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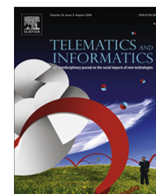

Exploring the role of telemedicine in improving access to healthcare services by women and girls in rural Nepal

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ABSTRACT

In this study, we explore the role of telemedicine in reducing gender-based barriers women and girls in rural areas of Nepal are facing to access healthcare services. Data were collected through a mixed method consisting of questionnaires survey, in-depth interviews, and focus group discussions with mobile phone and video conference-based telemedicine users. Data were analysed through descriptive and thematic analysis. Results revealed that telemedicine reduced travel restrictions, treatment expenses, and apprehension regarding sexual and reproductive health consultation. Moreover, telemedicine decreased travel time, which helps women and girls access timely healthcare services and improve time management for household chores and other activities. The conclusion is that rural telemedicine tends to reduce gender-based barriers for women and girls in accessing healthcare services. Finally, policy recommendations are provided for expanding these initiatives in rural areas.

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1. Introduction

Telemedicine, which refers to the delivery of healthcare services from a distance using information and communication technologies (ICTs), has been expanding in developing countries in recent decades. The technology has been noted for overcoming geographical barriers to access and deliver healthcare services to people living at geographically remote and inaccessible regions (Ecken et al., 1997).

Several studies have noted the influence of gender-based barriers on women's and girls' access to healthcare services in rural areas (Afifi, 2007; Ensor and Cooper, 2004; Khan, 1999; Mumtaz and Salway, 2005; World Health Organization, 2010). Gender-based barriers refer to the obstacles created based on gender dynamics, often stemming from inequalities, which impact men and women differently in society. These obstacles create travel restrictions for women and girls, limit their access to a source of income, and undermine their ability to participate in important household and community decisions and activities.

Though studies have highlighted the role of gender-based barriers in accessing healthcare services, little is known about the influence of telemedicine in overcoming these gender-based barriers. Feminist technology researchers argue that men tend to have more control over technologies (Faulkner, 2001; Grint and Gill, 1995; Wajcman, 2009). This would suggest that delivering healthcare services through telemedicine might not improve women's and girls' access to healthcare services due to their lower social positions in relation to technology. Until now, a substantial number of telemedicine studies are focused either on the clinical or technological dimensions and seem reluctant to shed light on the social aspects of telemedicine. As

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such, this study aims to explore the gender dimensions of telemedicine with regards to improving access to healthcare services in rural Nepal.

2. Literature review

The literature review will further present a rationale for the study while reviewing studies and documents relevant to our research. It therefore presents a discussion on access to healthcare that is important to consider in a developing country context. We reviewed related literature and more specifically studies focusing on the gender-based barriers to accessing healthcare since telemedicine is often presented as a solution to increase access to healthcare services. This should help provide an analytical lens in terms of understanding changes to healthcare access generated by the introduction of telemedicine. This is followed by a discussion of telemedicine in Nepal and the specific advantages (and shortcomings) of using telemedicine in rural areas.

2.1. Barriers in access to healthcare

Several barriers are hindering women's and girls' access to healthcare services; among them, studies have highlighted geographical, financial and socio-cultural factors as key barriers to access healthcare services. Penchansky and Thomas (1981) have categorised availability (service and facilities), accessibility (travel time to the service centre), affordability (direct and indirect cost for services), acceptability (socio-cultural factors), and accommodation (quality of services) as key barriers hindering access to healthcare services. Later, Millman (1993) viewed barriers as being structural (number, types, concentration, location, and organizational structure of the service providers), financial (ability to pay for the required healthcare services) as well as personal and cultural (acceptability, language, attitudes, and education). Similarly, Wang and Luo (2005) described barriers as spatial (geography and travel time) and non-spatial (socio-economic and demographic). In a more recent study, McIntyre et al. (2009) discussed physical, financial and cultural determinants of access to healthcare services. Besides these studies, more attention has been paid to the social determinants of health, which represents individuals' social, economic, and life conditions. Where people are born, grow, live, and work are believed to be important reasons for health inequalities (Braveman et al., 2011; Marmot et al., 2008). As a social determinant of health, gender is also considered an influential factor for health inequalities and uneven access to healthcare, particularly in developing countries (Men et al., 2011; Sen and Ostlin, 2008).

2.2. Gender-based barriers in accessing healthcare services

Research has identified travel restriction, access to and control over financial resources, and household chores as key gender-based barriers for women and girls to access healthcare services (Avotri and Walters, 1999; Balarajan et al., 2011; Khan, 1999; Mumtaz and Salway, 2005). Studies conducted in rural Pakistan found that access to healthcare services by women and girls is largely controlled by men. While this control is less stringent if women and girls access health services inside their village, it becomes very strict when they travel outside. Compared to women, travel done by girls was found to be under even greater control by men (Khan, 1999; Mumtaz and Salway, 2005).

Other than travel barriers, studies have highlighted traditional gender norms as a key determinant of women's access to and control over financial resources. In India, women and girls experienced greater difficulties than men to arrange expenses, which is a prerequisite to access healthcare services (Balarajan et al., 2011). Women's and girls' limited access to financial resources leads to delay in getting healthcare services (World Health Organization, 2010). Also, traditional family responsibilities, such as caring for children, preparing foods, fetching water, collecting firewood and other family needs restrict women's and girls' ability to manage time for their health (Avotri and Walters, 1999). Additionally, gender roles and norms also hinder women and girls from accessing formal education or health information, and engaging in political participation (Buor, 2004), which contributes towards poor health because of deleterious behaviors and unsupportive policies (Feinstein et al., 2006).

2.3. Telemedicine in Nepal

Nepal is a mountainous country where 83% of the land is hills and mountains (Baral, 1986). Telemedicine was introduced in Nepal in 1998 in order to reduce casualties from mountain climbing by monitoring vital signs at the Everest base camp through satellite connection with Yale University (Angood et al., 2000). Since then, government and non-government organizations in Nepal have spent nearly two decades developing and implementing various telemedicine solutions. As such, nearly all of the current Nepalese telemedicine initiatives are running on a non-profit basis and offering telemedicine services free of charge. Two types of technologies in particular have been used; real-time video conferences using standalone or web-based video conferencing devices and mobile phones for voice-based consultations (Nepal Mountain News, 2011; Pandey, 2012). Currently, five hospitals provide regular video conference-based telemedicine services with a dozen of rural health posts. In addition, two mobile phone-based telemedicine services are operating (Kathmandu University, 2015). The video conference-based services are primarily focused on assisting local health workers in diagnosing difficult cases as well

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