Global Telehealth 2015: Integrating Technology and Information for Better Healthcare
G. Gillis et al. (Eds.)

doi:10.3233/978-1-61499-505-0-46

Improving Mental Health Care for Young Adults in Badakshan Province of Afghanistan Using eHealth

Shariq KHOJA [a1], Maria Arif KHAN [a], Nida HUSYIN [a], Richard SCOTT [b], Abdul Wahab YOUSAFZAI [c], Hammad DURRANI [d], Fatima MOHBATALI [e], Dodo KHAN [a]

[a] *Tech4Life Enterprises, Canada and Pakistan*
[b] *University of Calgary, Canada*
[c] *Shifa International Hospital, Islamabad*
[d] *French Medical Institute for Children, Afghanistan*
[e] *Aga Khan Health Services, Afghanistan*

Abstract. Decades of war, social problems and poverty, have led large number of Afghan youth aged between 18-25 years suffering from mental health problems. Other important contributing factors include extreme poverty, insecurity, and violence and gender disparities, contributing to worsening mental and emotional health conditions in the country. The reported project is designed to strengthen the health system for improving mental health services in the province of Badakshan by improving awareness in the community and empowering frontline health workers. The project uses technological innovations, in combination with traditional approaches, to reduce stigma, enhance capacity of health providers and improve access to the specialist. The project also focuses on skills development of health providers, and empowering them to provide quality mental health services through access to interactive protocols, Management Information system and telemedicine.

Keywords. Mental Health, eHealth, Telehealth, Youth, Afghanistan, Telemedicine

Introduction

About 50% people over 15 years of age in Afghanistan face some kind of mental health problem. The prevalence is reported to be higher in young adults (18-25 years), adversely affecting families and reducing productivity in this key age group [1]. The most common issues in young adults are: depression, anxiety, post-traumatic stress disorders (PTSDs), and drug abuse. The Government of Afghanistan's 'Mental Health Strategy 2009-2014', focuses on community based interventions and improving treatment, but does not have the capacity to implement desired solutions. A mental health care system hardly exists outside the capital city of Kabul [2]. The purpose of this study is to design and test an intervention for strengthening a mental health system that improves awareness in the community, informs health practitioners, and makes treatment accessible to young adults in the remote province of Badakshan.

[1] Corresponding author: khojashariq@gmail.com.

1. Methods

The project follows a community-based interventional design, currently implemented in four districts of Badakshan province, while 3 districts in the same province have been taken as control. Achievement of three distinct approaches combine to achieve the stated goal.

1. Embraced: Reduce stigma and emphasize mental health disorders are treatable. This is being achieved through enhancing mental health awareness in the community using interventions, such as town-hall meetings and community discussions. Short message service (SMS) messages are being sent to registered participants in the 18-25 years age group.
2. Informed: Raise skills and knowledge of healthcare providers, and information available to them for diagnosing and treating mental health problems. This is being achieved by improving skills and knowledge development through face-to-face and virtual education for community health workers (CHWs), and clinicians at community health centres (CHCs) and district hospitals, and applying blended learning approaches with adult learning principles.
3. Accessible: Better diagnosis and treatment at the community and health facility level. This is being achieved by introducing eHealth facilitated service delivery (screening and telemedicine) for rural and remote communities. Service delivery has been enhanced by introducing telemedicine consultations

This paper presents the initial results from the implementation and adoption of the solutions in the case districts. The impact of the technology, comparing with the control population, will be done after the mid-term evaluation planned in mid-2015.

1.1. Technology

The eHealth program has two main parts: 1. SMS technology for young adults in the community; and 2. a mobile application for health providers. Both these technologies are described below.

1. SMS Technology for young adults: SMS messages are sent every week to all the registered users in the community. The messages are sent from the pool of simple messages in local language, targeting four key health problems, i.e., depression, psychosis, PTSD and drug-addiction. The purpose of these messages is to create awareness among the young adults about these mental health problems.
2. Smartphone application for health providers: The main objective of the mobile application is to empower the health workers based in the communities and the primary health facilities, for collecting information from and providing services to young adults suffering from four common mental health issues, i.e., depression, psychosis, substance abuse and PTSD. The mental health mobile application follows mental health Gap Action Program (mhGAP) guidelines and protocols from the World Health Organization (WHO), and approved by Ministry of Public Health, Afghanistan. This application is GPS-based, developed on android platform to facilitate the health workers in creating awareness and improving their knowledge about mental health issues. The application has also integrated two other applications i.e. an eLearning platform (Moodle) and a Telehealth

application (MDConsults). This application is developed in two languages English and Dari (local language) for better understanding and acceptability amongst the community.

1.1.1. Key Features of the Mobile Application:

The mental health mobile application is comprised of five key features.

1. Patient Information: Allows collection of individual patients' information for registration and HMIS of the mental health related issues amongst the community.
2. Guidelines and Protocols: Allows interactive access to specific guidelines for each mental health issue that would aid the health care provider to have a better diagnosis by reviewing the signs and symptoms.
3. mLearning for Community: Enables access to interactive learning material for the community through health provider for improving awareness in the community.
4. mLearning for Health Care Providers: Enables capacity building among Health providers to have a first-hand knowledge about the mental health problems.
5. Mobile Telemedicine**:** Mobile version of MDConsults is used to conduct teleconsultation between the patient and the physician in either live or store-and-forward mode, depending on the available connectivity.

