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A conceptual model of Verbal Exchange Health Literacy

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Abstract

Objective—To address a gap in understanding of verbal exchange (oral and aural) health literacy by describing the systematic development of a verbal exchange health literacy (VEHL) definition and model which hypothesizes the role of VEHL in health outcomes.

Methods—Current health literacy and communication literature was systematically reviewed and combined with qualitative patient and provider data that were analyzed using a grounded theory approach.

Results—Analyses of current literature and formative data indicated the importance of verbal exchange in the clinical setting and revealed various factors associated with the patient-provider relationship and their characteristics that influence decision making and health behaviors. VEHL is defined as the ability to speak and listen that facilitates exchanging, understanding, and interpreting of health information for health-decision making, disease management and navigation of the healthcare system. A model depiction of mediating and influenced factors is presented.

Conclusion—A definition and model of VEHL is a step towards addressing a gap in health literacy knowledge and provides a foundation for examining the influence of VEHL on health outcomes.

Practice Implications—VEHL is an extension of current descriptions of health literacy and has implications for patient-provider communication and health decision making.

Keywords

health literacy; oral exchange; oral literacy; patient-provider communication

1. Introduction

Literacy is a skill that when combined with social skills becomes “functional literacy” and enables effective participation in society [1]. Health literacy is usually discussed in terms of functional health literacy and commonly defined as: “the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed

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to make appropriate health decisions”(p.32) [2, 3]. In 2004, the Institute of Medicine (IOM) described the array of skills subsumed by health literacy to include reading, writing, speaking, listening and numeracy [2]. Yet, to date, most of what we know about health literacy's role in health outcomes is based on reading and numeracy skills. There has been minimal examination of the roles of speaking or listening skills and their impact on overall functional health literacy. Speaking is often referred to as “oral” and listening as “aural” health literacy. Oral health literacy most often refers to dental health literacy in the literature; therefore, we propose “verbal exchange” to represent the speaking and listening skills required for two-way communication.

Over one-third of U.S. adults is estimated to have inadequate health literacy [4] which has been linked negatively to health issues, such as poor asthma outcomes [5], poor diabetes control [6, 7], poor medication adherence [6, 8, 9], and more hospitalizations and less preventive care [10]. Inadequate health literacy also has been found to directly contribute to known health disparities in vulnerable populations [10-21] and accounts for an estimated \$106-\$238 billion in costs of healthcare insufficiency [22]. Patients with limited health literacy are reported to have less interest in shared health decision-making [23-26] which has implications for treatment adherence and health outcomes [27, 28]. Complicating the patient's experience is that healthcare providers have difficulty detecting patients with limited health literacy [29, 30].

The communication of everyday information occurs on multiple levels, including interpersonal, group, organizational, mass, and technological, through two primary formats, oral and written [31]. Despite multiple communication levels and modes, patients most often prefer and exchange a large percentage of personal health information through interpersonal verbal communication with the healthcare provider [32, 33]. Unfortunately, patients report understanding and retaining only about 50% of the information their providers discuss [34, 35]. Moreover, patients with limited health literacy are less likely to ask questions [36], seek information from print resources [37], or process (i.e., remember) verbally communicated medication instructions [38], further contributing to patients' inability to use information effectively. Speaking and listening skills are considered more important than reading and numeracy in patient self-advocacy within the healthcare system [39]. Two studies that have examined these skills, using Woodcock-Johnson test components “understanding directions” to determine listening skills and “story recall” to assess speaking, found a significant association between understanding and health outcomes [40, 41].

Verbal exchange skills are key to patient understanding and use of health information that impact health outcomes [2, 42, 43]. Despite this important role, the verbal exchange aspects of health literacy have not been defined nor described to the degree that reading and numeracy constructs of health literacy have. There is a need to better understand how verbal exchange of individually relevant information during the patient-provider interaction [44] impacts health outcomes and inequalities. An operational definition of “verbal exchange health literacy” (VEHL) and theoretical model of VEHL are first steps in addressing this need and can provide the foundation to use VEHL to inform intervention design and educational approaches, and its evaluation, including in outcomes research. The focus of this paper is to describe the multi-step development of the proposed definition and model of VEHL presented herein.

2. Methods

The development of a definition and model of VEHL was a multi-step process (see Figure 1) in three interconnected phases. Details of these phases are described below.

