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Development of the Diabetes Health Threat Communication Questionnaire (DHTCQ)

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Abstract

Objectives: (1) To develop a brief instrument, the Diabetes Health Threat Communication Questionnaire (DHTCQ) to measure diabetes patients' (type1 and type 2) perceptions of the health threat communication process (i) at time of diagnosis and (ii) since diagnosis; (2) to assess the measure' psychometric properties.
Methods: Data from a pilot study ($n = 110$) and a prospective longitudinal study ($n = 158$, within 3 months of diagnosis and $n = 147$, 6 months after baseline) were examined in order to demonstrate reliability and validity of the DHTCQ.
Results: Principal components factor analysis revealed 2 meaningful factors (Reassurance and Threat) with satisfactory internal consistency (Cronbach' alpha) and adequate test–retest reliability. Correlational analyses supported the measure' construct validity.
Conclusion: Initial support for the psychometric properties of the DHTCQ was shown. Perceptions of health threat communication were associated with patients' illness representations of diabetes (beliefs and feelings about diabetes and its treatment).
Practice implications: The DHTCQ may be used to assess patient perceptions of health communication and shape subsequent communication. The findings may help to improve practitioner/patient interaction leading to more adaptive representations of diabetes.

Keywords: Diabetes; Health communication; Questionnaire development; Personality traits; Illness representations

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1. Introduction

Recent research has examined how individuals' beliefs and ideas about illness have influenced health/illness behaviour. The self-regulatory model (SRM) proposes that individuals' illness representations, sometimes termed personal models, predict the ways in which people react to and cope with perceived health risks [1]. An important feature of this model is its emphasis on emotional responses to illness. Based on previous communication research [2], this model outlines two parallel, partially interacting processing systems for the regulation of danger and emotion. The danger control system consists of objective representations of the health, while the emotion control system consists of the representation of the subjective feeling state and the cognitions specific to it. Illness representations include people's perceptions about the identity, cause, time-line, cure/controllability and consequences of their conditions and have been associated with a wide range of health behaviours [3,4]. These mental representations of the health threat initiate action plans or coping strategies to deal with the perceived health threat such as seeking medical help, adhering to treatment recommendations (approach/problem-focused coping) or denial of the problem (avoidance/emotion-focused coping) [2].

Several studies have shown an association between PMs and diabetes self-care behaviour [5–8]. We found that long-term non-attendance at diabetes clinic was associated with negative PMs, such as perceptions of less perceived control of diabetes, more serious consequences, weaker beliefs in treatment effectiveness and a more negative view of the time-line or course of diabetes [9]. These negative PMs were associated with more emotion-focused and less active coping strategies [10]. While the findings provide valuable insight into patients' beliefs about diabetes and its treatment, a key question that remains unanswered is ''Why and when do some people develop more negative representations of their diabetes than others?''

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To date, self-regulatory (SR) studies have focused on the association between PMs and outcome and not on the way in which they develop. The SRM proposes that PMs develop from a variety of social and cultural sources of information such as individual experience, education, information from health care providers and the media [11]. One potential influence is how the perceived health risk is communicated to patients by health professionals [11,12]. Qualitative data [12] suggest that the health care communication process between patient and practitioner influences patients' PMs and subsequent health behaviour. For instance, when the health message was perceived as being too threatening, high levels of fear were reported and avoidance behaviour employed. This is consistent with the literature on threat communication and subsequent coping [13,14]. In contrast, when the level of threat or their personal vulnerability was perceived as low, patients appeared to discount the importance of the health risk and believed that active coping strategies such as adherence to diabetic regimen and attendance at diabetes clinic for follow-up care were unnecessary. However, findings from the fear appeals literature indicate that fear arousal may be less important in motivating self-protective behaviour than perceptions of action (treatment) effectiveness and self-efficacy [15]. Thus, recommended behaviour is more likely to be carried out if individuals perceive the behaviour to be effective in reducing the health threat and they are confident that they can carry out the behaviour.

Health care practitioners are an important source of information and support for newly diagnosed patients with diabetes [16–19]. They need to inform patients of potential health problems associated with diabetes (e.g. heart disease, blindness, nephropathy and neuropathy) while at the same time giving information on how health risks may be reduced by the maintenance of near-normal blood glucose levels [20] and empowering patients to develop the self-confidence to manage their condition. Purposely promoting fear may have negative effects resulting in defensive avoidance behaviour directed towards reducing anxiety rather than minimising the health risk. Practitioner support is essential, given the high degree of self-management required from patients and the potential barriers (time, social pressure, competing demands and thoughts) to diabetes self-care [21].

The diagnosis of diabetes can have a profound effect on patients and their relatives [22]. An earlier study found that the diagnosis of diabetes was distressing for 60% of patients, 60% would have preferred differences in communication, 24% wanted more information and 23% wanted more psychological support and reassurance [16]. Influences on satisfaction at diagnosis of diabetes include the perceived difficulty in understanding information, whether health professionals were helpful, and whether the patients had the opportunity to ask questions [23]. Clear information and allowing patients to ask questions and express their fears and concerns are related to feelings of reassurance and support and are also associated with health benefits [24–27]. Levels of psychological distress are lower in patients with serious illness if they believe they have received adequate information [28]. While there is variability in the amount of information people require [19], practitioners frequently misperceive the amount and type of information that patients want to receive [28] and often use medical jargon [25].

While previous studies have looked at the effects of health communication on diabetes self-care and outcome [29], little work has been carried out to examine the relationship between communication and the development and maintenance of illness representations. Prior to exploring these complex relationships, two versions of a brief questionnaire were developed to assess perceptions of the way in which the health threat is relayed to diabetes patients by health practitioners. The areas considered especially relevant were *Information provision* (amount and clarity) and the concepts of *Threat* and *Reassurance/support*, that is, how threatening or worrying the message is perceived to be and whether the information is perceived to be given in a way that reassures patients that they can manage their diabetes effectively. The Threat and Reassurance/support items are conceptually consistent with the variables of seriousness, vulnerability, self-efficacy and treatment efficacy used in several models of health and illness behaviour [13] and those identified by fear appeal research. Item content was therefore devised on the basis of previous findings, the communication literature and the health psychology literature. Factor analysis was used to determine the underlying structure of the measure.

In this paper, we describe the development of the Diabetes Health Threat Communication Questionnaire (DHTCQ), a brief questionnaire to measure perceptions of health threat communication (i) at the time of diagnosis and (ii) in the time since diagnosis, for use in a prospective longitudinal study examining potential influences on illness representations. Participants in the longitudinal study are assessed at four time points during the 2-year period after diagnosis. Data from two different patient groups (i) the retrospective pilot study and (ii) the prospective longitudinal study (time 1, within 3 months of diagnosis and time 2, 6 months after baseline) are presented in order to examine the validity and reliability of the measure.

2. Methods

2.1. Questionnaire design

The DHTCQ is a brief measure that assesses patients' perceptions of the way in which diabetes information (the health message) is relayed to patients. Two versions of the scale are available. Version 1 examines patients' perceptions of the way in which diabetes was explained to them at the time of diagnosis (AD). Version 2, containing the same questions (different verb tense), measures perceptions of the way in which information has been given in the time since diagnosis (SD), i.e. during follow-up care visits. Items were generated from patient data [12] and the literature and reviewed by diabetes expert colleagues for face and content validity. A first exploratory draft of the DHTCQ was pre-piloted with a small group of diabetes patients ($n = 9$) to ensure items were acceptable, comprehensible and unambiguous.