

HEALTH LITERACY'S CONNECTION TO HEALTH BEHAVIOUR AND POLICY SUPPORT

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Extended Abstract

Introduction

The goal of a functioning national healthcare system is the responsiveness to the health expectations of its citizens in an equitable financial distribution. Hereby, it is in the government's interest to operate at reasonable and predictable cost levels so a realistic finance structure and budget can be created. Hence, the development of measurable performance indicators as well as barriers is at the core of health policy measures (Handler et al., 2001). This in turn informs the inquiry and assessment of public attitudes toward health.

The link between social determinants of health and health outcomes has not only been widely recognised in the public health literature (e.g., McLeroy et al., 1988) but systemic shortfalls (or inequalities) in any of these determinants have been found to be key factors for poor health or inadequate health equity (Brenna Ramirez et al., 2008).

Among the social determinants of health, health literacy is considered a critical cause for personal health as it determines a patient's efficiency to interact with the healthcare system. Barriers to do so properly, i.e., poor communication or lack of understanding of instructions, have been found to lead to inefficiencies to achieve good health, or in Grossman's (1972) terms, a poor "production of health capital." In short, low health literacy leads to untimely or improper use of preventative treatment, which in turn creates increased medical expenditures (Howard et al., 2005). Or, in other word, low health literacy leads to a drain on the nation's economy, unduly increasing national healthcare expenditures.

However, polls of educational programs and policies have neither shown improvements in health literacy nor any direct effects on attitudes or behaviours. In fact, figures used to calculate impact of low health literacy on federal budget typically use elaborate estimation formulas (see, e.g., the caveat statement on accuracy in Vernon et al.'s (2002) calculation of the U.S. low literacy effect). Nonetheless, in the various challenges surrounding health literacy, proving an exact economic effect of low education seems the least problematic.

Much larger problems arise from the ongoing lack of shared meaning of the term itself, which of course directly affects measurement (Baker, 2006). The original and still most widely used definition of health literacy – the one employed in this study – presents it as a set of individual capacities (vocabulary, reading, numeracy) that allows a person to acquire and use health information. Hence, the standard tests – the Test of Functional Health Literacy in Adults (TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (REALM) – probe for these capacities. Not surprisingly, they have in the past years become a component of general adult literacy assessments (e.g., the National Assessment of Adult Literacy (NAAL) run in the 2003 assessment of English literacy among American adults by the U.S. Department of Education). Despite this widespread acceptance, reports that connect improvement of public health with access to education (Kickbusch, 2001, World Bank, 1993), often equate literacy with education whereas health education has more extensive concerns than the mere achievement of (health) literacy (Tomes, 2002).

Unfortunately, the more current re-definition of the term has not clarified matters much but by incorporating social skills, psychological constructs, and empowerment ideas has created an omnibus definition that encroaches more on existing cognitive psychological terms

already in use in many health communication theories than achieving a clear definition. Since we did encounter these constructs already in independent models and explanations of the functioning of health beliefs to health behaviours, we chose to remain with the original terminology of health literacy – albeit debatable – and the likewise original constructs (such as health efficacy, health orientation, health information seeking, etc.) to test our correlations.

The aim of the present research, then, was to empirically examine the effects of functional health literacy on health orientation and positions towards the national health system and policies. It is hypothesized that individuals with higher health literacy will have a more efficacious healthstyle and are more knowledgeable of and active in finding health information. Furthermore, based on the assumption that educated individuals are more supportive of the system that educated them, it is expected that support for the health system is stronger for people with dispositional high (versus low) health literacy (Parker et al, 2003).

Method

Health literacy and policy support survey data were collected via street intercepts in 2009/10 in a large city in the south-western U.S. as part of a larger project on community and cultural differences in health attitude and health system support that explored the implementation of research into best practices. A sample size of 250 was chosen after consulting the current literature in the field (e.g., Kline, 1998), a number approximately corresponding with the necessary sample size needed to minimize Type I and Type II errors.

The questionnaire was designed to identify each respondent's level of health literacy (using the s-TOFHLA test), health orientation (including beliefs and behaviours), and positions towards the national health system and policies. Five-point Likert-type scales were used except for the literacy test, which followed a modified Cloze procedure (Baker et al., 1999). The data were analysed using regression and structural equation modelling. This technique was chosen because we tested and estimated causal relations.

