set up around the country, and 80 more were planned for 2016 (Cuba Business Report, 2016, 7 April). An exact number of how many hotspots that existed in Cuba during the time of the study (April-May 2017) was hard to find, but around 200 public Wi-Fi zones has been suggested as a plausible estimation (Ding, 2016, Sep; TeleGeography, 2016, 13 Sep). This new and improved way of accessing internet through Wi-Fi, while positive, has been reported to cause large crowds to try to go online at the same time, resulting in slow and unresponsive connections (Dye et al., 2017). This can be especially irritating as the price for connecting to Wi-Fi, 2 dollars per card and hour, is considered high for most Cubans, whose average monthly income is between 12-25 dollars² (Biddle, 2013).

² The figure for the average monthly income can be misleading, as there are two currencies in Cuba: CUC (convertibles – also called dollars) and CUP (pesos – also called moneda nacional). The dollar follows the American dollar course, and one dollar translates into 23-25 pesos. It is pesos most Cubans use daily, for example to buy necessities such as vegetables, eggs and meat, or to use on public transport. The prices for these products and services are on average cheap, presumably reflecting the average income. However, Wi-Fi cards can only be bought with dollars, requiring Cubans who want to access internet through Wi-Fi to exchange around 50 pesos to be able to buy one card.
1.2 Problem description

Health statistics in Cuba are reported to be good, in many ways equal to those of developed countries (Sixto, 2002; PAHO, 2015). But Cuba is also a one-party government country, with the most restrictive laws on freedom of expression and press in the Americas (Freedom House, 2016). According to Ruger (2005) such absence of democracy can have negative effect on health, as there is no opposition party or free journalism to criticize the party line, nor any possibility for people or social groups to voice social, health related complaints, putting pressure on the government to create change.

Although this study will not focus on creating any changes on governmental level in Cuba, the work of Ruger (2005) still implies that, because of the current Cuban government, there might be a lack of certain types of health information available for Cubans. However, now that internet access is expanding in Cuba, new possibilities of making a wide range of health information easily accessible through online resources arises. As improving people’s access to health information, and their ability to use it effectively, can have both personal and societal benefits regarding health (WHO, 2009), increasing access to health information through online resources could prove valuable, not only for Cubans, but to Cuba as a country as well.

1.3 Purpose of study and research questions

The purpose of this study is to explore ways to support Cuba’s and its people’s development in terms of improved health and wellbeing through access to user-centered online health information, adapted to Cuban requirements and conditions. The study aims to answer three research questions:

- How do Cubans currently seek and access health information (both on- and offline)?

- What obstacles do Cubans encounter when trying to access health information (both on- and offline)?

- What sort of content would the Cuban people like to see in a public website for online health information?
The results of the research questions will form the basis for the production of a development proposal for a Cuban, user-centered health website.

1.4 Delimitations

Because of the exploratory focus of this study – investigating yet unknown requirements for a Cuban health website – no specific delimitations were made regarding the type of health information included in the study, as any such delimitations might have meant that health areas of importance to Cubans could have gone unnoticed.

1.5 Disposition

The study begins by presenting earlier research on health website design and use, in addition to research focused on slow networks and low bandwidth design; important factors for the final development proposal of the study. The research is followed by the method chapter, describing the method used in the study – semi structured interviews – in addition to sampling method and a detailed description of the participants.

The results of the empirical data are presented in an individual chapter, followed by the analysis and development proposals for a Cuban, user-centred health website. Lastly, a discussion about the study and its findings, including limitations and suggestions for future research, is given.
2 Earlier research and method of analysis

Since the objective of the study is to produce development proposals for a health website with the purpose of providing Cubans with accessible health information, the focus during the research stage has primarily been to collect research that could serve as a basis for understanding 1) How the design of health websites can affect understanding, use, and access to health information, and 2) How to design for slow networks and low bandwidth; two factors that are currently to be expected in Cuba (Biddle, 2013; Dye et al., 2017).

To gain a better understanding of what OHI is generally used for, this chapter begins by introducing the reader to common motivations why users choose to access health information online. After that, the research focuses on the actual use of health websites, presenting factors believed to affect access, understanding, and use of health information. Lastly, research describing obstacles and possibilities when designing for slow networks is included.

The chapter ends with a summary of the research, and description of those aspects, concepts and ideas from previous research that are placed together to serve as analytical tool/framework for the study at hand.

2.1 Motivations for accessing OHI

Studies show that common motivations for users accessing OHI are to find out more about a recent health condition or to help another deal with health issues (Mendes, Abreu, Vilar-Correia & Borlido-Santos, 2016; Rice, 2006); to better understand a diagnosis, or get a second opinion of a diagnosis (Powell, Inglis, Ronnie & Large, 2011); to better prepare themselves before doctor appointments (Sillence et al., 2007a; Mendes et al., 2016); and to share experiences and information concerning their own health, or the health of a loved one, in online support groups (Rice, 2006; PEW, 2011). Perceived external barriers to traditional sources of health information, such as limited opening hours or difficulties in physically accessing the healthcare, are also a source for users turning to OHI (Diviani, van den Putte, Meppelink & van Weert, 2016; Powell et al., 2011).
Accessing OHI also occurs during disease-free circumstances, with users using the information to expand their knowledge of a healthy lifestyle and improve their informational background (Mendes et al., 2016). Skilled are reported to more often access OHI to expand their knowledge, while less skilled web users access OHI to confirm their already made health-related opinions (Feufel & Stahl, 2012).

