



Using personas to tailor educational messages to the preferences of coronary heart disease patients



S. Vosbergen ^{a,*}, J.M.R. Mulder-Wiggers ^{a,1}, J.P. Lacroix ^b, H.M.C. Kemps ^{a,c}, R.A. Kraaijenhagen ^d, M.W.M. Jaspers ^{a,e}, N. Peek ^a

^a Department of Medical Informatics, Academic Medical Center, Amsterdam, The Netherlands

^b Department of Brain, Body & Behavior, Philips Research, Eindhoven, The Netherlands

^c Department of Cardiology, Máxima Medical Centre, Veldhoven, The Netherlands

^d NIPED Research Foundation, Amsterdam, The Netherlands

^e Center for Human Factors Engineering of Health Information Technology (HIT Lab), Academic Medical Center, Amsterdam, The Netherlands

ARTICLE INFO

Article history:

Received 14 October 2013

Accepted 9 September 2014

Available online 17 September 2014

Keywords:

Health education

Cluster analysis

Persuasive communication

Personas

Message features

Tailoring

ABSTRACT

Purpose: Although tailoring health education messages to individual characteristics of patients has shown promising results, most patient education materials still take a one-size-fits-all approach. The aim of this study was to develop a method for tailoring health education messages to patients' preferences for various message features, using the concept of personas. This is a preliminary study focused on education for coronary heart disease (CHD) patients.

Methods: This study used a three-step approach. First, we created personas by (i) performing *k*-means cluster analysis on data from an online survey that assessed the preferences of 213 CHD patients for various message features and, (ii) creating a vivid description of the preferences per patient cluster in an iterative process with the research team. Second, we developed adaptation rules to tailor existing educational messages to the resulting personas. Third, we conducted a pilot validation by adapting nine existing educational messages to each of the personas. These messages and the resulting personas were then presented to a separate group of 38 CHD patients who visited the cardiology outpatient clinic. They were first asked to choose their most preferred, second most preferred, and least preferred persona. Subsequently, they were asked to rate three of the adapted messages; one for every of the persona choices.

Results: We created five personas that pertained to five patient clusters. Personas varied mainly on preferences for medical or lay language, current or future temporal perspective, and including or excluding explicit health risks. Fifty-five different adaptation rules were developed, primarily describing adaptations to the message's perspective, level of detail, sentence structure, and terminology. Most participants in the validation study could identify with one of the five personas, although some of them found it hard to choose. On average, 68.5% of all participants rated the messages that matched their most preferred persona more positively than, or in the same way as, the messages that matched their least preferred persona.

Conclusions: The persona-based method developed in this study can be used to create a manageable set of patient-centered tailored messages, while additionally using the developed personas to assess patients' preferences.

© 2014 Elsevier Inc. All rights reserved.

Abbreviations: CHD, coronary heart disease; *k*, number of clusters; TMSI, Threatening Medical Situations Inventory.

* Corresponding author at: Philips Research, High Tech Campus 34, 5656 AE Eindhoven, The Netherlands. Tel.: +31 6 15078325.

E-mail address: svosbergen@gmail.com (S. Vosbergen).

¹ Contributed equally.

1. Introduction

Patient education is a key component in many self-management interventions, including those for patients with coronary heart disease (CHD). Self-management has become a major point of interest within CHD care contexts. This is due to the growing number of people living with CHD, and there is increasing evidence that highlights the negative influence of risk behavior on disease

progression (e.g., physical activity and regular medication intake). When patients self-manage their illness, they make decisions every day on such things as whether to continue with the medication regime and what to eat. Patient education is crucial to making well-informed decisions. Therefore, patient education is a key component in many disease management guidelines, including those for patients with CHD [1].

In the Netherlands, health professionals usually provide self-management education to CHD patients. As part of this, patients are often provided with written information in the form of leaflets. The emotional shock and speed of events surrounding and during patient-doctor encounters influence patients' ability to process information, and supplementary material they can refer to at their own pace at home is particularly valuable to them [2]. Current information provision practices regarding cardiovascular medication do not meet patients' information needs sufficiently [3]. Information leaflets are often difficult to understand, can cause anxiety in some patients, and many patients find them unsatisfactory [4]. Various researchers have postulated a need for tailoring information to patients' individual needs [2–6]. Currently, however, most patient education materials take a one-size-fits-all approach. The increasing use of health information technology offers prospects for providing patients with education materials that accommodate their information needs.