The aim of this study followed a 2009 UN Assembly on Global Health critique that documented a substantial gap in the public's understanding and attitudes about public health and asked to find a more conclusive connection between individual and system parameters. With the importance of health education/skills as a factor, the study explored the correlations of health literacy with both health-style (behavioural tendencies) and national health care system and policy support (attitudinal predisposition or preference) measures. A hypothesised health response model assumed a positive sequential relationship between literacy, efficacy, behaviour, and policy support, and, following the literature (Green, 2000; Stokols, 1996), a more direct influence of literacy on each subsequent factor.

Results and Discussion

A path model showed the maximum likelihood results of the hypothesized model using health literacy and the health orientation components as the exogenous variables. The fit indices indicated an adequate data-to-model match. The model accounted for 35% of the variance in the variable *health system support*, and 21% of the variance in the final endogenous variable *acceptance of health inequalities*.

Statistically significant direct relationships of health literacy were found with *prevention orientation* and *efficacy beliefs*, supporting the expectation that (health) literate individuals have the skills to engage in preventative activities in order to stay healthy. No direct correlations were observed with *health consciousness*, *system/policy support* and *inequality acceptance*, showing the tenuous relationship that literacy has with (a) the health conscious consumer model outlined e.g. in the U.S. Healthy People 2010 and (b) a

politically/socially engaged actor model. Moreover, we observed a strong inverse interaction effect with age, suggesting that these skills markedly decline with age. As Parker et al (2003) noted, “the higher prevalence of health literacy problems among the elderly is important because they are also most likely to have chronic health conditions.” Finally, we found a direct correlation with income, reconfirming current critiques of health literacy as being seen by many as a surrogate of “general adult literacy” that shows similar relationships to income. It was also noteworthy that the test itself may even be a weak indicator of education level in general as the results did not correlate well with demographic profiles on education, i.e., both high-school dropouts and advanced college level individuals scored within an acceptable range of each other on the s-TOFHLA test.

The results show that the presence of other variables is significant in explaining policy and system support and that health literacy by itself does not influence these variables directly. In fact, the multifarious interpretation of the term creates a false positive for this link. It appears fairly conclusive that if health literacy is interpreted as a person’s capacity to send, digest and receive information, its direct influence of a person’s self-efficacy and prevention behaviour appears obvious – although these subsequent variables explicitly or implicitly test for information processing as well especially when measures of education level are added. If health literacy is supposed to be interpreted as an individual-system-society interaction, as suggested in redefinitions of the term, e.g., Nutbeam & Kickbusch (2000), the individual-level measure is inadequate (Baker, 2006). Ironically, as mentioned above, new measurement suggestions incorporating all of the new constructs appear to only replicate already existing psychological and social concepts. Following the principle of Occam’s Razor, as Tones (2002) eloquently put it, only creates unnecessary duplication and confusion.

The primary discussion elements suggest that health literacy is a more complicated construct than current test instruments can survey. Since it largely depends on both the individual capacity to function in a communication environment as well as the expectations and demands posed by this environment, speak: the health care system and society at large, one would need more comprehensive tests that simultaneously do not unduly increase the response burden (see Baker, 2006).

The second main finding from this study is that preventative health behaviour as a result of advanced capacity to function in the health system also leads someone to be largely in support of an existing policy structure and system. It thus underscores earlier research (Miles et al., 2001) that critiqued that well-intended policy and marketing measures tend to reach the wrong audiences as those supportive of the prevention activities of the health system already engage in the desirable behaviours. As mentioned earlier, the problem here lies in the fact that it is difficult to deduce this from high literacy.

There are a few limitations within the study and of course the focus has been on the chosen test, the short version of the TOFHLA, or s-TOFHLA, which is expedient but covers primarily vocabulary recognition of medical terminology. However, the study shows that the primary difficulty with all health literacy tests is the relative rigidity of their use and hence interpretability especially in light of the ongoing debate of a satisfactory definition of the term.

A few years ago, Rogers et al. (2001) noted, “although health literacy is a salient issue for health policy today, it has been largely ignored in political dialogue.” Today, one might argue that health literacy has too much debate but a definition problem and medical experts have begun debating the value of assessing health literacy. When every construct related to health promotion theory is considered applicable as an aspect of health literacy, health literacy is ill defined. If we fail to define health literacy, it begs the questions what we are really measuring? It is critical for the academic field to come to consensus about its definition, and to examine the ways that it communicates health literacy concepts to those with the means to influence it (Pleasant et al., 2011).

While it appears that no single public or private entity can improve the health literacy of individuals, national and international health research organizations should collaborate on the development of a new approach to measuring health literacy that explicitly addresses a broader conceptualization and definition of health literacy. In the end, ensuring health literacy is a fundamental issue of fairness and basic human rights as it empowers individuals and communities and engages all stakeholders, including individuals, for attaining global health goals.

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