2.2 Health website design

Content is considered the principal part of why users access health websites (Sillence et al., 2007a; Kim & Chang, 2006). Content on health websites should be organized and distributed on the site so that it is clear and unlikely to overwhelm the user (Jiang & Beaudoin, 2016). According to Sillence, Briggs, Harris and Fishwick (2007b) and Sillence et al (2007a), the content should also be informative and preferably match the users’ own character/personality, by making them feel that the site was written for someone like themselves. In their study about e-health websites in the Latin Americas, Novillo-Ortiz, Hernández-Pérez and Saigf-Rubió (2017), argue that designers should explore what kind of terminology is used by the intended users, and that designers should use the same terminology throughout the site, to ease comprehension of the information. Complementing information with illustrations could also help users to better process complex health information (Houts, Doak, Doak & Loscalzo, 2006; Meppelink & Bol, 2015, cited in Diviani & Meppelink, 2017).

Although the content of health websites is important, evaluations of health websites also stress the importance of visual aesthetics, since users of OHI have been shown to initially rely on visual appeal when determining if a health website seems usable or not (Sillence et al., 2007a; Diviani et al., 2016). Visual features influencing the rejection or selection of a health website include such design features as corporate feel, pop-up banners, small print, or too much advertisement (Sillence et al., 2007a).

To guide users in quickly understanding what content is available, Sillence et al (2007b) promote the use of visual clues (symbols such as icons and logos), and advise designers to make it easily discernible as to what type of health website the user has entered. Also, functions such as good navigation aid have also been
shown to be of importance to the user, allowing them to quickly pinpoint their own specific health areas of interest (Sillence et al., 2007a; Fisher et al., 2008).

Allowing personalization of content and offering usage support are further functions that can increase the continued usage of a health website (Kim & Chang, 2007; Fisher et al., 2008). Providing an ontology and thesaurus to help with complicated medical terms, as well as creating a search function that permits the misspelling of words, have also been reported to increase health websites’ perceived usability and trustworthiness (Fisher et al., 2008).

### 2.2.1 Designing for health literacy

Health literacy describes the degree to which users are able to access, understand and use health information in ways which promote and maintain good health (WHO, 2009). For high and low health literacy alike, research has shown that all users of OHI utilize both accredited and uncertified health information online, often settling with the first page visited that provides them with satisfactory information, failing to compare information between different sources (Feufel & Stahl, 2012; Quinn, Bond & Nugent, 2017). However, the ability to correctly assess health information online is crucial, especially as inaccurate OHI, a common feature in today’s digital landscape (Zhang, Sun & Xie, 2015), can lead to ill-informed and dangerous health decisions (Kata, 2010; Jiang & Beaudoin, 2016).

Strategies to facilitate the comprehension of health information online have been investigated. Metzger (2007), for example, suggests that informing about the negative consequences of incorrect online information, in addition to educational messages, could be an effective strategy, but Diviani and Meppelink (2017) argue that educational messages, such as these, only have effect amongst users who already have a high level of health literacy.

### 2.3 Designing for slow networks

To provide good usability for a website used in slow network settings, it is necessary to efficiently utilize network bandwidth; high bandwidth content such as images, audio and video can congest network access and degrade the overall user experience (Pujari et al., 2016). To prevent this, allowing users to
selectively choose what content to load on a website, and reordering web page content so that content smaller in size can be loaded first, could prevent bandwidth wastage and give users more control over what content they wish to access (Pujari et al., 2016). Research has shown that internet users in Havana, owing to limited supply of bandwidth, actively avoid downloading large files, such as images (Dye et al., 2017).

2.4 Summary and analytical tool

Since the analysis of empirical data in this study forms the basis in the production of development proposals for a health website, made to be used by Cubans in Cuba, the main purpose of the research during analysis will be to provide guidelines on how to translate the findings from the empirical data into practical website design solutions. Accordingly, the earlier research has been summed up and grouped into positive and negative factors concerning both functions and content regarding health website design and design for slow networks (see table 2.1 below). The summing up and grouping of the earlier research thus, was done with the intention of aiding the upcoming development process, and as such, the analytical tool will mainly be used in the later stages of analysis of the empirical data, when its findings will be put to practical use for the development proposals.
<table>
<thead>
<tr>
<th>Positive factors</th>
<th>Negative factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Functions</strong></td>
<td></td>
</tr>
<tr>
<td>Allowing users to choose what content to load</td>
<td></td>
</tr>
<tr>
<td>Usage support</td>
<td></td>
</tr>
<tr>
<td>Ability to personalize content</td>
<td></td>
</tr>
<tr>
<td>Accommodating search system</td>
<td></td>
</tr>
<tr>
<td>Good navigation aids</td>
<td></td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td></td>
</tr>
<tr>
<td>Well organized, easy-to-find information</td>
<td>Badly organized, hard-to-find information</td>
</tr>
<tr>
<td>Providing visual clues as to what type of information is available</td>
<td>Poor aesthetics</td>
</tr>
<tr>
<td>Complementing information with illustrations</td>
<td>Large images, video and other high-bandwidth content.</td>
</tr>
<tr>
<td>Displaying image and link sizes</td>
<td></td>
</tr>
<tr>
<td>Adapting terminology to that of the target audience</td>
<td></td>
</tr>
</tbody>
</table>

*Table 2.1.* Analytical tool: website factors associated with positive and negative influences on health website design and slow network design, concerning both website functions and content.
3 Method

As originally intended, this study was to draw on the method used by Anschuetz and Rosenbaum (2003), who let ethnographic interviews guide the new design of a car retailer’s website. The ethnographic interviews included observations of the users performing tasks in their natural environment, as well as of the environment itself, which led to a greater understanding of issues that might not have been uncovered had the researchers relied on interviews alone. The same method could, I believed, be incorporated in this study, as it might provide information about what kind of health information users already have in their home, and how they might negotiate such obstacles as limited internet access when searching for OHI.

However, after spending a few weeks in Havana talking to people and observing the settings, I began to feel hesitant about my initial method. Firstly, approached participants, while interested in taking part of the study, expressed some reluctance to performing the interviews in their homes, preferring to meet outside or at another person’s apartment. Secondly, as mentioned earlier, internet access is very limited in Cuba (Biddle, 2013; Dye et al., 2017), and this was affirmed in my interactions with Cubans living in Havana, a lot of whom did not have the possibility to go online more than on very rare occasions, due to the high cost and necessity of owning an appropriate device.

