Emotional Wellbeing: Technology for Mental Health in Developing Countries

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Abstract

Emotional wellbeing in the context a developing country is enormously important for the society, environment and more. However, this topic is often overlooked in the mainstream discussions around development and health in ICTD. We focus on this area and study the potential of technology to support the mental health condition of the urban communities in developing countries. In this paper, we have placed three stories from urban Dhaka, Bangladesh – the first one is situated in the context of urban women facing sexual harassment in their daily lives, second one focuses on urban undergraduate female students with their engineering education and the third one illustrates the level of stress caused by multimodal traffic system in Dhaka. The unique requirements of the environment, social context, and values call for custom and situated design approaches, which can be an interesting starting point to take a look at cross cultural studies in reference of similarities and differences compared with other contexts

Author Keywords

Urban ICTD; Mental state; Emotional wellbeing; Harassment; Multimodal Traffic; Bangladesh;

ACM Classification Keywords

H.5.m. Information interfaces and presentation: Miscellaneous

Introduction

Emotional wellbeing –the mental state of a person, is closely related to one's physical surroundings, has gained significant attention in recent years [5, 6] as it directly or indirectly impacts the physical environment as a result. However, this area is not well visited in the context of developing countries.

There are challenges that are unique in developing country context that requires specialized attention to deal with social, economic and other constraints. The developing country context, as it has been mostly pronounced in literature, emphasizes on the rural communities [9, 10], or the marginalized populations of

urban areas who are economically, or educationally deprived (see [7] and [8], for example). As a result, different socio-economic problems within the urban populations with better financial and educational resources often remain unspoken of. It is often the fact that the urban communities in developing countries receive many boons of urbanization, are able to use more advanced technologies, and have access to better education in their life. However, the problems associated with the fast and unplanned urbanization affect their lives badly, and they seldom get any support for that. One such problem involves the psychological stresses that these urban communities have to deal with.

We focus on our work on urban youth of Bangladesh regarding well being through socially challenging conditions. We discuss our work *on a) urban women facing* harassment [1] *b) urban undergraduate women performances in Computer Science Laboratories* [16] *and c) urban drivers through multimodal traffic* [2] – all in the context of Dhaka, Bangladesh. We discuss the specific issues in the later section, illustrating on options for collaboration and ending the discussion through conclusion section.

Harassment in Urban Dhaka, Bangladesh

Harassment is a global problem and solution approaches offer a large variety of social [12, 13], technological [1, 11], frameworks to generate awareness, connectivity which provides a positive space where harassment victims can feel safer along with general goal to reduce the problem.

Public sexual harassment is also a widely prevalent problem in Dhaka, and our study on the university going women, like many other previous studies, reveals how public harassments limit women's movement on the street. This problem, in turn, limits their participation in workplaces, and more importantly causes a very bad psychological effect on the mind of young women. Our participants expressed their frustrations, grief, and anxiety around this problem [1].

In response, we designed a mobile phone application, a website, and a social media platform, together called 'Protibadi' – a person who fights. Our designed offered in-situ call for help, informing friends and families, and reporting and sharing incidents and experiences on website and social media. While this system received a lot of attention in the beginning, soon we started to see that waning out. Women who were posting on social media confronted harsh criticism from conservative individuals. Many users felt uncomfortable to call for help after being harassed. Some of them said that a crime heat map would make their parents worried and they would further limit their daughter's movement.

The limitation of Protibadi demonstrated how the mental wellbeing of an urban young woman in Bangladesh is related with big socio-cultural issue. This opened up a new space for HCI and ICTD to engage the community to support individual's psychological wellbeing within a culturally contested environment. At the same time, this study pointed out why 'connecting people publicly' is not always the right way of development. In our subsequent works with our colleagues, we have explored the potential of a private phone-call based counseling system called "*Kaan Pete Roi* [17] (We are waiting to listen to you). We are also trying to develop a private social network for the female factory workers in Bangladesh.

Figure 1. Women only Poster Competition to encourage Female Undergraduate Students [16]

Figure 2. The multimodal, congested traffic of Dhaka, Bangladesh[2]

Laboratories for Urban Undergraduates

The technology divide is a global problem which can be shortened to a smaller problem having more female students interested in STEM. The problem has its own challenges when we have taken a close of at the urban undergraduates studying at the department of Electrical and Computer Engineering in Bangladesh.

The urban female undergraduates have proven themselves through the ways towards undergraduate studies in an engineering department. However, the challenge remains on how the undergraduates perform in their hands on skills in laboratory classes [16]. There are challenges from social perspective asking young female students to remain quiet and often mental barriers of the female students themselves. Laboratory enhancement decisions must consider the social cultural barriers of the semi conservative Muslim society in the context of Dhaka, Bangladesh. *Emotional wellbeing* here relates to a female student's ability to perform towards her best capabilities without any artificial barriers provided by the society. This is directly related with student's confidence and ability. We are continuously working to improve the situation through initiatives within the institute (one poster competition is shown in Figure 1) along with nationwide initiatives like Code It Girl [18]. The efforts through discussion and workshops have shown positive impacts and has generated awareness which is the first step of handling a problem.

Urban Drivers

There has been research work focusing on the mental state of drivers in the western context [3, 4]. The problem exacerbates in Dhaka, Bangladesh where there are unruly drivers not following traffic rules, multimodal traffic having vehicles of varying speed sharing the same road along with poor road infrastructure [2]. A glance at Figure 2 would enable us to understand the traffic conditions of Dhaka, Bangladesh. We need to focus on the external environmental conditions to find out about the *wellbeing* of a driver, which, if handled adequately, may offer great ways to suggest proper intervention points [14, 15] through the stressful driving procedure. In our initial exploration, we attempted to measure the blood pressure, facial expression, and heart beats of the drivers while driving on the roads using different kinds of sensors. In the next steps, we plan to develop e mobile phone application to so the same and provide the driver and other stake holders with information and recommendations to improve the driving experience.

Scope for Collaboration

There are problems that are unique in the context of Bangladesh but open up new opportunities of cross cultural studies. Many of the cultural aspects that we are encountering are shared by neighboring countries like India, while many others are shared with other Muslim countries like Indonesia. Again, many of the sensor or mobile phone based design interventions are common in USA and Europe that, over the cultural differences, can be tested, modified, and deployed. Disciplinary wise, this research moves across the boundaries of computer science, electrical engineering, psychology, sociology, and development studies.

Conclusion

Our research on the urban population of developing countries focuses on emotional wellbeing. This is an emerging research area where connecting existing research with ongoing developing country challenges would open up new opportunities in coming days.

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