Phase I - Review of health literacy and communication literature

We reviewed the health literacy and communication literature to identify current health literacy definitions, models, theories and categorize contributing factors and influences on verbal exchange. PubMed and Google Scholar search engines were used; the following search terms were included: *health literacy, functional health literacy, verbal exchange communication, health literacy AND decision-making, oral literacy, oral health literacy, aural literacy, aural health literacy, health literacy AND speaking, health literacy AND listening, health literacy AND health outcomes, patient-provider communication, model of health literacy, health literacy framework, theory of health literacy, and communication theory*. As part of the literature review, existing conceptual models of health literacy were reviewed to identify predisposing influences (e.g., demographics, healthcare system characteristics) on health literacy and their inter-relationships. Factors identified as related to health literacy or mediating its role in health outcomes were examined for their probable relationship to VEHL. The potential influences on VEHL and mediators of its role in health outcomes were then grouped using a card sort procedure to identify like factors. Each group of factors was then reviewed and assigned a “theme” label, which serve as the bases for the VEHL factors, and the wording of a VEHL definition.

Phase II – Data Collection

a. Provider interviews—As part of an exploratory health literacy study, pediatric healthcare providers were asked to use their clinical judgment to rate the health literacy of their patients' caregivers as adequate, marginal, or inadequate, immediately following the child's clinic visit. One-on-one in-depth interviews were then completed with providers to identify the specific factors they considered in assessing a caregiver's health literacy, and how their assessment influenced what and how treatment recommendations were communicated. Themes were identified and prioritized using two stages proposed by Thomas and Harden: stage 1 involved coding interviews based on patterns of meaning within the text, and stage 2 identified descriptive themes from these patterns [45]. A constant comparative method allowed concomitant examination of data across interviews and to review interview responses after coding to ensure no themes were overlooked [46].

b. Development of qualitative questions for patient focus groups—From the first two steps, focus group questions and a moderator's guide were developed to elicit the patient perspective of factors identified in Phase I and to further elucidate relationships among the identified potential VEHL factors.

c. Patient Focus Groups—Six focus groups were conducted, two with each of three health literacy levels as determined by the Newest Vital Sign [47]: Low (high-likelihood of limited), Mid (possibility-of-limited), and High (adequate). One focus group with patients representing each level was held in Alabama and in Michigan. IRB approvals from the University of Alabama at Birmingham and the University of Michigan were received prior to recruitment and data collection. Patients were recruited from federally qualified healthcare centers and a family medicine clinic. Group discussions were digitally recorded and transcribed verbatim. Analyses were conducted using a grounded theory approach [48], with each focus group coded separately with thematic categories developed across all transcripts. Four independent researchers coded each transcript with consensus resolution (e.g., adding or collapsing codes) to resolve coding discrepancies. Themes and sub-themes were identified by the two authors and given priority ratings by their frequency of appearance in the transcripts.

Phase III – Development of the VEHL Definition and Model

a. Draft of the VEHL definition and model—Findings from Phase I and the healthcare provider interviews provided the basis for an initial draft of a VEHL definition and the constructs of the model. Relationships among constructs also were delineated.

b. Refinement of the VEHL definition and model—Themes from the focus group guided revision and refinement of the VEHL definition and model. Factors identified by patients were added with relationships among factors further specified.

3. Results

Phase I - Review and thematic identification from the literature

Reports from the IOM and Healthy People work groups on health communication and health literacy were used to identify the primary types of health tasks experienced by patients: clinical, prevention, and navigation of the healthcare system [49-51]. Factors related to a patient's ability to complete these tasks, along with basic speaking and listening skills necessary for verbal exchange, were identified from existing health literacy frameworks, communication theories, and research on patient-provider communication.

a. Communication theories and models—Two communication theories/models were identified as particularly applicable to verbal exchanges within the healthcare setting: McGuire's Communication/Persuasion Model (McGuire) [52] and Watzlawick, Beavan and Jackson's Interactional Theory (Interactional Theory) [53].

McGuire describes input and output variables that effect communication. “Receiver” characteristics, such as demographics, ability, personality and lifestyle, impact communication and are considered the most important of the five input variables as other variables rely heavily on them. For the receiver (patient), the credibility of the source (healthcare provider), the type of information and repetitiveness of the message (health condition and acute vs. chronic messages), the modality and context of the channel (in person – verbal vs. written) and the destination or specificity of the message (specific behavior vs. general admonition) all impact their ability to understand and use health information. Communication, as an exchange, is bi-directional with the provider also in the role of the listener (receiver) of the verbal (channel) description of symptoms/history (message) from the patient (source). This exchange may be positive or negative and in some cases may not be effective if the patient or provider do not fully participate.

