

THINKING DESIGN FOR WOMEN'S HEALTH

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ABSTRACT

The pursuit of a healthy lifestyle and self-care for better well-being due to the development of the education level and economic power of the female population, the advances of experiential design in future healthcare, and the growing considerations of gender-specific concepts are the explanations for this research to take action towards establishing a new design strategy for developing devices meant for women's health. These implications constitute the blueprint for further exploration and development of a Female-Focused Design Strategy (FDS). The data collection methods for synthesising the FDS comprised of extensive literature review and a mixed methodology of quantitative and qualitative survey studies. The analytical evaluation from the studies concluded with six attributes for initiating female-focused design – the F.R.I.E.N.D. model. This research outcome can reach out to two groups of users; user of method (designer) and user of application (female end-user). This paper presents the qualitative feedback from four designers who were introduced the FDS and asked to apply it to any stages of a design process for a personalised healthcare device for women in the self-care context. The common consensus from them was that the knowledge of user needs and aspirations as presented by FDS is valuable. It relates well in the idea generation stage and semantic analysis as it serves well to introduce what are the minimal underlying concerns of most women would be. The next possible further research is to know the relative importance of attributes empirically – be it related to form, function, or usability, so such information could interest designers in an intuitive and iterative manner.

Keywords: Design strategy, female user-product attributes multi-disciplinary contribution

1 INTRODUCTION

The quality and effectiveness of design solutions rely, on a large extent, on the availability of information about the future users of new products. The findings discussed in this paper are based upon a research project (funded by the School of Design and Environment, National University of Singapore) that concentrated on the development of a design strategy based on qualitative and quantitative data to identify the perception and acceptance of women towards female-focused healthcare applications designed for them. It aims to offer insights on what aspects to take into account in satisfying the wishes of specific groups of women and integrate these better in the design process, thereby reducing the risks involved in designing for women.

The objective of this paper is to introduce the outcome of the research project before - a Female-Focused Design Strategy (FDS) and present the qualitative feedback of the strategy when it is applied to the design process of Female-focused Healthcare Applications (FHA), targeted at women for a very important context – self-care. An initial concept of the FHA was first introduced as the Mobile Health Communication Unit (MHCU) targeted for women's health (Xue, 2005). Users may refer to the network-based healthcare information system (IS) imbued into the MHCU for healthcare monitoring, information, and support. It was created with female-focused design qualities and emerging technologies that could help women understand and better manage their health. It was envisioned that such a dedicative device could empower different groups of women such as the pregnant who require prenatal and postnatal care; the non-pregnant who may be suffering from chronic illnesses or any others who may be particularly interested in recording their health management regimes (Denton, 2001; Millard & Fintak, 2002; Protti, 2007).

2 EVIDENCES TO SUPPORT DESIGN FOR WOMEN'S HEALTH

Home glucose monitors, customized wearable devices, mobile electronic patient records, wireless Internet-linked systems, and potentially “smart devices” that can “think” by themselves are converging to

revolutionize self-care health systems in many countries, making it possible for people to play a greater role in maintaining their own health in search for self-care. In recent years, women's clinical needs are also changing, mainly because so many of them are deferring childbirth in order to pursue higher education or a better career and large numbers of women face problems with infertility as they have their families later in life (Waldron, 1997). Interestingly, women are significantly more likely than men to look for health and medical information (Miles 1991). Women now have more economic power and they demand that any new treatment options demonstrate cost-effectiveness. The convergence of these factors has resulted in making self-care for women a viable design opportunity today. There is a true demand of minimally invasive, cost-effective products to address the clinical needs of women (Waldron, 1997). Past research has suggested that users become attached to certain products, as they convey a personal and special meaning over and above the product's functions (Dittmar, 1992; Picard, 1997; Jordon, 1999; Djajadiningrat, et al., 2000). However there is a lack of user-focused designs provide the kind of satisfaction and comfort which is therapeutic and desirable for the acute care of women. It has often been debated that women have been ill-served by a male dominated product design arena. Women differ in terms of operation, perception and understanding of medical devices (Bren, 2005); hence an investigation between women's acceptance of self-care applications specifically designed for them is essential.

3 SYNTHESIS FOR A FEMALE-FOCUSED DESIGN STRATEGY (FDS)

The FDS was formulated through three different means: (1) the reviewing of literature extensively where select theories from the domains of female gender psychology, characteristics of women, tasks, products and contextual matters are discussed, as well as conducting survey studies to gather primary data about women's needs, perception, intention, and acceptance level pertaining to the design and use of FHA; (2) a qualitative pilot-study was carried out to investigate gender perception relating to product language, identity, and preferences (Xue & Yen, 2006; Xue & Yen, 2007); (3) a quantitative study (Xue et al., n.d.) being conducted through structured questionnaires to explore the differences in perception, intention, and acceptance level of FHA among different ages of women, with different influencing social backgrounds. Factors identified from these studies for formulating the FDS includes safety, confidentiality, manageability, standardisation, and trustworthiness.

