



Original Article

Assessing health literacy in safety net primary care practices

Renée L. McCune, PhD, RN^{a,*}, Hyunhwa Lee, PhD, RN^{b,1}, Joanne M. Pohl, PhD^{c,2}^a University of Detroit Mercy, McAuley School of Nursing, 4001 W. McNichols Road, Detroit, MI, 48221, USA^b University of Nevada, Las Vegas, NV, USA^c The University of Michigan School of Nursing, Ann Arbor, MI, USA

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ABSTRACT

Health literacy is now recognized as a crucial element of patient safety. Measuring health literacy in busy primary care practices can be challenging. This article presents findings from a study in which a relatively recent tool, the Newest Vital Sign (NVS) was used in seven safety net primary care practices, five of which were nurse managed health centers. The NVS is a promising tool that could be used extensively in most primary care practices. Providers and staff felt the use of the NVS would be beneficial in identifying low health literacy patients. This study supported previous research on low health literacy as well as the predictors of health literacy. The study also confirmed the NVS as a tool that is efficient to administer while maintaining work flow.

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1. Introduction

Health literacy is now recognized as a crucial element influencing patient safety and quality of care. A critical component in reducing medical errors by improving patient understanding of test results, enhancing individual ability to follow verbal and printed directions, to care for oneself and family, and to make healthcare decisions; health literacy is integral in healthcare delivery (Committee on Health Literacy, 2004).

Most commonly defined, 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” (Ratzan & Parker, 2000, p. vi). A more comprehensive definition has been presented by the European Health Literacy Consortium (Sørensen et al., 2012), “Health literacy is linked to literacy and entails people’s knowledge, motivation and competences to access, understand, appraise and apply health information in order to make judgments and take decisions in everyday life concerning health care, disease prevention and health promotion to maintain or improve quality of life during the life course”.

Health care providers may find care is compromised by patient shame or reluctance to share literacy challenges. For example, low literacy skills in the elderly may increase the overwhelming response to diagnoses, complex treatments, and general self-care issues (Wolf, Gazmararian, & Baker, 2005). Medication errors, inappropriate use of

medication, evidence of poor adherence to health regimes, and the inability to fully utilize preventive services commonly occur in the elderly (Zagarria, 2006) and other risk populations with low literacy.

Research on health literacy has focused primarily on physician based care. Physicians have been shown to significantly overestimate the health literacy of patients and lack skills to identify low literate patients through usual health interviews (Rogers, Wallace, & Weiss, 2006). A multi-site study of primary care centers caring for the underserved found that possessing knowledge of patient health literacy skills was highly ranked by practitioners. Yet little formal assessment was performed overall due to practitioner knowledge deficit regarding available assessment tools and a lack of comfort with informal verbal assessments, such as interviewing (Barrett & Puryear, 2006; Barrett, Puryear, & Westpheling, 2008).

The American Medical Association (AMA) in, 2003 responded to health literacy concerns by initiating a massive educational campaign aimed at medical providers (physicians and residents) (AMA, 2003). The intent of the ongoing campaign was to increase awareness of health literacy and enhance communication skills of providers. Heinrich (2012) reported provider/patient communication is a key component to manage chronic disease, and recommended using a health literacy assessment in all primary care settings to raise awareness and augment communication techniques. Clear communication can mean the difference between successful treatment and lack of follow-up. Additional factors to consider which influence patient health literacy include: the number of health personnel involved in the visit, patient understanding of educational/treatment information, trust, length of the visit, and language/cultural barriers (Committee on Health Literacy, 2004; Heinrich, 2012; Heinrich & Karner, 2011).

Two common health literacy assessments present challenges to use, or interpretation, when used in the clinical setting. The Test of

* Corresponding author. Tel.: +1 313 993 1505, +1 248 736 7172 (cell); fax: +1 313 993 1271.

E-mail addresses: mccunere@udmercy.edu (R.L. McCune), hyunhwa.lee@unlv.edu (H. Lee), jpohl@umich.edu (J.M. Pohl).

¹ Tel.: +1 702 895 3492.

² Tel.: +1 734 647 8570; fax: +1 734 647 0351.

Functional Health Literacy in Adults (TOFHLA) (Parker, Baker, Williams, & Nurss, 1995) addresses multiple domains (reading, comprehension and numeracy) but is time consuming to administer. The Rapid Estimate of Adult Literacy in Medicine (REALM) (Davis et al., 1993) is convenient but measures literacy within a narrow scope, primarily evaluating reading ability. In the primary care setting a tool needs to be time sensitive, easy to administer, and address wide areas of health literacy (reading ability, numeracy skills, and problem solving).

There is little controversy regarding the importance of health literacy to patient care. Yet research reports are limited related to the integration of standardized health literacy assessments in health care settings, particularly primary care. The following study endeavored to address this deficit through the use of the Newest Vital Sign (NVS) (Weiss et al., 2005), an ice cream nutrition label capturing reading ability, numeracy, and problem solving skills. The NVS was administered at seven primary care safety net clinics, five of which were nurse managed health centers (NMHCs). All seven clinics served very diverse, and often underserved, populations.