Discussions about internet access, thus, tended to leave me with a feeling of unease as they to some extent became discussions about economic wealth, while at the same time highlighting the fact that I came from a very different economic background than most Cubans, used to such comforts as smartphones, computers and round the clock internet access. Núñez (2015) describes similar ethnographic situations/experiences as “studying down”, in other words “…the study of disadvantaged individuals or communities with less (social and/or economic) power than oneself” (s. 464). Such unequal power relations can cause problems if, due to for instance perceived class differences, the participants resist genuinely engaging in the study, or if the researcher enters the study site with a predisposition of promoting development as ‘progress’, thus diminishing the current context in which the participants are (Núñez, 2015, s. 464). To ensure
the best possible conditions for the interviews I chose, therefore, to take focus away from the practical observations of using, or analysing, the internet and specific websites, as this might be experienced as uncomfortable by the participants, and might amplify any potential differences and distances between myself and the interviewee. Instead, emphasis was put on engaging participants in discussion about healthcare and health information using semi-structured interviews, rather than ethnographic interviews. That way, the topic of internet access could be broached and discussed without requiring the participant to interact with any technology that he or she might not feel comfortable with.

Still, the ethnographic aspect was not completely lost, as Whitehead (2005) describes all field study to be a form of ethnography in that you get to understand the cultural system through observing and interacting with it, by living in the field. My being and living in Havana for several weeks prior to the interviews, allowed me to get a better insight into Cuban life and the daily issues Cubans might face, since I faced them, too. These issues did not only include the difficulty of connecting to the internet in the allotted Wi-Fi parks, which from twelve o’clock and forwards could take over thirty minutes and then be very unresponsive, but also the long waits Cubans often experience, for instance at the bank, outside and inside the supermarket, at the pharmacy, the post office, or at any official office. My experiences of daily life in Cuba enabled me to better engage with the participants during the interviews, as I had a better grasp of the context they described and the issues they faced, for instance when trying to access the local healthcare.

The upcoming chapter will describe how the semi-structured interviews were constructed, how the sampling was decided upon, the participants chosen for the interviews, how the interviews themselves were conducted, and lastly, how the data from the interviews was organized and analysed.

3 It is very common in Havana, when entering any of the previously mentioned places, to ask who the last person in the line is, thus establishing your own presence as the last in line; a position which will then be respected by all who come after you. Having established your position, you are free to sit down anywhere you like, or even leave – so long as you return before your turn.
3.1 Semi-structured interviews

Interviews are a suitable method when the researcher wants to gain insight into people’s opinions, feelings, experiences and emotions (Denscombe, 2010, p. 173). In semi-structured interviews, there is no set list of response possibilities; instead the participant is allowed to answer the questions fully from his or her perspective, while the researcher attempts to gain a greater understanding of the context and meaning of the responses through different forms of probing (Whitehead, 2005).

The semi-structured interviews for this study followed the open-ended approach of allowing participants to answer questions from his or her perspective, helped by probes and follow-up questions (for the full interview sheet, see appendix B). To ensure that participants had the possibility to expand on their answers, few questions were yes-or-no questions. Instead, participants were often asked to explain how they generally would carry out activities, or asked their view on different topics, thus sharing their experiences, feelings, and opinions.

The interview questions were grouped into three themes: information needs and searching for health information, contact with local health care providers, and online health information. The themes, and accompanying questions, were formed in accordance with the study’s research questions; the answers derived from the interviews were anticipated to answer, or give insight to, the research questions. By allowing wide answers to the interview questions, a wide set of experiences and opinions were expected. As the research questions concerned a wide target audience, namely the Cuban people, these wide answers were especially important to ensure that an extensive set of responses formed the foundation for the future interpretation of the data.

3.2 Sampling and participants

Since time and resource limitations prevented a large scale, representative sampling of the Cuban population, purposive sampling was chosen as sampling method. Purposive sampling can be used to ensure that a wide cross-section of people is included in the sample, thus emulating a representative sample, by allowing the researcher to deliberately select participants based on prior knowledge (Denscombe, 2010, p. 35). For this study, the participants were
selected on the basis of forming a small representation of the Cuban population, including participants of different age, gender, occupation, income, and internet use (for a detailed description of the participants, see table 3.1 below).

Four of the participants were located within my contact network in Havana, and were thus approached verbally by myself in direct contact, while the other four were approached using a mediated contact; a person who makes the request to participate for you (Blandford, 2013). The use of a mediated contact ensured that a wider range of participants could be approached, and was especially crucial in the recruitment of the participant who worked within the Cuban healthcare. The mediated contact used was part of my contact network in Havana, and were thus asked to act as a mediated contact by myself.

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Occupation</th>
<th>Income</th>
<th>Internet Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>74</td>
<td>M</td>
<td>Retired</td>
<td>Low</td>
</tr>
<tr>
<td>P2</td>
<td>74</td>
<td>F</td>
<td>Retired</td>
<td>Low</td>
</tr>
<tr>
<td>P3</td>
<td>38</td>
<td>F</td>
<td>Manages a ‘Casa Particular’</td>
<td>High</td>
</tr>
<tr>
<td>P4</td>
<td>53</td>
<td>M</td>
<td>International relations employee</td>
<td>Medium</td>
</tr>
<tr>
<td>P5</td>
<td>50</td>
<td>F</td>
<td>Psychologist</td>
<td>High</td>
</tr>
<tr>
<td>P6</td>
<td>42</td>
<td>F</td>
<td>Carer</td>
<td>Medium</td>
</tr>
<tr>
<td>P7</td>
<td>27</td>
<td>M</td>
<td>Film producer</td>
<td>Low</td>
</tr>
<tr>
<td>P8</td>
<td>18</td>
<td>F</td>
<td>Student</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 3.1. Detailed description of the participants in the study.