While tailoring health communication materials to specific types of pathology, therapies, behaviors, or psychological characteristics of patients has been found to be beneficial [6–17], individual differences in patients' preferences for message features are rarely considered. Studies that do explore various message features (i.e., aspects of the message's style, structure, or content) mainly investigate how messages can be designed to make them more salient to readers [18]. For example, studies have shown that message features can influence reactions to HIV disclosure [19] and the perceived credibility of health messages (e.g., [20,21]). However, research has shown that effectiveness of health education increases if the information provided matches patient preferences [22]. In a previous study, we found considerable variation in the preferences of CHD patients for nine different message features; these preferences appeared to be related to socio-demographic and psychological characteristics [23]. For example, more highly educated patients preferred messages written in medical language, while less educated patients, and those lacking social support, preferred messages written in lay language.

Although an extensive number of studies describe the effectiveness of tailoring messages according to patients' behavior and how information is received (e.g., [17,24–26]), studies describing structured methods for constructing such tailored messages are scarce [27]. Kukafka summarized tailoring techniques currently used in the health communication domain [28], concluding that new, innovative adaptation methods are needed. This conclusion is based mainly on the challenge of assembling pieces of text or sentences to produce a coherent, understandable health message without losing its potential persuasiveness [28]. In the present study, we explore the use of personas as an intermediate construct in the task of tailoring health education materials for CHD patients. Personas stem from the field of product marketing, and are generally used to represent different user types within a target population, and are typically captured in short descriptions that include the behavioral patterns, goals, skills, and attitudes of these user types [29].

1.1. Objective

The aim of this study was to develop a method for tailoring health education messages to patients' preferences for message

features using the concept of personas. This is a preliminary study focused on education for CHD patients.

2. Background

Tailoring can be defined as “any combination of information or change strategies intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and have been derived from an individual assessment” [30]. Tailoring has been broadly discussed and applied in recent years. It has been described as a complex process aimed at increasing the attractiveness of the message [31,32], enhancing the level of meeting the receiver's needs, and positively affecting cognitive behavioral responses [32]. Current tailoring literature primarily describes which individual characteristics one should tailor to, and the effectiveness of tailoring messages to these characteristics [25,33]. In health care, characteristics that have been frequently used for tailoring health education messages are derived from behavioral theories (e.g., stages of change, trans theoretical model), individual behavioral patterns (e.g., smoking, diet), socio-demographic variables, and targeted health goals (e.g., screening, prevention) [14,33]. In general, most tailoring literature focuses on adapting the content of information [25,26]. However, in the fields of psychology and communication, the relative persuasiveness of alternative message formulations with similar content has been studied extensively (e.g., [34,35]). In these fields, a message's features are adapted to an individual's particular psychological or other characteristics to persuade him or her to adopt a particular behavior. Concordant with studies concerning content tailoring, these studies often focused on the effects of tailoring (e.g., a person's attitudes, intentions, and behaviors [34]) to psychological characteristics (e.g., monitor-blunter coping style [8,9] regulatory focus [9,11]), but not to patients' needs or preferences. There are various strategies for assessing these characteristics, but questionnaires, telephone interviews, or data obtained from existing sources such as medical records [25,36] are often used.

Although some studies have described approaches for developing tailored materials, they often merely set out the generic steps that make up the method (e.g., [31,36]). For example, Dijkstra [31] describes three general steps for composing tailored messages: (1) assess information about the individual, (2) compose the message using decision rules, and (3) disseminate the computer-tailored information to the individual through various channels. However, no details are provided about the execution of each step. A recently published article concerning reporting standards for tailored interventions [37] postulated a need for more detailed instructions on how to conduct each step in the tailoring process in order to disentangle the “black box” of tailoring. Others have also suggested this [17]. Harrington and Noar [37] propose doing this by describing how assessment data provided by participants can be used as input to construct particular messages. Kukafka [28] has described techniques that have been used to tailor messages to the individual characteristics of patients. She suggests that particularly these techniques use simple decision rules (e.g., if-then rules) and/or tailor to factual information and a patient's medical history only (i.e., not to determinants of behavior), mainly because of two challenges that need to be tackled during the tailoring process. The first challenge is to acquire the expert knowledge needed to author the text the system uses to generate the tailored communication. The second challenge is to assemble the pieces of text to produce a health message that is coherent and understandable. Considering these challenges, she concludes that new techniques are needed that combine knowledge about the specific health domain, individual behavior, and argumentation techniques into a readable text [28].

Download English Version:

<https://daneshyari.com/en/article/6928241>

Download Persian Version:

<https://daneshyari.com/article/6928241>

[Daneshyari.com](https://daneshyari.com)