An empirical test of the Health Empowerment Model: Does patient empowerment moderate the effect of health literacy on health status?

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ABSTRACT

Objective: The Health Empowerment Model (Schulz & Nakamoto, 2013) advocates that the effects of health literacy and empowerment are intertwined on health outcomes. This study aims to test this assumption in the context of health status as a patient outcome.

Methods: A cross-sectional study was conducted with a sample of 302 participants between June and December 2015. The participants' health literacy (using the NVS and S-TOFHLA tests), empowerment and self-reported health status were assessed.

Results: The participants having a high level of patient empowerment and concurrent adequate health literacy (the so-called 'effective self-managers') reported better health status compared to patients who had either lower health literacy and/or lower empowerment scores (P < 0.05). Moreover, the meaningfulness (b = 0.053, t(297) = 2.29, P = 0.02) and competence (b = 0.07, t(297) = 2.47, P = 0.01) sub-dimensions of patient empowerment moderated the effect of the NVS on current health status.

Conclusion: The study provides evidence for the independence of health literacy and empowerment and partial evidence for their interaction predicting health status.

Practice implications: Our findings highlight that health literacy and patient empowerment (in particular its competence and meaningfulness sub-facets) are crucial patient-related variables, to be taken into consideration simultaneously, during screening and health promotion campaigns fostering health status in the general population.

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Introduction

Health literacy is one of the most widely studied patient-related predictors of health behavior. The classic definition of health literacy is "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." [1]. Multidimensional definitions of health literacy distinguish several knowledge components and skills necessary to manage one's health [2–5]. Among them, functional health literacy refers to the patients' reading and numeracy skills [3,5]. Low functional health literacy is linked to various health behaviors and patient outcomes, such as more hospitalizations, higher use of emergency care, lower receipt of mammography screening, and lower rates of influenza vaccination [6].

Patient empowerment is another widely researched determinant of health behaviors, which can be comprehended in an interpersonal context (i.e. the doctor-patient interaction) or on an intrapersonal level (the point of view of the patient only) [7–9]. The definition applied captures empowerment intrapersonally as a volitional construct referring to the patient's perceived capacity to participate in treatment-related decision-making [10]. The Health Empowerment Model [5] adapts the multifaceted view of empowerment from the management literature [11,12] by distinguishing four dimensions: 1. Meaningfulness (refers to the belief that investing energy in a certain action pays off); 2. Competence (the belief in one's own ability to implement certain actions); 3. Impact (the belief that one's actions can have an actual impact); and 4. Self-determination (refers to one's self-induced motivation to implement an action). Empowerment is a well-established predictor of several patient outcomes, thus interventions increasing patient empowerment have become widely-used tools to improve health outcomes in chronic conditions [13].

Health literacy has traditionally been considered as a tool for increasing patient empowerment. It was assumed that fostering
patients’ knowledge and skills empowers the patients [14,15]. Consequently, this approach advocates that increasing health literacy is an antecedent of patient empowerment [16–19]. Schulz and Nakamoto (2013) argue that high levels of health literacy do not presuppose a concurrent high level of patient empowerment and vice versa. The Health Empowerment Model advocates that there is an interaction between health literacy and patient empowerment [5]. According to the model, being highly empowered and simultaneously possessing a high level of health literacy is the best-case scenario, while a mismatch between health literacy and empowerment can be insufficient to boost one’s health or potentially lead to harmful consequences on patient health outcomes.

The model distinguishes four types of patients. First, a patient who lacks both empowerment and health literacy skills is obviously in great need of assistance to manage his/her disease (‘high-needs patient’). Second, an empowered patient who is not health literate might make dangerous health-related decisions (‘dangerous self-manager’). Third, a health literate patient without empowerment might remain dependent on the physician (‘needlessly dependent patient’). Fourth, an empowered patient who is also health literate is thought to develop beneficial practices related to his/her health (‘effective self-manager’). The authors of the model posit that effective self-managers would have the best health outcomes. Needlessy dependent patients are probably following the doctor’s instructions without questions. Dangerous self-managers are inclined to engage in non-beneficial health behaviors potentially leading to low health outcomes, and high-needs patients are the most vulnerable [5]. Concerning the clinical implications, measuring patients’ health literacy and empowerment could inform the health care professionals about how to tailor the messages about the diagnosis and the recommended treatment to the needs of the patients during the medical encounter.

