Designing for Use and Non-Use: The Case of Neighborhood Clinics

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Abstract

Urban cities, particularly those in the Global South, are often characterized by high socioeconomic differences in densely populated regions making the equitable distribution of resources by government organizations a challenge. Inequitable distribution could further increase the gap between socioeconomic groups, necessitating a dialogue on what constitutes a "fair" system. We explore the designing of interventions to encourage use and non-use by target and non-target groups respectively. We situate our discussion of use and non-use in the context of Mohalla (neighborhood) Clinics - an intervention introduced by the government of Delhi (India) in 2015 for providing access to basic health care. Though these clinics were designed and introduced with the objective of targeting the "weakest sections of society", their actual use tells a different story. Drawing on our data from an ethnographic inquiry into two Mohalla Clinics, we hope to stimulate a discussion on systems based on differential access to inform the design of similar interventions that might simultaneously target use and non-use by distinct groups.

Author Keywords

HCI4D; ICTD; public health; India; use; non-use

ACM Classification Keywords
H.5.m. [Information Interfaces and Presentation (e.g. HCI)]: Miscellaneous

Introduction
An ever-increasing population and widespread poverty have made access to healthcare difficult across the world. In low- and middle-income countries, access to healthcare can be limited by geography, availability of healthcare workers and medicines, and the lack of public financing for health services [15]. In developing regions of Asia, Latin America, and the Caribbean, health spending can cause income to dip below the poverty line, further exacerbating health issues, and this trend has been observed throughout low-income countries [9, 3]. A study has also shown that 1.3% of the world's healthcare workers care for the countries that receive 25% of the world's disease burden [12]. In India specifically, public spending on health is extremely low [16], and the level of individual out of pocket spending on healthcare is one of the highest in the world, even among those living in poverty [5]. The quality of healthcare is also low due to shortage of staff and poor planning and management of healthcare institutions [16]. These issues are hardhitting for those in poverty, evidenced by inability to access healthcare even when facing serious health concerns [7].

To address this paucity of healthcare resources in Delhi, the capital of India, the government of Delhi instituted the Mohalla (neighborhood) clinics system. The Aam Aadmi Party, the current governing party, introduced Mohalla Clinics in 2015 [1]. The clinics were advertised by the party's workers as a respite from long waiting times and costly healthcare, to cater specifically for the "weakest sections of society" [1] in Delhi. These clinics form part of a comprehensive three-tier health system proposed by the Delhi government to complement the existing network of government hospitals and dispensaries offering free healthcare [2]. At the third and lowest tier, Mohalla Clinics purportedly cover the last mile in the delivery of healthcare. They are operated by doctors who are assisted by staff and offer free-of-cost consultations to patients, medications, and over 200 kinds of medical tests. Government hospitals and polyclinics make up the first and second tiers, respectively. At present, more than a hundred Mohalla Clinics have been set up across Delhi to support the existing understaffed and overworked network of dispensaries and hospitals. The Delhi government purportedly aims to open a total of 1,000 such clinics throughout the city [2].

Drawing on our ethnographic inquiry, we argue that the Mohalla Clinics we studied are not being used the way the government of Delhi originally intended. Though the clinics are meant for low-income populations, middle-income populations seem to be using them more, giving rise to an imbalance of use and non-use [4]. There is a need for a system that can address the misalignment between intended and current use.

Related Work
Much of the current work in the HCI for Development (HCI4D) domain has focused on designing for marginalized communities and aims to bridge the so-called "digital divide" [10] by employing innovative solutions to overcome socioeconomic and technical challenges in resource constrained settings [8]. However, research that differentiates marginalized communities from non-marginalized communities is missing. As is true for most urban settings in the developing world, population composition of the state of Delhi is socioeconomically as well as ethnically diverse. Designing accessible health systems for such heterogeneous populations poses additional challenges regarding their targeted and actual use.

Baumer et al. [4] mention that there are many ways of conceptualizing use and non-use, also adding that there are shades in between–discussed by Lenhart and Horrigan [11]–that we may sometimes miss. Baumer et al. [4] further discuss the digital divide as a factor that induces non-use of technologies - when an individual might wish to use a technology but cannot, because those technologies may not be accessible, affordable, or available. We see parallels in the case of the Mohalla Clinics, where individuals and communities end up being excluded from making use of these clinics. However, no one is physically preventing these communities from using the clinics. It is not even high costs that are preventing use, as in the case of Wyche et al.'s work on Facebook use in rural Kenya [17]. Therefore, we look at other contributing factors, including some semblance of caste and gender hierarchies that keep out target users, *per se*, as in [14], who studied computer sharing in Indian schools and observed that children from lower castes and girls were left out of the fray. We also find class hierarchies affecting users as in Nemer's work [13] which found that while Internet use among favela residents increased opportunities for civic engagement, in practice, residents faced social exclusion and police brutality in attempting to cross social boundaries. In Burrell's work [6], we find a parallel flavor of exclusion, given its study of young men who frequented Internet cafes in Ghana hoping to meet and communicate with foreigners online; though these men were "connected", they were subject to an online culture that followed Euro-American norms as well as low quality and expensive access to connectivity. Our research uncovered a similar trend, where we found that even though targeted non-users (or "false negatives") were permitted in these clinics and non-targeted users (or "false positives") were not expressly sought, external sociocultural factors determined use.

Proposed Work

At present, we have interview and observation data from private clinics, Mohalla clinics, a government dispensary, and slums - including interviews with patients, slum residents, doctors, staff, and frontline health workers. Our compiled data reveals a story of limited access to provided government resources due to factors such as the effect of geographical location of the clinics, hours of operation of the clinics, isolation of information within the in-group and limited reach of social workers as well as nuanced constructions of socioeconomic status, gender roles, and perception of government services - particularly free services. We believe that these challenges to use are not unique to the case of Mohalla Clinics and might have propped up in different contexts around the globe. To address these shared challenges and the situation of unintended nature of access, we invite a discussion between researchers focusing on the following questions:

- How can we inform low-income groups about services given the isolation of information within communities divided on sociocultural boundaries?

- How can interventions be designed to discourage use by non-target groups? Is it ethical to hinder access to resources for a particular socioeconomic group by design, even if they already have access to that resource–in this case, healthcare–through other means?

- Can we leverage existing human resources (such as front-line health workers in this case) and off-line and on-line social networks to inform target groups about government services? How can these social networks transcend social boundaries instead of exacerbating them and facilitate information sharing between communities?

Conclusion

With this proposal, our aim is to consider a framework based on use and non-use to deal with the challenge of equitable distribution of resources, and to begin a dialogue on designing interventions for highly populated urban settings with large socioeconomic differences where everyone may want to take advantage of the same resources.

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