4 A Casa Particular is a house, or a room/rooms in house, that is available for rent by tourists.
3.3 Course of action

Each interview was conducted with myself, the interviewee, and a translator present. As I am not fluent in Spanish, and as very few of the participants spoke sufficient English, I believed the risk of misunderstandings was too large to risk performing the interviews on my own. The translator was the same person who acted as my mediated contact, and was thus already acquainted with several of the participants. For the rest, I believed her presence as a local resident of Havana served reassuring, bestowing credibility to the study, while also giving me the opportunity to assure that the participant had understood the purpose of the study, and their rights as participants in it.

The interviews took place at the apartment where I was staying in Havana, and at my translator’s apartment. All participants were given the option to conduct the interviews at another place should they prefer it, but no one took this option. Prior to the interview, all participants were presented with written information about the study and their participation in it (see appendix A). For participants who did not speak or read English, the information was translated into Spanish and read aloud to them by the translator.

The role of the translator varied depending on the participant. For participants with high English skills, the interviews were, at least partly, conducted in English, reducing the role of the translator. The same applied for participants who spoke clear and slow Spanish, where I could conduct the majority of the interview in Spanish, depending on the translator only when I felt I might not have understood the whole answer. For the interviews where the translator asked most of the questions and translated most of the answers, I was still able to steer the interview by probes and follow-up questions, either by directing them straight at the interviewee, or at the translator.

Because of my position as a student of the Web content management and design program, it was important to explain to each participant that my main priority was not to inquire solely about their internet or website use, which seemed a common worry, especially for those participants who had low access to internet and who used it rarely. Once it became apparent to the participants that I was generally interested in their personal experiences of health information and
health information access, more relaxed conversation ensued, in which the question of internet and online access to health information could be brought up in a less charged fashion.

The average length of the interviews was around 35-40 minutes, with the longest lasting for 58 minutes and the shortest for 20 minutes. In general, the longer interviews proved the most valuable, as those participants seemed the most eager to share their opinions and personal experiences regarding healthcare, Cuban culture, internet access and more, providing me with information that I could then continue to build the interviews on.

The interview manual (see appendix B) was used for every interview. However, a lot of the time it was merely used as a reference and as a way for me to ensure that I had covered each question, as often the participant, by expanding on his or her answer, answered many of the upcoming questions, thus rendering them unnecessary to ask. I also found that too much focus given by me to the interview manual interrupted the discussion, or forced the participants to repeat information they had already given.

Questions which seemed difficult to answer, or understand, included the ones concerning the improvement of activities relating to health information or healthcare access. Some of the participants could not see how it could be improved, often pointing at the lack of infrastructure or technical resources, failing to picture a future where these problems would be amended (I even got called pretentious for asking such a question). Others did not feel there was anything to improve, considering the current system to be sufficient for their needs.

Another question which caused some difficulty was the one about what type of content the participant would like to see at a health website, again, especially for those participants whose internet use was limited to rare occasions. If the participant expressed any doubt or seemed uncomfortable at the question, I usually rephrased it to concern specific topics of interest regarding health that the participants would like to access or know more about.

On consent from the participants, each interview was recorded.
3.4 Ethical considerations

As the topic of this study concerns the health of people, it was important to be transparent about the purpose of the study from the start of each interview and consistently throughout; the purpose was not to examine any personal or private health issues of each participant, but rather the practical procedures they undertook to access health information, and any potential suggestions for improvement etc. I explained that the information discerned interviews would be used to produce a development proposal for a Cuban health website, and that this was the main purpose of the study and interviews.

The questions posed to the participants during the interviews (see appendix B) mirrored this purpose in that they focused on the practical procedures and suggestions for improvement for ways of accessing health information in Cuba, rather than on any personal health issues or experiences. However, as the interviews were semi-structured, allowing participants to expand on his or her answers, personal subjects were sometimes approached by participants going into deeper detail on certain questions. Whenever this happened, or were perceived as about to happen, I always attempted to bring back focus on the more general/practical/technical aspects of the question, and often repeated the purpose of the study. Each interview also begun with me explaining that all participants had the right not to answer any question, should he or she wish it.

Another ethical consideration made during the interviews concerned the limited freedom of speech in Cuba. Drawing on the study done by Dye et al. (2017) in Havana, I intended to remind participants to be careful, should they broach a potentially controversial subject during the interviews. However, this was never necessary, as no participant went into any actual criticism of the Cuban government or similar topics.

3.5 Data preparation and analysis

All interviews were transcribed to get a better overview of the data. The transcriptions were made using selective transcription; transcribing those parts of the interviews that might prove valuable to the study, rather than using word for word transcription (Blandford, 2013). Additional things left out from the transcriptions included such things as repetition of words or questions,
unnecessary explanations by the translator, and deviations from the questions which had no real connection to the study.

To have a more consistent set of data to analyse and to ease analysis, the interviews that were conducted in Spanish were translated into English during transcription. For those interviews in which the translator played a greater role, in addition to transcribing the translated answers, most of the participants’ original answers were also translated into English and transcribed – to the best of my ability. This was made to ensure that the participant’s opinions, experiences, and feelings, had the best chance of being expressed and understood. For this study, all citations from the interviews are in English.

After transcription, the data was organized and structured into themes reflecting the research questions: how Cubans search and access health information, obstacles in accessing health information, and what sort of content Cubans would like to see on a public website for health. Grouping the data into themes thus helped to discern patterns from the data, interpreting common/shared experiences and opinions. It also helped the task of analysis by having three defined areas at which to use the analytical tool from the previous research, to establish which design recommendations had relevance for the final analysis and development process.
4 Results

In this chapter I present the results derived from the study. The results are grouped under headings representing the research questions (see chapter 1.3). The analysis of the empirical data will be done separately in chapter 5, where the results of the study also will be used in the production of development proposals for a Cuban health website.

