



Design and validation of an Individual Health Report (IHR)

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ABSTRACT

This research focused on developing a general health report that conveys an individual's health readings in a clear, concise and explanatory manner and demonstrating the report's usefulness. The research examined the need for such a report and focused the design on the determined need and communication through visual display. The designed "Individual Health Report (IHR)" was evaluated using data obtained from an online survey developed for this research. The analysis involved *t*-tests, McNemar's tests, linear regression and ANOVA. Results included the finding that the IHR significantly improved respondent's ability to correctly answer questions about their health status and preventive health in general ($p < 0.0001$, $n = 61$). The study also showed that introduction of the IHR by healthcare providers would significantly improve the respondents' view that they get the preventive healthcare information they need to make appropriate decisions ($p = 0.0007$, $n = 61$).

In an era when costs of healthcare are of great concern and prevention is starting to gain traction as compared to strictly treatment, an IHR could be a very practical and beneficial step toward prevention focused healthcare. An IHR could be considered as a tool to provide increased public awareness of health status, with resulting gains in proactive and effective health management choices.

Relevance to Industry: Degraded health and associated healthcare costs are of significant concerns to industry performance and profits. As several references highlighted in this research have indicated, a lack of health literacy and awareness of critical health indicators are significant concerns in helping employees to manage their own health status. From an economic and societal perspective, it may be considered cost effective for employers to work with healthcare providers to support presentation of employee health status and results of recent healthcare evaluations by means of an IHR. An IHR of the type tested in this research can be seen to both provide clear and understandable health status information, and improve health literacy, for wide sections of the population. Presenting employee information via this type of IHR can effectively supplement healthcare information delivered by healthcare providers. The IHR tested in this research represents a form of clear information presentation and visualization that overcomes issues of jargon that degrades communication between healthcare providers and employees.

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1. Introduction

Communicating health status information effectively is an ongoing concern in healthcare delivery. The research presented here was intended to address this concern by developing an easy to use report that could be presented to a patient as an ongoing indicator of health status. The specific objectives of this research were to demonstrate the need for an "Individual Health Report (IHR)", determine which health readings were appropriate for inclusion, develop a format that effectively communicates the information,

create a survey to test its effectiveness, and evaluate that effectiveness through analysis of the survey results. The concept of the IHR and its format were unique ideas developed and tested in this research.

2. Material and methods

2.1. Demonstrating the need for an IHR

A needs assessment was conducted to help verify and understand the need for an IHR. This needs assessment included use of the PRECEDE (Predisposing, Reinforcing and Enabling Constructs in Educational Diagnosis and Evaluation) model, which is often used to ensure health education programs have firm epidemiological foundations (Bartholomew et al., 2006). In using the model, a reverse chronological approach is applied by initially looking at the quality of life and health impacts, then looking at the behaviors

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