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# Opportunities for HCI4D and Refugees: A Focus on Antenatal Health for Syrian Refugees

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## **Abstract**

The influx of Syrian refugees in to Lebanon has placed a large strain on the resources of the small developing country. This has created tension between the host and refugee populations. Additionally, the population's health indicators are mimicking that of marginalized communities in developing countries. Consequently, it is possible to adapt designs and methodologies used by HCI4D researchers to improve refugee reproductive and maternal health. This paper will present both our work with Syrian refugees in rural Lebanon and work done by the HCI4D community with an aim to highlight areas of collaboration. Additionally, the cultural sensitivities needed in adapting designs for this population.

## **Author Keywords**

Refugees, Lebanon, Syria. maternal health, digital health.

## **ACM Classification Keywords**

H.5.3 Group and Organization Interfaces

## **Introduction**

Low access to healthcare is characteristic of refugees residing in both developing and developed countries. In

developing countries, such as Lebanon, Syrian refugees find themselves in dire living conditions as they reside in the poverty pockets of the country. The presence of Syrian refugees entails an added burden to the already under resourced governmental and non governmental organizations (NGOs). Consequently, after crossing over borders into host countries Syrian refugees experience tension from host communities who view them as a burden. This is an added complexity that may not be experienced by other communities in developing countries. The common usage of smartphones found in our research presents us with genuine opportunities for using technology to aid this population.

This paper will present the antenatal health context of Syrian refugees in Lebanon, with an aim of seeking opportunities for collaborations. Collaborations with HCI researchers that have worked on reproductive, antenatal and maternal health in developing regions would allow us to explore how designs and methods can be adapted for this refugee context.

### **Related Work on Maternal and Reproductive Health from HCI4D**

Despite the lacking work on designing for refugee health it is possible to draw on work done in developing countries with marginalized communities.

Ramachandran et al provided social workers with persuasive health messages on their phones to be used during counselling sessions [9]. In similar contexts, community-led video education systems allowed social workers to compose locally relevant health education videos [5,7]. Videos are then viewed by women in the community. Tiwari and Sorathia used an audio visual application that allows mothers of low literacy to call for

emergency services and identify, through pictures, their health problems [11]. Audio recorded advice would then be sent accordingly. SMS has also been used to send bulk messages on maternal health to women. The system also allowed participants to send messages to a nurse who would then respond with more personalized messages [8]. Other systems have been designed to support social workers in identifying high risk cases of pregnancy [1,6,11]. These include a mobile phone application that allows data collection such as registering new cases and inputting of follow up meetings between social workers and women in rural areas [1]. The designs would then indicate to the social workers any red flags with advice on how to proceed.

### **Syrian Refugee Antenatal Health in Lebanon**

A study showed that reproductive tract infections was common among Syrian refugee women visiting clinics (53%) and that 27% of pregnancy resulted in preterm deliveries [10]. To a large extent this has been attributed to the under utilization of antenatal care (ANC) services. The UNHCR's Health Working Group in Lebanon has highlighted a gap in ANC service provision. Only 20% of refugees met their target for ANC visits during the first half of the year 2015 [4]. Major barriers to utilization of antenatal care were identified as being: cost of healthcare, transport to healthcare facilities, and lack of female healthcare providers [10].

The Syrian refugee population's initial point of access to healthcare is through Lebanese primary healthcare centers (PHCs) [12]. PHCs function under the umbrella of the Ministry of Public Health (MoPH) but are owned and managed by separate entities. 67% of them are

managed by NGOs, 20% by local municipalities and 13% by the MoPH itself [2]. PHCs therefore vary in level of resource and capacity, and hence in the quality and cost of services they provide.

### **Considerations for Designing for Syrian Refugee Antenatal Health in Lebanon**

In my research with Syrian refugees residing in Informal Tented Settlements (ITs) we aimed to explore and investigate the feasibility and acceptability of incorporating technology into the provision of ANC for refugees in rural Lebanon. The aim was to account for the refugee women's health beliefs, health experiences and their social networks when exploring the use of technology. We conducted focus groups with 55 female refugees in rural Lebanon.

Our exploration of the refugees' experiences in accessing ANC services however surfaced a number of factors that must be taken into consideration when designing for antenatal health. We found a varying range of literacy levels (technological and language) among the population. Additionally, we surfaced the social structure that allow for peer support regarding health. The women would accompany each other to the clinics, seek each other out for health advice and rely on more literate women to read written material given to them regarding medication. One woman, called the *Sheikha*, was usually sought out more often for advice as she is considered to be the older and wiser woman of the community. Furthermore, the women were found to have medicalized attitudes to healthcare; they indicated that the main reason to go to healthcare providers is to receive medications. Lastly, our work also found that the negative experiences faced by Syrian refugee women with healthcare providers (long

waiting times, inability to ask questions, rushed visits) deters them from further accessing healthcare.

Our findings also point to a number of specific opportunities for design, from conventional infrastructure for transportation logistics and appointment making, to better communication with healthcare providers (possibly through peer networks) and digital media for health advocacy. With these factors and opportunities in mind, we conclude that there is real potential for sensitively designed digital platforms to significantly improve ANC of the Syrian refugee population living in Lebanon.

Several of the literature in HCI4D, previously mentioned, address similar issues faced by this population. However, there are some cultural sensitivities that this population faces that requires an adaptation of current work for this population. The fragmentation of the healthcare system that the refugee population accesses entails work with multiple stakeholders. Furthermore, the overstretched healthcare system entails limited human resources to attend to this population, therefore using health workers and social workers as points of entry may not be feasible. Lastly, the tensions between the host and refugee communities should be accounted for as it has generated distrust between female Syrian refugees and healthcare providers.

### **Conclusion**

There is great potential for HCI4D designs and methodologies to be adapted to aid the Syrian refugee population. The opportunities are further amplified by the high usage of smartphones by the population. However, designs to be deployed in the Lebanese-

Syrian refugee context should consider, the fragmentation of the healthcare system they access, tension between host and refugee communities and the negative engagements refugees have experienced with healthcare providers. Therefore, collaborations that leverage previous HCI4D experiences and experiences working with this community would be of great benefit for aiding this population.

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