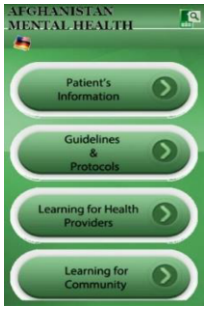

Figure 1. Menu of mental health mobile application.

Figure 2. Template of screening questions

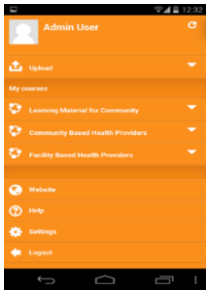

Figure 3. Screenshot of MOODLE

Figure 4. Menu of mobile telemedicine

2. Results

To date over 10,000 text messages have been sent to 1200 registered adolescents. The telemedicine application has been implemented and is in use at 4 district level facilities and one hub facility in case sites. A highly versatile mental health mobile application empowers the health workers based in communities and primary health facilities which follow WHO recommended mhGAP guidelines and protocols for screening and referrals. The application has also integrated two other features, i.e. eLearning (Moodle) for learning and a telehealth application (MDConsults) for remote Teleconsultation. Besides that, 51 sessions for the community and 33 blended learning sessions for health providers have been attended by 8,006 community members and 596 health providers.

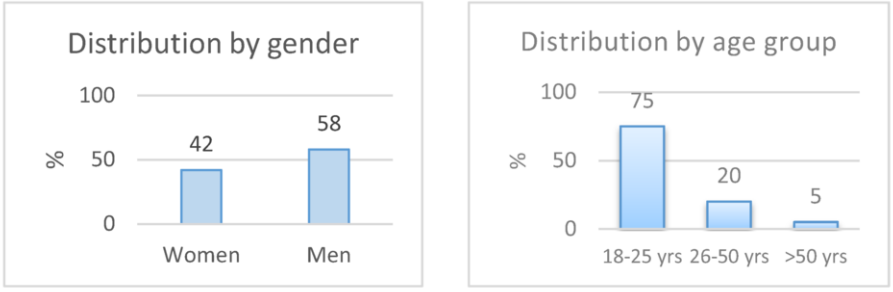

Figure 5. Graphs showing distribution of health providers attending face-to-face sessions by gender and age-group

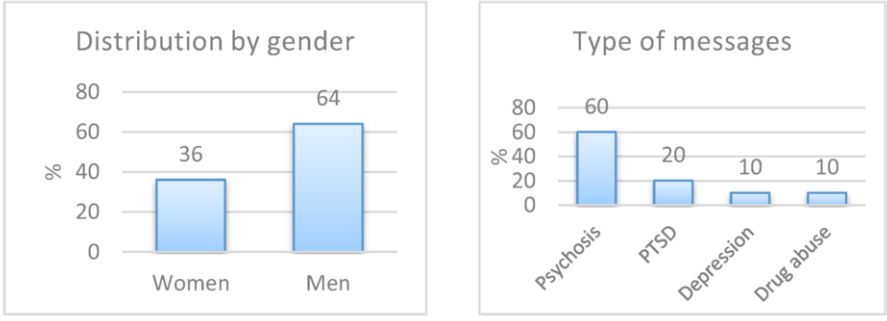

Figure 6. Graphs showing distribution of community members receiving text messages by gender and type of messages

Table 1. Blended earning

Activity	Quantity
Community Health Workers	
Number of sessions	19
Number of participants	347
Number of registered CHWs	93
Number of access to online modules uploaded	61
Facility-based health providers	
Number of meetings	14
Number of participants	249
Number of registered HPs	27
Number of access to online modules uploaded	16

2.1. Mental Health Mobile Application

The mental health mobile application is currently in use by 95 CHWs and 25 facility-based health workers, serving a target population of over 100,000 in all four case districts. Using the guidelines and protocols, CHWs have performed 1954 screenings to-date in targeted population and identified 160 mental health cases. All these identified cases are served with face-to-face consultations. To date 137 cases have been treated successfully while others are under treatment.

2.2. Telemedicine Desktop Application in Use at Health Facilities

Telemedicine desktop application is used to perform in-patient live teleconsultations by establishing the web connection between the health provider who is facilitating the patient; and the mental health specialist at remote end. This desktop application is installed in each health facility of case districts.

Conclusion

All approaches adopt a mix of traditional and culturally sensitive technology solutions. The program will be further evaluated to demonstrate 'value' of the solution, allowing an evidence-based business model to be developed.

References

[1] GD Sayed. Mental Health System in Afghanistan, Burden, Challenges and the Way Forward. Health, Nutrition and Population (HNP) Discussion Paper, South Asia Region; Health, Nutrition and Population Sector, World Bank, Kabul, Afghanistan, August 2011.

[2] National Mental Health Strategy 2009-2014, For a Mentally Healthy Afghanistan Islamic Republic of Afghanistan. Ministry of Public Health, General Directorate of Preventive Medicines, Mental Health & DDR Department, 2009.