The results of this combination of review and studies, after going through a keyword analytical reference exercise, enabled the formation of the FDS through a model entitled 'F.R.I.E.N.D'. It represents six attributes (i.e. firmness; restraint; intricateness; empathy; naturalness; and dependableness) among two dimensions (i.e. communicative and utilitarian) to allow for a great amount of variability involved in generating female-related design possibilities with it (See Figure 1). In brief, women today want to be seen of as competent, capable, and in control of their lives. No doubt, they have embraced some 'mannish' attitudes, organising their personal lives, interests and likings; demanding a firm attitude to issues surrounding them. Yet, the "small is better" syndrome has permeated the female mentality from early times, probably because of the female physis due to anthropology. The state of being physically restrained makes it practical and psychologically sounder for women. Next, women show a distinct preference for more colour and graphics (Basow, 1992), which refers to some expectations for finer detailing and intricacy. Women show more comforting behaviour, even of strangers, than men do (Hoffman, 1977; Zahn-Waxler, et al. 1992). Empathy is something they readily exercise, in being sensitive to comprehend the state of others. Women tend to show a preference for more rounded shapes, and favour informal rather than posed graphics (Zhang, et al., 2006). They get more comfortable with organic and natural forms. Last but not least, women choose products that are worthy of reliance; these products are expected to consistent in performance and more importantly be socially dependable. More details about the background analytical thought process of constructing these attributes and dimensions could be read from another paper (Xue & Yen, 2008).

Designers tend to visualise concepts better through models and demonstrate to others features users want to use and their possible extensions within the system (Saffer, 2007). Although the current positioning for the attributes versus the dimensions shown are not empirically determined, they are considered to be overlapping notions in female-focused designs. The dark to light tones surrounding each attribute represents

the ability for each attribute to vary in emphasis accordingly to what is needed for each particular design. A designer's interpretation of the weight age of each attribute may vary across the colour gradient due to budget, client's preferences, contextual and cultural differences.

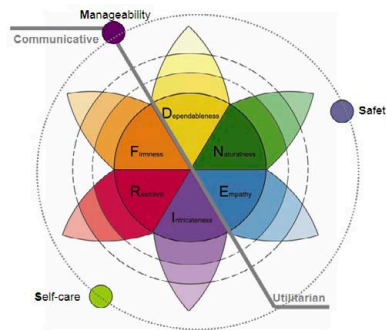


Figure 1 FDS - 'F.R.I.E.N.D.' model

4 METHOD

Users have a point, but standards, measures, and methods have tended to be developed for designers' use only. There is a need to evaluate the FDS on the whole as well as get feedback of the method generated from the strategy. The FDS was introduced to four fairly young designers – 3 industrial designers and 1 interactive media designer. They were chosen as Garner and Duckworth (1999) found that recently graduated practising industrial designers consider themselves as poor researchers and would now view researching skills as an important aspect of design education. They were briefed on the explanation behind the different dimensions, background concepts, and attributes and were then asked to apply the FDS to any stages of a design process for a FHA.

5 RESULTS

A consistent comment made by all the four designers is that the knowledge of user needs and aspirations as presented by FDS is valuable for their designing processes. It relates well in the idea generation stage and semantic analysis for concepts as it serves well to introduce what are the minimal underlying concerns of most women would be. Designers find it difficult to dedicate time to conduct additional user research, particularly freelance designers, and perceived that they might 'lose out' when spending extra time and budget on user research. The fact that the formation of FDS is largely based on a quantitative survey of a substantial subject size, its value to contribute to the design process is credited for. Hence, FDS is seen as helpful for a starting point in "setting design for designing".

Sometimes clients are knowledgeable about the market and have pre-determined what they are looking for. They may insist on their perceptions, although the clients' market research is often based upon sales figures. Designers have observed that perceptions about the need for user research are changing – reporting that designing now tends to be more market driven and that user research is being emphasised more strongly. It is seen as a quick and effective strategy which consists of various obvious steps which can function on its own to advise designers depending on their cultural and social contexts (see Figure 6).

"If my client comes to me and I don't know the answer...he'll then go to someone else who does... he'll say 'just get on with the design work'...the designer is expected to know everything." "It seems to be able to improve designing...I would be happy to try it with some training."

However, after the designers were told of the large number size of subjects involved, they began to question on the quantification of survey results, which may have contribute to the loss of in-depth information, as vital insights into attitudes and perceptions of women may be filtered out in the process for generalisation and simplification purposes. *"Using the model to generate new designs may be constraining... due to changing trends of society too...you end up doing what other people have in their imaginations... it's up to*

the designer to push a bit further.” “I see the model being applied to a small-scale study and still be useful, due to the opportunities for communication with users and the qualitative character of each attribute.” Deeper research into each attribute according to the product’s pragmatic and syntactic concerns is required for further product development.

6 DISCUSSION AND CONCLUSIONS

The FDS is meant to open up the current mentality of designers, so used to working on functional elements of a product and then considering the semantics for it. The ‘needs’ retrieved from end-users are summarised with broad terms in the FDS and they require ‘translation’ into designs by the designers. It is difficult for designers to describe their own designing process – partly because it varies from project to project, and mainly is intuitively driven. Such processes are difficult to articulate and analyse, as they tend to happen unconsciously. Design processes vary substantially between different product types (complex area or more focused targets), design tasks (incremental change or ‘blue-sky’), and individual approaches due to experience and training. The approach an individual designer may take to a design task may vary significantly from designer to designer. Although a large number of formalised techniques and systematic approaches are available, they are rarely applied as such. Although the attributes are meant to differ in emphasis from product to product, the next possible further research is to know their relative importance empirically – if related to form, function, or usability. Subsequently such information could still be used in an intuitive and iterative manner by designers. The FDS aims to be sustainable on its own in the long run and dynamic enough to extract a diversity of parameters as well as differentiate possible markets. The results obtained give indications for female-focused design parameters which can be in turn introduced to different target audiences amongst the female population. Although it does not offer anecdotal design principles, it does offer distinctions that can help designers to understand what female users in relation to their health think and provide a richer context for interpretation for gender-specific design.

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