Several studies sought to test whether this classification of the patients can explain self-management and health outcomes in various patient populations. Camerini, Schulz and Nakamoto (2012) found evidence for the simultaneous effect of health knowledge and empowerment on health outcomes among fibromyalgia patients [20]. Furthermore, examining the joint effect of health literacy and psychological empowerment was shown to be a fruitful approach to explain self-management among insomnia [21] and asthma patients [22], parents’ MMR vaccination decision-making [23], older patients’ participation in health care [24] and medication adherence [25]. The findings of Camerini and Schulz (2015) supported the independency between health literacy and empowerment. Moreover, significant differences emerged when comparing the four types of patients (described above) concerning their socio-demographic characteristics and involvement in the medical encounter. However, the differences were attributed to either health literacy or patient empowerment, but there was no interaction between the concepts predicting these outcomes [26]. Furthermore, Wang et al. (2016) found that the interaction between patient empowerment and a specific dimension of health literacy (communicative and critical health literacy, CCHL) is significantly related to the self-management behaviors at 1-year follow-up in type 2 diabetes patients. The results imply that high CCHL leads to subsequent beneficial self-management only when the patients concurrently are highly empowered [27]. While the outcomes of these papers suggest that health literacy and empowerment should be considered simultaneously, they provide limited evidence that there is an interaction between the concepts predicting health outcomes.

The aim of the present study is to provide a thorough empirical test of the Health Empowerment Model in a sample close to representative of the general population, by measuring each concept with multiple measurement tools. Our main research question is whether health literacy and patient empowerment interact in predicting self-perceived health status. First, we tested whether health literacy and patient empowerment are independent concepts by studying the association between them. Second, we tested whether the two interact in explaining health status. Third, we examined whether the effect of health literacy on health status is moderated by the level of patient empowerment.

2. Methods

2.1. Sampling and data collection procedure

A cross-sectional quantitative study was conducted. The data collection had been started by trained collaborators who were part-time or full-time psychology students, and as a course requirement collected thirty questionnaires each via convenience sampling in their own environment as well as cafés, pharmacies. The subjects were asked to fill out a 30-min-questionnaire about reading and interpreting health-related issues. After accepting to participate they completed the questionnaire in a quiet place. Further subjects were systematically selected by matching our sample to the official proportions of gender, education and age of the Hungarian population provided by the Hungarian Central Statistical Office. This phase took place in hospitals and retirement homes in Hungary between June and December 2015, with the help of the head of the departments. Overall, about 90% of the approached persons agreed to participate. Ethical approval was obtained from the Psychology Ethical Committee in Hungary and the ethical committees of the hospitals involved. The inclusion criteria were: being above 20 years of age, Hungarian native speaker, being able to complete the required parts of the questionnaire on one’s own and having correct or corrected vision. This latter criterion was tested explicitly via a question asked by the collaborators when the subjects were instructed to complete the questionnaire on their own. The eligible participants provided informed consent.

2.2. Measures

2.2.1. Personal characteristics

Gender, age, marital status, educational attainment, profession and income were self-reported by the participants.

2.2.2. Health literacy measures

The Newest Vital Sign (NVS) [28] was applied to measure health literacy. It consists of an ice-cream nutrition label that is accompanied by 6 questions regarding the calories, carbohydrate intake as well as potential allergens among its ingredients.

Besides the NVS, the reading comprehension section of the Short Test of Functional Health Literacy (S-TOFHLA) [29] was used to measure health literacy. The S-TOFHLA is a performance-based test, which consists of a reading comprehension section and a numeracy part [29]. We decided to include the reading comprehension section, as in the Hungarian context the numeracy scores had a low internal consistency [30].

2.2.3. The empowerment scale

The 12-item Health Empowerment Scale was used to measure empowerment regarding one’s health, which was adapted from the Psychological Empowerment Questionnaire [31] to the health context. The tool consists of four 3-item factors to measure all sub-facets of empowerment: Competence (‘I am confident about my ability to deal with my health’), Meaningfulness (‘Dealing with my health is very important for me’), Impact (‘I have a great deal of control over managing my health’) and Self-determination (‘I can
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