

# Understanding Wellbeing Practice in Rural Bangladesh

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## 1 INTRODUCTION

A number of studies have shown that technology adoption and usage among rural population differ from that of urban regions in the developing countries [20, 16, 19]. A body of research in Human Computer Interaction (HCI) and related domains has grown to address various wellbeing problems and facilitate health care information for users with a wider dimension of accessibility [10, 12, 13, 14, 15, 17, 18]. In this study, we investigate the villager's interaction with Information and Communication Technologies (ICT), and how that influences their connectivity with various wellbeing supports. Our finding shows that women's limited access to ICT; shared, mediated and supervised usage of technology; and trust are highly influential factors in seeking help through ICT. We aim to design more accessible, sustainable and culturally appropriate technology for this rural population.

## 2 METHODS

Our on-going study consisted of observations, and focus group discussions (FGD). So far we have conducted Three 30mins long FGDs with six to eight rural women. Our access to the villages in Jessore in Bangladesh is facilitated by an NGO, namely, Rural Reconstruction Foundation (RRF) [9]. Their field-workers take us to sites in the villages and associate an introductory discussion to explain the purpose of the research to the community and address their questions and concerns. The initial recruitment happens from there. Further participants are recruited through a snowball sampling. The FGD topics include their daily life, the usual forms and reasons of social, physical and affective issues they suffer from and their healthcare practices. The FGDs are audio recorded and noted down in the ethnographer's notebook. We also observe our participants to understand their daily lifestyle and recorded them in her jotted notes. The observation sessions are generally two hours long.

## 3 FINDINGS

The process of data collection is on-going and we are still working on formal analysis. However, this section presents some of the primarily emerging themes from the existing data.

### *Types of physical and mental health problems they suffer from.*

Based on the data in hand, we have found that men and women often suffer from various cardiac difficulties including high and low blood pressure, back-pain, stomach pain from acid, kidney-stone, tumor in various parts of their upper and lower abdomen, etc. On the other hand, they suffer from anxiety, stress, tension, and depression because of various social, professional, familial, and economic reasons.

### *Existing Health-care Supports.*

We explored the exiting supports in the district and found that there are one general hospital, also known as ‘Sadar’ hospital, and one military hospital, 8 health centers, 22 sub-centers, and a Tuberculosis (TB) clinic in the district. Only 224 doctors serve around 3M of the residents of this district. The villagers visit the local health centers and sub-centers for minor problems and ‘Sadar’ hospital for child birth, surgery, and operations.

Apart from these, there are a number of health-care information services and health-care initiatives. There are websites which provide detailed information about doctors and specialists of various medical domains, their proximate location and schedule over the week, how to schedule appointment, and guideline for personal care [2, 4, 5, 3, 6]. There are also websites and Facebook pages which helps help seekers with mental health-care information and available supports [1, 7, 8]. However, the population we are currently engaged with rarely seek help from these online and open-access resources.

### *Roadblocks to seek health-care Information.*

There are various challenges and barriers that rural population face while seeking health-care information while they, or their family members are sick. Since the number of patient is high in comparison to the number of professional health-care provider, always there is a long queue in front of their chamber at the health centers and the hospitals. The participants mentioned that if they go to see the doctor, their whole day is a waste in the waiting room. Since the workload is high, it is worthless to seek treatment for troubles. The health center being far from their villages and the transportation is a major challenge, unless the troubles are something severe, they would not bother about it. However, whenever they visit the professionals, they would ask them about few of the problems of their family members, relatives, and friends.

Most of the time the women fail to identify the early symptoms due to lack of knowledge. For example, a participants mentioned that she was suffering from acidity in her stomach and followed the suggestions of elders in the family. Upon bearing the pain for several years, she finally visited the clinic and it was identified as tumor in her abdomen.

When we asked our participants about the existing online and web-based healthcare supports, many of them mentioned that they have heard of these services. Some participants mentioned that they watched the advertisement on the Television (TV) during the commercial breaks of programs. However, we found only one woman who tried using it and failed since the system asked her to press some array of buttons which was confusing to her.

## **4 DISCUSSION**

This work will contribute to several broader conversations that are relevant to the symposiums theme of HCIxB, as we discuss below.

### *Women empowerment*

The village women ask the professional about the health problems of their fellow while visiting them for personal health issues. This support is based on specific interest and need in a limited support context create solidarity among the village women [21, 22].

Based on a number of studies in global south, we know that women often enjoy the benefits of various technologies less than men. We show that the health issues of women are taken less seriously in the family. This a design challenge since we want to empower women remaining within their existing social setting [19].

### *Digital divide and accessibility challenge*

The population we are studying is low-capital, low-income and low-education. Most of them have insufficient expertise to run complex applications and systems. In this regard, our challenge is to design a better access for them in a way that would be compatible with their capability and enhance their capacity to seek information regarding healthcare and wellbeing. We discuss this intersection of digital divide, low-resource, and limited access under the broader theme of across intersection in HCIxB19.

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**EDUCATION**

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- **Cornell University, Ithaca, NY, USA** Aug 2016- present  
PhD in Information Science  
Advisor: Susan R. Fussell
- **Bangladesh University of Engineering and Technology, Bangladesh.** Jan 2008- Feb 2013  
BSc in Electrical and Electronic Engineering (EEE)

**RESEARCH INTERESTS**

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Human-Computer Interaction(HCI), Information and Communication Technology and Development (ICTD)

**PUBLICATIONS**

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1. **Sultana, S.**, Guimbretière, F., Sengers, P., & Dell, N. (2018). "Design Within a Patriarchal Society: Opportunities and Challenges in Designing for Rural Women in Bangladesh." ACM Conference on Human Factors in Computing Systems (archived) (**CHI 2018**). (**Best paper award**)
2. Shahnaz, C.; **Sultana, S.**; Fattah, S.A.; Rafi, R.H.M.; Ahmmed, I.; Zhu, W.-P.; Ahmad, M.O., "Emotion recognition based on EMD-Wavelet analysis of speech signals," in ***Digital Signal Processing (DSP), 2015, IEEE International Conference on*** , vol., no., pp.307-310, 21-24 July 2015
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6. **Sultana, S.**; Shahnaz, C., "A hierarchical approach of Speech Emotion Recognition based on entropy of enhanced wavelet coefficients," ***Electrical Engineering and Information & Communication Technology (ICEEICT), 2014, International Conference on*** , vol., no., pp.1,5, Dhaka, Bangladesh 10-12 April 2014.

**RESEARCH EXPERIENCES AND PROJECTS**

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- ✓ Understanding the practice of wellbeing in rural Bangladesh and design around it.  
With **Susan R Fussell** and **Syed Ishtiaque Ahmed**.
- ✓ Understanding the Challenges and Barriers Faced by Women in Rural Bangladesh.  
With **Nicola Dell**, **François Guimbretière**, **Phoebe Sengers**, **Syed Ishtiaque Ahmed**.

**PROFESSIONAL EXPERIENCES**

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- Graduate Researcher, Cornell University, from August 2016- present.
- Lecturer, Independent University, Bangladesh (IUB), from Jan, 2015- present (On Leave)
- Lecturer (Part-time), University of South Asia, Bangladesh, from Sep, 2014- Dec, 2014.
- Physical Chip Design Engineer, PrimeSilicon Technology(Bd) Ltd, from August, 2013 – July, 2014.