Safety net providers/clinics primarily deliver services to the underserved, vulnerable and uninsured, providing care regardless of ability to pay (Lewin & Altman, 2002; Pohl, Barkauskas, Benkert, Breer, & Bostrom, 2007). Most often providing primary care, safety net clinics may be found in a variety of settings such as: low income housing, public health departments, schools, public hospitals or rural clinics. The seven sites in this study represented university supported and “free” community clinics.

The study focused on the following objectives:

- 1) To examine provider–staff awareness of patient health literacy status within the primary care setting
- 2) To explore provider and staff perceptions of health literacy screening
- 3) To test the implementation of a standardized tool (The Newest Vital Sign/NVS) to measure health literacy in primary care health centers to:
 - A. obtain sample percentage of health literacy in each clinic
 - B. examine the time it takes to administer NVS: timed data
 - C. examine patient perspective on use of NVS in a primary care setting.

2. Methods

The study was part of a larger health literacy project funded by Blue Cross and Blue Shield of Michigan Foundation. The presented data were designed as the first step in assessing, and providing, educational health literacy content to primary care practices, preparatory to a larger study on safe care practices.

2.1. Design

In this cross-sectional exploratory study, the primary care practice settings were recruited from safety net practices, primarily NMHCs, in a Midwestern state. Using an existing consortium of NMHCs in the state, five NMHCs agreed to participate. A sixth NMHC (prison site) needed to withdraw due to institutional review board (IRB) concerns with the specific population. Additionally, two safety-net, multidisciplinary practices staffed with physicians, nurse practitioners (NP) and physician assistants (PA) agreed to participate. All practices were serving very diverse and high need populations in four major cities (Table 1). Clinic locations were varied with two in the state’s largest inner city; one in the second largest city, and two more were in a university town. The two non-NMHCs were physician-led “free” clinics located in, and near, the state capitol providing services to rural and urban populations who lacked access to care.

2.2. Sample

A total of 282 patients participated in the study. Approximately 40 patients per site completed the NVS tool ($N = 282$). A majority of the

sample was female (62.1%) and younger than 51 years old (72.0%). Almost half of the sample was Caucasian (47.2%) and one third was African American (31.9%). English was the primary language of 83% of the patients and over one third reported to have 13 to 16 years of education (34.4%). One third of the patients were insured through Medicaid, 27% were insured commercially, 22% were insured with a limited local County Health Plan option, 5% were insured through Medicare and 14.9% were uninsured. It is important to note that those insured by the County Health Plan would have been uninsured without this limited, and somewhat restricted, insurance plan.

A total of 47 providers and clinic staff participated in a survey on health literacy knowledge and attitudes, which is not reported here. However, one item from that survey tool is reported which asked respondents to estimate the literacy level of their patients. The question read: “In your estimation: I believe _____% of our clinic population has limited health literacy”. The results are presented in the findings. Of the 47 caregivers, 11 were providers (9 NPs and 2 physicians) and 36 represented staff (e.g., medical assistants, billers, RNs, LPNs).

2.3. Instruments

2.3.1. Health literacy assessment tool

The six-item NVS (Weiss et al., 2005) was used to assess patients’ health literacy. The NVS has been validated against the TOFHLA (Parker et al., 1995) and the REALM (Osborn et al., 2007) both widely used assessments. The six-item NVS is constructed to capitalize on patient familiarity with nutrition labels; allowing for a quick assessment in the busy primary care atmosphere. Scoring of the tool is based upon number of correct answers with 0–1 = high likelihood of limited literacy, 2–3 = possibility of limited literacy, and 4–6 = adequate literacy skills. A laminated copy of the NVS was handed to the patient with the explanation, “We are seeing how well people understand written health information. We are using a food label and will ask you to answer six questions from the label, which is from an ice cream container.” The NVS captures reading, comprehension, and numeracy abilities with the patient answering six questions. The assessment was administered in both Spanish and English, depending on patient primary language (Fig. 1).

2.4. Ethical approval and procedure

The study was approved by the University of Michigan Institutional Review Board (IRBMED) and the institutional review boards of the other participating institutions. Data collection was completed over a 9-month period from November, 2008 to July, 2009. The co-investigator and two data collectors visited all seven primary care settings, collecting patient assessment data and interviewing providers and staff. Interactions with patients, clinic providers, and staff were conducted using an IRB approved script. The providers and staff signed a written consent form at the end of the introductory meeting. Because the study addressed health literacy, IRB agreed that patient participants could give verbal versus written consent. Five medical assistants in one clinic and three patients declined to participate.

Patients completed the NVS and answered demographic questions before they were seen by their provider. Three of the practices agreed that the researcher could administer the NVS with the routine vital sign process as the “sixth vital sign” (Heinrich, 2012). In the remaining centers, the NVS and demographic questions were completed in the patient waiting area or immediately following the visit in the exam room.

Demographic data from clinic providers and other staff were collected during an introductory staff meeting. At that time, providers and staff agreed to participate in the larger study and estimated what percentage of clinic patients were low health literate. On completion of the study an honorarium of \$1000 was given to each site. Patient participants received a \$15 gift card for participation time and project input.

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