4.1 Accessing health information

The most common way of searching for answers to health-related questions was talking to friends and family – mentioned as the number one way by nearly all participants, and dubbed by one participant as “the Cuban way”. The reason for this oral exchange proved largely to be because it was deemed quicker and easier than accessing the same information through the official way – through the consultario – described as slow and unreliable due to there not being any possibility of booking appointments beforehand or calling the clinic, requiring people to show up in person for each health query, creating long queues. According to one participant, the slow process also depended on there not being enough staff, due to the many Cuban doctors who go abroad to work, for instance to Venezuela, in an economical exchange between the two countries.

Having friends or acquaintances who work within the Cuban healthcare was mentioned as the most efficient, and common, way of accessing professional health information, as well as of getting an appointment to see a specialist at the polyclinic, sometimes bypassing months of waiting: “Here it’s impossible to survive without contacts. Because the official way is always long and complicated. If you need to take the short way you need to use a friend, a friend possibility [a contact], something like that.” (P2)

The lack of internet and ability to search for health information online also fuelled the oral exchange, with people with internet access functioning as sort of ‘information banks’ or ‘go-to points’ for people without. Participants with the ability to access internet, if only sparsely, all expressed that they often searched for health information for friends or acquaintances, either sharing it orally, printed, or on memory sticks:
“If someone knows you have this access, you get a series of questions to get information and you look for it. It’s a sort of solidarity. You give it to the person who needs it. And it’s not always about health, it’s about everything. It’s an act of solidarity, a way to help one another.” (P4)

Sharing health information was not only limited to participants’ personal contact networks, but also occurred among strangers accidentally coming together when waiting in queues, waiting rooms, at bus stops etc. One participant even described getting health information from her plumber, who shared it from his memory stick.

The use of Cuban websites for health information, such as INFOMED or Al Día, was only expressed by the participant who worked within the Cuban healthcare. Other participants with internet access knew of INFOMED’s existence, but saw it primarily as a website dedicated to healthcare professionals, preferring instead to search for health information on Google.

Health information from official sources, excluding consultarios, was normally communicated via mass media, such as radio, newspapers, and television - the latter medium playing a major part in Cuban life. Such mass communicated health information often concerned, according to the participants’ descriptions, ongoing viruses and infections, such as zika, but also a lot of information regarding health promotion; about the benefits of boiling your water, the dangers of drugs, and information about not to self-medicate or rely on health information from friends and family. When asked if this was because there is an understanding within the Cuban healthcare that Cubans have the habit of asking friends and family for advice, one participant replied:

“Of course! Also, we very often lack medicines in the pharmacies, so it’s very common to substitute on your own: “They told me to eat an antibiotic, this is an antibiotic, so I’ll just take this.”. That’s why they’re always explaining the dangers of mixing things, that it isn’t safe.” (P2)

Information regarding viruses and health promotion also exist on posters in the consultarios and in pharmacies, but not on the streets, bus stops or in
supermarkets etc. No participant expressed ever getting similar information by mail or e-mail, although many Cubans were described as having access to a national e-mail via their mobile.

Another interesting finding concerning health information access was that no participant described themselves as getting regular home visits from the staff at the consultarios. Considering that the previous research described these visits at obligatory I enquired especially about them, however, participants described the visits as taking place only if you were very ill, pregnant, or had a small child. This lack of home visits did not seem to be a recent change in procedures.

4.2 Obstacles accessing health information

Apart from the slow process of accessing health information from official sources, the most common obstacle experienced as limiting the access to health information was the lack of internet. Even those participants with regular internet access described themselves as limited in their use, due to only being able to access it at work, having a limited number of hours or megabytes of access, or high costs. Participants with the possibility to access internet via Wi-Fi parks, describe the activity of having to leave home to search for health information as reason enough not to do it: “It’s so hard to walk to the park [gesticulates at the sun]. If you have a health problem, you don’t walk to the park! You stay in your home. Or go to the doctor.” (P8)

“It’s expensive. And if my head hurts in my home, I’m not going to walk to the park to search for information about headaches!” (P7)

Participants who regularly used the internet to search for health information expressed difficulty in finding valuable or reliable information online, due to the sheer amount of search results. The participant who worked within the healthcare system, with professional medical knowledge and patient responsibility, expressed that she only looked for health information on websites she already knew to be reliable, or used search engines such as Google Scholar. The general language online being English was mentioned as a further obstacle in attaining information, as not all Cubans speak or read it.
Those participants who relied on official sources to access health information, such as television and newspapers, expressed that the focus on general health promotion and current epidemics, drew attention from all other forms of health issues and illnesses, describing it as almost impossible to access information about rarer health conditions.

4.2.1 Participant suggestions for improvements
When asked about how the current system could be changed to facilitate access to health information, many participants expressed doubts about the probability of creating any improvements using today’s technical infrastructure. However, when prompted, participants expressed that a wider range of health information published in the newspapers would be an improvement, as newspapers are easily accessible to the majority of Cubans: “Not everybody has access to the internet in Cuba, and there isn’t any information like that in newspapers. It’s a shame because everybody has access to a newspaper.” (P1)

A quicker, more efficient way of accessing both healthcare and health information at the local consultarios, without all the bureaucracy and waiting time involved, was also suggested as an improvement.

Participants with regular access to internet expressed less need for improvements than those without, who all mentioned the access to internet as the number one facilitating aspect for accessing health information.

