A Multidisciplinary Remote Healthcare Delivery System to Increase Health Care Access, Pathology Screening, and Treatment in Developing Countries:
The Case of Benin

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ABSTRACT

In this paper, the authors describe a case study of the poor access to healthcare in developing world, case of Benin, a West African developing country. The authors identify problems and the existing obstacles for applying standard Telemedicine and eHealth solutions. The authors particularly describe an adapted multidisciplinary remote care delivery system approach for improving and increasing the use of existing health services as well as the access to healthcare by overcoming some cultural, social, financial, and at least linguistic barriers. The multidisciplinary remote care delivery system integrates traditional practitioners, because most people are more confident with the traditional medicine. The authors further present a practical test which has shown that their approach has the potential to improve the quality and effectiveness of health care in rural and other concerned regions and also increase the accessibility to health care system.

KEYWORDS

eCommerce, ePharmacyNet, Homecare, Life and Medical Sciences, Medical Information Systems, Multidisciplinary Remote Care Structure, Public Health Systems, Teleconsultation, Telehealthcare, Telemedicine, Telemonitoring Virtual Hospital, Telepharmacy, Traditional Practitioner

1. INTRODUCTION

1.1. Background

In the recent years, the burden of diseases is rapidly increasing in the developing countries. Most people living in these regions of the world are facing poor access to health care delivery. The care units in rural regions lack expert medical specialists or most health professionals working there are undertrained. Further, the existing medical infrastructures (facilities) are in a poor state. Care units are particularly scarce in rural areas and/or urban slums. Many urban areas also are facing those issues. Beyond the poor healthcare facilities and lack of care experts at certain care units, which are also underlying the poor access to healthcare, the socio-economic and cultural factors are decisive in how regularly a patient can visit a doctor (attend a health center in person). The few patients, who visit a

healthcare facility, are often hospitalized instead of being ambulatory or remotely treated, because of their remote residence, and thus occupy unnecessarily hospital beds and cause unnecessary costs.

1.2. Objectives

The goals of this study are to investigate how ICT systems could help to improve the health care provision services, increase the use of offered health services, and increase as well as improve access to healthcare within the public health systems in African developing countries.

The existing healthcare systems are facing challenges such as improving the health care provision and increasing access to healthcare. Launching Telehealthcare into the public healthcare system could be a solution to meet the challenges (Edoh 2010). Expert medical specialists could remotely assist undertrained caregivers working in urban and/or rural health care centers in providing preventive, curative, promotional or rehabilitative health care. Therefore, this work aims to launch a multidisciplinary remote care delivery system into those public health systems in order to increase access to healthcare provision service in regions severely facing poor access to care provision.

1.3. Methods

In order to increase access to the healthcare in developing countries, it is required to investigate the main reasons why people do not have access to healthcare, and then provide solution approaches to tear the obstacles down. Therefore, the authors conducted quantitative and qualitative evaluation research to assess the state-of-the-art and also conducted survey with populations and health professionals as well as public health care bodies (authorities). The authors had particularly investigated and evaluated the impacts of the traditions, culture, and financial situations on the poor access to healthcare services, particularly on less use of offered health services, since it's reportedly indicated that „ *(…) Although in the meantime 83% of the population has access to the national health care delivery, only 36% of the population uses this.”* (Klein 2005). It is important for us to understand why only 36% of the population uses this possibility.

1.4. Results

People the authors questioned stated that they are not confident with the competences of most health professionals, since a number of patients regularly died as a consequence of wrong treatment or surgery. They further complain about high health costs charged by all health care units. Our investigation confirms high health costs in the entire country. The high health costs in addition to scarcely existed health units in several regions of the country is one of the important reasons why only few people use offered health services or do not use offered health care services. Thus, financial problems and/ or issues, lack of health care services infrastructures, and some social as well as cultural barriers impede access to health care delivery and/or treatment.

The interviewees claimed that they are not treated with respect at the health units, because they are poor. This statement is more subjective than objective. However, regarding the cultural and traditional manners their sentiments could explain one of the various reasons for the poor access to healthcare or few usages of the national health care delivery or services. Most villagers or undereducated people are more confident with traditional practitioners due to their religious belief, the low health costs, and how they are treated with respect.

As described in our prior paper (Edoh & Teege, 2011) in the most Sub-Saharan Africa's countries the health systems are in poor state and the accessibility to the public health care remains challenging in many regions. Rural regions are severely affected by the issues such as poor access to the healthcare as well as lack of expert medical specialists at the rural care units. During our on-site study the authors noticed a lack of medical facilities across the country and analyzed their impacts on the accessibility to healthcare, particularly in poor urban and rural regions.

Most investigations carried out by the WHO have reportedly indicated poverty, lack of political will, poor national economy and not least the poor organization as the main deficiencies that underlie

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