MI-HEART: a Comprehensive Management System to Deliver, Monitor and Measure Efficacy of Individualized Web-based Education

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**Problem** Demonstrating the efficacy of unsupervised self-administered education is challenging, when compounded with distance learning and the absence of any interaction with clinicians, web-based patient education may appear intractable.

**Background and Significance.** A variety of Web education delivery systems have been proposed by researchers or the commercial community\(^1\), however very few have produce theoretic-grounded individualized web education\(^2\).

**System Solution.** To our knowledge, MI-HEART is the first system providing efficacy measurements of internationally accessible self-administered web education grounded in established health education science and dynamically tailored to the patient history. The MI-HEART Clinical Trial is a pre-test post-test randomized study that measures the changes in cognitive variables of patients exposed to tailored or non-tailored self-administered Web-based and paper-based education\(^3\). It incorporates education process monitoring and efficacy measurements of based on several behavior models (HBM, SCT), and includes somatic and emotional awareness perceived threat, expectations of symptoms, self-efficacy and outcome expectations to explain the response of an individual their symptoms.

**System Description.**

1) **Patient Interaction Modules**

a) **Online Survey Manager** (Self-Administered Questionnaires):
   i) Measurement periods: pre-intervention, post-intervention (1,3,6 months),
   ii) Well validated instruments / a few original ones,
   iii) Demographics and Medical History,
   iv) Efficacy Measurements:
      • Knowledge • Cognitive Model states.

b) **Tailored Education Manager**\(^4\):
   i) Consistent Web-Portal / user interface following design, usability and accessibility guidelines,
   ii) Knowledge-base for delivery of tailored education (Audio, text, graphics),
   iii) Medico-administrative and Clinical Database,
   iv) Interactive calculators and risk assessments.

2) **Management and Reporting Modules**

a) **Progress / Process Monitor**

b) **Clinical Trial Management System**:
   i) Patient Accrual Monitoring (emails, web portal),
   ii) Data Collection Monitoring: Interactive reports, integrity and comprehensiveness tests).

**Progress Report.** 62 patients have applied to join the clinical trial, 9 of which have already completed it.

**Acknowledgements.** This work has been supported by National Library of Medicine (NLM) Contract (NO1-LM-3534) and training grants from the Medical Research Council of Canada and the NLM (LM07079).

**References**


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