4.3 Desired content for a Cuban health website
The importance of health information was stressed by all participants in the study, perceived as crucial to achieving an increased knowledge about health and to getting more control over your own life. Thus, for a Cuban health website, information about lifestyle was a common desire amongst most participants, including information about exercise and diet: “For me everything about life and lifestyle. Because I think if you’re healthy you don’t have to search for health information online. *laughs*” (P3)

However, several participants expressed thoughts of concern, or even irritation, regarding the general health advice as seen in the consultarios concerning a healthy lifestyle, such as eating a lot of fruit, fish or eggs, as these were described
as expensive and rare commodities for the majority of Cubans. Instead, lifestyle content adapted to the Cuban conditions was requested, as it would be more accessible to the average Cuban: “I love tomatoes, but I can’t buy them very often. I eat them when I have them. Meat? Good, thank you! But I can’t buy that.” (P1)

“Which Cuban eats breakfast with fruit? Nobody. So, it’s ridiculous to have a website with this kind of information. If a normal person sees that page, he will be angry. That sort of website is for a minority. ... I think, and it’s my personal view, that on a website for health you need to do market study: about what we have and what we don’t have. That’s the first thing you need to do for a Cuban website about health.” (P4)

Older participants also requested lifestyle content adapted to their age.

Information concerning different illnesses and diagnoses was a common request for a Cuban health website. The participant who worked within the Cuban healthcare declared this area of health information to be the most important for Cubans; what the diagnosis is, what causes it, and how to treat it, believing this information to be the most empowering for the people.

As a reaction to the long waits in consultarios and lack of medication in the pharmacies, a few participants requested information concerning opening hours and services provided by the clinics, as well as what medications were available at the pharmacies, to save time: “Information about where I can find different things, not to be walking the whole Havana looking for medicine. And if I could buy it off the internet it would be even better!” (P2)
5 Analysis and development proposals

In this chapter I analyse the presented results of the study to distinguish areas that may be of interest for a health website in Cuba, and use the analytical tool (described in chapter 2) to help guide the design of the development proposals. The design proposals in this study are in English, but an implemented health website in Cuba should naturally be in Spanish.

5.1 Functions

Although several participants had the possibility to access internet, it was often limited either in terms of place, limited bandwidth, or high costs. To promote access to the health information, and ensure that users can take advantage over the bandwidth they have and use it efficiently, users should be able to decide which content to load on a website (Pujari et al., 2016), and image and link sizes should be displayed, thus giving users more control over how they spend their time/megabytes online (see figure 5.1).

![Load image (97kB)](image)

Figure 5.1. Proposal of image design, displaying image size.

The limited internet access experienced by the participants also motivates making the content available to download, thus allowing users to access it when no longer online. The culture and habit of sharing information between friends, family, and contacts, further motivates the implementation of functions to facilitate the downloading of material, either as files – to share via memory sticks – or as prints. Allowing material to be shared thus means it has the potential of reaching more people – including people without internet access.
Still, as ways of accessing internet increases in Cuba (Cuba Business Report, 2016, 2 February), and as the use of smartphones may be on the rise (Cuba Business Report, 2017, 9 March), the design proposal also contains functions that enable the sharing of information online (see figure 5.2 below).

![Proposal for link design, displaying link sizes, and a function for sharing website content.](image)

**Figure 5.2.** Proposal for link design, displaying link sizes, and a function for sharing website content.

The desire to find suitable lifestyle information and information adapted to participants’ age, suggests that a function to personalize content might be motivated, as this is considered as a positive factor for health website use (Kim & Chang, 2007; Houts et al., 2006). However, providing such a function would most likely require users to create a profile and to log in to the website, at least if they wanted to save their preferences. In a later development stage, or for a future version of a more advanced health website, this may be a good solution to enable users to access content to suit their lifestyle or circumstances. For now, as a function, I propose that a thorough search system is put in place instead, allowing the misspelling of words and including A-Z indexing and a thesaurus, as this also simplifies accessing the right type of health information (Fisher et al., 2008). Also, a function for usage support, a positive factor regarding the use of health websites (Kim & Chang, 2007; Fisher et al., 2008), is proposed to feature in connection to the search system, giving the user the opportunity of support if he or she should find the system, or the website, difficult to understand (see figure 5.3 below).
The requirement to speed up the process of accessing health information from the consultarios, as well as the requirement to buy medications online, requires the transformation of several establishments, including the Cuban healthcare system and postal system, and is, as such, too large a prospect to include in this study. However, a booking system, be it online or offline, would arguably simplify access to both healthcare and health information considerably, as would the option to purchase, or order, medications online.

5.2 Content

The empirical data contained several suggestions for what type of content that would be suitable for a Cuban health website, these being: information about diagnoses and how to treat them, a wider range of health information than is commonly communicated from official sources, content concerning healthy lifestyle – including diet and exercise, content adapted to Cuban conditions, and information about opening hours and services of clinics and pharmacies.

For health websites, previous research emphasizes the need of well-organized content and good navigation aids to promote health information access (Sillence et al., 2007a; Fisher et al., 2008; Jiang & Beaudoin, 2016). Hence, to facilitate accessing the information, the topics of interest distinguished from the interviews of the study should be sorted so they are easy to find, and their content easy to process. The navigation menu in this development proposal consists of four main categories, sorted into an order which I believed would be of considered importance: illnesses and health conditions, lifestyle, clinics and pharmacies, and news (see figure 5.4 below). As this study did not include any actual testing of the prototype, mainly due to time restrictions, there was no
possibility of trying out neither categories nor their ordering on any potential users of the website.

Since both diet and exercise could be said to be a part of a healthy lifestyle, in this development proposal they fall under the category ‘lifestyle’ as sub-categories. Also, instead of a main category called ‘diagnoses’, the category ‘illnesses and health conditions’ is proposed to contain content concerning both diagnoses and how to treat them, as well as information about specific health conditions. Thus, the category serves two purposes at once, as it contains information on two areas of importance to the participants of the study.

News concerning seasonal epidemics and illnesses were not experienced as hard to access from the traditional, official sources of health information. However, as OHI has the advantage of being easily and quickly updated to changing conditions (Kreps & Neuhauser, 2010), it seemed important to have a category containing health news, especially since users have the possibility to quickly share the OHI to a large group of people. To distinguish the news category, making it easy to spot in the case of users requiring quick information about a current health situation, it has a different colour from the rest.

