The Virtual Patient for Improving Quality of Care in Primary Healthcare

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Summary: Traumatic experiences can have significant impact on one's mental and physical health. It is well established that trauma is associated with posttraumatic stress disorder (PTSD) and depression. Traumatic experiences are also associated with negative health behaviors—such as poor diet, smoking, sedentary lifestyle, and alcohol and substance abuse—that compromise physical health. Refugees are an example of a highly-traumatized patient population demonstrating high rates of PTSD, depression, and physical disability. Traumatized refugee patients seeking health care may face many barriers related to socioeconomic status, cultural medical worldviews, limited English proficiency, and low levels of health literacy. In order to effectively diagnose and treat highly traumatized refugees, primary care providers (PCPs) need to be trained in accurate diagnosis and treatment. Specifically, PCPs need to be 1) aware of the trauma-related mental and physical health problems that refugee populations often experience; 2) knowledgeable of the barriers to health care refugee populations may face and how to overcome them; and 3) able to identify and treat trauma as a medical and mental health risk factor in a culturally-sensitive way.

Dr. Richard Mollica and his research team at the Harvard Program in Refugee Trauma at Massachusetts General Hospital are collaborating with researchers at the Karolinksa Institutet's Virtual Patient Lab, in Stockholm, Sweden, to develop a virtual patient (VP) that will help train PCPs to accurately diagnose and treat trauma-related medical and mental health problems among highly-traumatized refugee populations. A VP is an interactive computer simulation that provides a virtual representation of a patient encounter for learning and assessment. The VP has been well established as an efficient and cost-effective training tool in health care. This project will implement a VP in primary care to help providers build their clinical capacity for the cultural and evidence-based identification and treatment of traumatized refugee patients from disadvantaged, diverse backgrounds.

This project is being conducted in two phases. Phase I involves the development of the VP β-prototype from the existing VP α-prototype. Ten PCPs from the Lynn Community Health Center (LCHC) in Boston, Massachusetts, were recruited to participate in the development process. These PCPs will participate in a three-part series in which the VP is first described and the VP α-prototype is then presented to the PCPs. Semi-structured interviews and surveys will be administered as a pre-test and post-test to collect information on the PCPs' preconceptions, attitudes, thoughts on usefulness, and recommendations for informing the development of the VP β-prototype.

Phase II of the project will test the effectiveness of the VP β-prototype to improve the abilities of PCPs at LCHC to identify, screen, and treat the physical and mental health problems of the traumatized refugee patient presented by the VP β-prototype. The VP β-prototype will be administered to 30 PCPs, including the 10 PCPs who participated in Phase I of the project and 20 additional randomly-selected PCPs at LCHC. The 30 PCPs will participate in three onsite sessions at which they will be administered clinical cases for patient assessment and the development of a treatment plan, followed by an introduction and review of the VP β-prototype.

A survey will be used to rate the quality of the PCPs' treatment plans pre- and post-viewing of the VP β-prototype. Additionally, the semi-structured interviews and surveys used in Phase I of the study will be administered to the Phase II PCPs pre- and post-viewing of the VP to qualitatively assess the PCPs' perception of the VP β-prototype as a training and clinical tool. A followup phone call will collect qualitative data from the PCPs on the strengths and weaknesses of the VP and their recommended improvements to the VP β-prototype.

Successful development and implementation of the VP is intended to improve PCPs' assessment and treatment of trauma-related physical and mental health problems in highly-traumatized, culturally-diverse refugee patients. The VP will ultimately improve the quality of care for disadvantaged and culturally-diverse refugee patient populations who experience trauma-related physical and mental health issues.

Specific Aims:

- Develop a final Virtual Patient β-prototype (from the existing α-prototype) that is perceived as an effective and engaging learning tool by primary care physicians. **(Ongoing)**
- Test the ability of the Virtual Patient β-prototype to improve the primary care physicians' identification and screening of health and mental health problems in traumatized and culturally-diverse patients. **(Ongoing)**
- Test the ability of the Virtual Patient β-prototype to improve the primary care physicians' treatment management plan of the health and mental health problems of traumatized diverse patients. **(Ongoing)**
- Assess the feasibility of expanding the use of the Virtual Patient among primary care physicians at neighborhood health centers. **(Ongoing)**

2011 Activities: The study team at Massachusetts General Hospital and their collaborators at the Karolinska Institutet have met every other week by phone. The VP α-prototype was assessed and modified for Phase I testing. Ten PCPs from LCHC were recruited to participate in the Phase I pre- and post-testing of the VP and the existing VP α-prototype.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are completely on track, and project budget spending is roughly on target.

Preliminary Impact and Findings: This project has no findings to date.

Target Population: Mental Health/Depression, Racial or Ethnic Minorities*: Bosnian Refugees

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

Business Goal: Synthesis and Dissemination

** This target population is one of AHRQ's priority populations.*