To aid users in understanding what type of health website they have accessed, visual clues such as logos or icons should be provided (Sillence et al., 2007b). I have provided visual clues in the form of a logo including the symbol of a cross, and a subheading describing the function of the website (see figure 5.5 below).
Naturally, content is not only limited to navigation, visual clues, and organization methods, but make up the greater part of most websites. However, these development proposals will not focus on creating the actual content of the health website, as this is not my area of expertise. Instead, the proposals aim to provide a template as to how the content can be structured to provide good conditions for it to be accessible.

For the design proposal regarding the structuring of content, I have chosen to design an example for a webpage belonging to the category ‘Illnesses and health issues’, but the same design is applicable for all categories and webpages.

As mentioned previously, allowing users to choose what content to load gives them more control over their use of bandwidth and facilitates accessing the health information. Thus, the idea behind the design proposal for the webpages is that each section of the website is closed until the user chooses to load it (see figure 5.6 below).

Figure 5.5. Proposal for logotype, displaying visual clue in the form of a cross, and a subheading.

Figure 5.6. Proposal for webpage design, allowing users to choose what content to load.
Since complementing information with images can help users understand complex information better (Houts et al., 2006; Meppelink & Bol, 2015, cited in Diviani & Meppelink, 2017), an image is proposed to accompany the information. This image, as mentioned earlier, is unloaded until the user wishes to load it, avoiding the congesting of potentially slow networks (Pujari et al., 2016). It is however important, in the case of the user being unable to load the image due to limited bandwidth, that the text accompanying it contains all essential information independently, and that the image has an alt-text explaining its content.

The requirement of adapted lifestyle content is, I believe, of great importance to make the information on the health website accessible for its intended target audience. As adapting content and terminology according to your users have been shown to have positive results on the use of health websites (Sillence et al., 2007a; Novillo-Ortiz et al., 2017), I propose that not only the lifestyle advice be adapted in accordance to Cuban conditions, but also that the language used on the website reflects that of the average Cuban users. This does not mean that overly colloquial language should be used, but advanced medical terms and abbreviations, as seen on INFOMED, should be avoided.

The design proposals for the functions and the structuring of content, including the distinguished topics of interest discerned from the empirical data, have been put together as an example of how the finished design of the health website could look (see figure 5.7 below).
Figure 5.7. Proposal for the finished design of the health website.
6 Discussion

This study set out to explore requirements for a health website that could benefit development in Cuba by improving Cubans’ access to health information. The study identified the need for more wide-ranging health information than what is currently being communicated from official Cuban sources. It also identified the need for easily accessible health information, due to the slow process of accessing the same information from the local clinics, along with the desire for health information that is especially adapted to Cuban conditions. Based on the current culture of sharing health related information between family, friends and acquaintances in Cuba, the study saw the potential of reaching more people through facilitating sharing of the website’s content. Also, because of the expressed limitations in internet access, the study’s development proposals promoted a website design which allows users to load content on command, thus giving them more control over their use of bandwidth.

Exploring requirements for a Cuban health website through semi-structured interviews has served as a reminder of the necessity of understanding both user and context before starting the development process. Embarking on the same process based on research and preconceptions of general health websites alone, especially as someone unfamiliar to Cuban life and culture, would undoubtedly have meant that important areas, such as the adaptation of lifestyle content, would have been overlooked. The result would have been a less accessible health website for the users.

This was a small study, concerning eight participants and a limited time period of eight weeks, yet from it originated information which proved valuable for the development and design process. For that reason, I believe that similar, national health websites, without having to devote any major resources, could achieve valuable results from consulting their intended users, exploring the specific requirements for their intended websites.

6.1 Limitations

Using purposive sampling was made to create a reasonably representative sample of the Cuban society, however, I believe there is reason to believe that a
different sample of the same size might have resulted in a different set of requirements, due to the weight of each person’s reply in a sample of only eight participants. The precariousness of relying on such a small sample for a product meant to cater to as wide an audience as the Cuban people, could mean that important aspects concerning both content and functions fail to become recognized – through coincidence. Ultimately, this can hamper accessibility to the information, if aspects and requirements bearing real significance do not get the chance to be detected due to sample size. Hence, a larger sample is recommended.

Having to rely on a translator likely influenced the interviews, in that the discussions became more restricted than if I had been able to perform them on my own; although probes were used during the interviews, having to put them through a translator unavoidably means losing some of the natural flow of conversation. Complicated answers were sometimes experienced as being boiled down and simplified, for my benefit, but inevitably resulting in the finer nuances of the responses becoming lost. Thus, during transcription, a lot of focus was put on translating the original responses in addition to transcribing the translator’s translation, to get as accurate and credible a set of data to analyse as possible.

All participants expressed both positive and negative opinions and experiences about accessing health information and the Cuban healthcare system, and were perceived as fairly uninhibited in their answers. Still, participants might have held back on certain, more critical or personal, opinions, due to my being an outsider to Cuban society, not experiencing the same amount of trust or recognition as they would with a Cuban researcher.

For this study, the failure to recognize the use of libraries might have meant that a way of accessing both internet and health information was unexplored; the topic of libraries was broached too late in the research process for it to become a part in the study. However, no participant mentioned the use of libraries during the interviews, and the use of libraries was never discussed during my stay in Havana as a common way of accessing neither internet nor health information.
6.2 Suggestions for future research

In a future research project, the use of an actual, functioning prototype of a health website, rolled out to a set of users with internet access, would be an interesting way to find out how the OHI is being used and shared, and if the access to a health website changes users’ health related behaviour. User-testing could also help to shed light on certain aspects of the health website that fail to accommodate the needs of the users, or similarly, that is perceived as particularly useful.

To involve more healthcare professionals, active within the Cuban healthcare, as well as local web developers with knowledge about the current Cuban conditions regarding technology and internet use, could be another way to ensure that the health website is adapted for Cubans and Cuban use. A disclaimer to this statement is if the involvement of Cuban healthcare causes the OHI to merely reflect that which is already being communicated through the other official channels – of the most pressing, current health issues and general health promotion – as participants experienced that type of focus to overpower all other health areas of interest to users. Such a focus would fail to comply with the requirement of the website being user-centred.

Finally, recognizing the changing conditions of internet access in Cuba, it would be interesting to observe how accessing health information changes if more and more people get the possibility of going online. Perhaps the habit of sharing information through oral exchange, or through the use of prints and memory sticks, will transfer to online methods of sharing information, such as by mail or messaging. If this new type of information exchange, coupled with the improved internet access, in its turn causes any changes concerning health on a societal level, is another area that might be interesting to explore.
7 References


Appendix A: Information to participants

My name is Linn Vidén, I am an undergraduate student of a programme for Web content management and design at the University of Borås, Sweden. I have come to Cuba on a scholarship from the Swedish International Development Cooperation Organization (Sida), to conduct a field study into ways of developing a health website, and would like to invite you to join the study.

Purpose of study
The aim of the study is to explore ways to support Cuba’s and its people’s development in terms of improved health and wellbeing, through access to health information on the internet.

Study Procedure
If you agree to participate, you will be asked to take part in a one-hour interview either at my or at my translator’s apartment, or at another place where you feel comfortable. At the end of the interview you will be given opportunity to review, modify or remove any of your remarks, or to correct any part of the interview if you feel I did not understand you correctly.

Confidentiality
The information collected will be used for the purpose of this study only. The data will be kept confidential in a password protected computer, stored in a private and locked apartment, and will be destroyed when analyses are completed. The data will be available to no one else but myself. For the study, a number will be used instead of your name, and efforts will be made not to disclose your identity. Results of the study will be available to students and professors at the Web content management and design program at the University of Borås, Sweden, and to students who have made, or are about to make, a field study with finance from Sida.  

5 Although not specifically mentioned here, the participants were also informed about the purpose of the study being that it should be made available to be used by Cuban developers, or Cuban decision makers, that would like to develop a similar website, or make use of the study in other ways.
**Voluntary Participation**

Participation in the study is voluntary. You may refuse to participate, refuse to answer any question, or withdraw from the study at any time.

**Questions**

If you have any questions about the study or about your participation in the study; if you want to make any comments, either now or at a later date; if you would like a copy of the published study; or if you have any other questions, please contact me at linnviden@gmail.com. You may also contact my translator, who lives in Cuba and may be more accessible, at 07833-9XXX [the numbers have been modified for this report], and she will forward your questions to me.

This copy is yours to keep.
Appendix B: Interview manual

Theme 1: Information needs and searching for health related information

- If you have a health query, how do you usually go about searching for an answer?
  - Do you think it could be improved somehow? How could it be easier for you to access health information?

- What other ways of accessing health information can you think of?

- How would you describe the facility/difficulty of accessing health information in general?
  - Do you feel that you are able to access the information you want?

Theme 2: Contact with local and national health centres, organizations and practitioners

- When/for what do you usually contact your local health clinic?

- How do you usually go about contacting them?
  - How does that work? Do you think it could be improved somehow?

- When you need advice, information, or an opinion on a health/sickness/symptom query from your local health clinic/physician or nurse, in what way(s) do you receive this?
  - Are there additional ways of talking to/interacting with them that you can choose between?

  Probes, if needed: E.g. you visit the clinic, the physician or nurse make a home visit, talk over the phone, send an e-mail query, chat with a medical person etc.
• Do you sometimes receive health related information from local or national health/medical organizations/centres/representatives without asking for it?
  
  o What might that concern?

Probes, if needed: E.g. information about recommended or obligatory vaccinations; information about seasonal contagious diseases and how to avoid/minimise/treat them (like flu) and outbursts of epidemics like zika.

• If so, how do you receive this information?

Probes, if needed: E.g. from family, friends, when visiting health clinic or having home visits; as send-outs from local or national health centres/organizations (by mail or e-mail), from posters at public places, broadcaster through television, radio, and/or newspapers etc.

  o Further probes: Do you receive information about how to keep healthy (diet, exercise, alcohol, tobacco and drug consumption and how to quit/avoid that); how to put together nutritious meals; what to eat at different ages or when pregnant; what foods to avoid or eat in moderation (like sugar); how to prepare and store food and drink/water to avoid it going bad; hygiene and vitamin and other supplement information or recommendations etc.?

  o If so, how do you receive this information?

Probes, if needed: E.g. from family, friends, when visiting health clinic or having home visits; as send-outs from local or national health centers/organizations (by mail or e-mail), from posters at public places, broadcaster through television, radio, and/or newspapers etc.

  o Do you search for this type of health information?

    o If so, how? Why/why not?

  o Do you think this type of information is important?
If yes, which information? All, some?

Important for yourself? For other people?

Why/why not?

**Theme 3: Online health information / website experiences**

- Do you know about any web based online health information resources available to Cubans today?
  - What resources? How did you hear/learn about them?
  - Have you ever visited or used them?
    - For what? How often?
    - Why/why not?
  - Do you know other people that use them?
    - For what? Why/why not?

**Theme 4: Online health information / website needs**

- What sort of information would you like to find on a public website for online health information?
  Probes, if needed: E.g. information about medicines/medication (doses, side-effects, how and when to take them, what to be careful with when eating certain medicines, where to find medicines), diet, exercise, epidemics, seasonal diseases etc.

- What would you like to be able to do on a public website for online health information?
  Probes, if needed: E.g. participate in forums with other people who share the same health related issues as you, download information, get an individual diet plan etc.