Interactional Theory proposes that communication has both content and relationship components, and that it is either symmetrical (same power balance) or complementary (differing power balance). Communication in the medical setting has disease or health specific content while the relationship reflects the context of the communication (number and type of previous interactions). As healthcare providers are usually in a more powerful position as the “expert,” communication is most often complementary.

These theories support inclusion of both patient and provider characteristics, with their relationship mediating the clinical exchange. Particularly, we adopted patient characteristics, health issue context, and history and type of previous exchanges as factors influencing VEHL.

b. Health literacy and communication factors—We found two primary sources of factors to consider: those identified by patients and those identified empirically. We drew upon both to specify factors and relationships for the VEHL model.

Jordan et al. report seven patient-identified capacities as important in seeking, understanding and utilizing health information within the healthcare setting [54]. In addition to knowing when and where to seek health information, the patient needs to possess verbal communication skills, assertiveness, literacy skills, the capacity to process and retain information, and application skills. We incorporated these capacities into the model under three factors in *Patient Characteristics*: health system experience, attributes and skills. Further, patients' identified socioeconomic (SES) circumstances, social support, provider approach to information delivery, the nature of the healthcare setting (e.g., emergency room) and emotional distress as influencing their ability to understand health information. Patients also have reported the importance of their relationship with the provider and his/her communication skills in their active involvement in their own healthcare [55]. These factors are represented in the VEHL model external to the patient characteristics. They are related to decision making (social support, SES), provider/system characteristics (provider approach, context), or relationship characteristics.

Demographic variables included in the model have been found to be associated with health literacy and patient abilities. Specifically, health literacy skills have been found to decline with age [56]. Education, which impacts health through economic and therefore lifestyle advantages, affects thinking and decision-making patterns [57].

Edwards, Davies and Edwards' meta-study report of influences on information exchange in the healthcare setting supports health literacy as critical to the information exchange that precedes decision-making (p.49) [58]. This suggested that health literacy mediates the roles of patient and provider characteristics and relationship in health decision making.

c. Health Literacy Definitions and Models—A number of health literacy frameworks focus on individual level capacity and traits while others describe health literacy in global contexts. For example, Zarcadoolas and colleagues propose an expanded model of health literacy to include domains of fundamental, science, civic and cultural literacy [59] while Nutbeam proposes health literacy in terms of the public health and societal realms [60]. These models extend into socio-ecological realms, highlighting external influences on the patient and the provider. In the VEHL model, external influences are found within both patient and provider/system level as factors that mediate the patient-provider relationship and exchange. These influencing factors include family/friends and others as well as technology (e.g., resources) and the health system (e.g., complexity and health issue).

Parker's and Nutbeam's views of health literacy focus on the intersection of the patient's skills and abilities and the healthcare system's demands and complexity [61, 62] emphasizing the role of the provider/system and the patient encounter. Roter and colleagues further develop the healthcare demand side in a framework for “oral literacy demand” [63, 64], having four separate language elements: 1) medical jargon; 2) general language complexity; 3) contextualized language; and 4) structural characteristics of dialogue [65]. Their descriptions focus on the communication demands of the interaction and are represented in the provider/system characteristics (language/communication skills; health issue context, interpersonal skills and patient-centered care).

Baker posits that beyond the individual's capacities, health literacy is influenced by the characteristics of the healthcare system [66], including the complexity of health messages. He posits that patients' use of acquired knowledge will lead to improved health outcomes over time. Similarly, in the arena of health psychology, vonWagner and colleagues propose a framework of health literacy and health related actions that includes the concept of experiential learning [67]. These frameworks suggest a reciprocal relationship between the

patients' knowledge and understanding and their health literacy, as one improves so does the other, both of which influences health via decisions and behaviors.

The model developed by Paasche-Orlow and Wolf [14] focuses on the influence of health literacy on healthcare access and utilization, the patient-provider relationship, and self-care and takes into account multiple layers of influence – specifically, the structural to individual levels, as well as external factors. From this model, we adopted external influences on health outcomes.

Phase II – Qualitative data

a. The provider perspective—Themes (see Table 1) from the healthcare provider interviews ($n=6$) focused on the verbal exchange between the parent and providers **based on** the provider's experience with the parent. **All six** providers reported using the parent's ability to articulate the child's health history and /or prescribed treatment plan in assessing health literacy. Themes that emerged from these data represent the influence of parent attributes and skills, role expectations, history of interactions within the healthcare system, satisfaction with the relationship, knowledge and understanding, parent motivation, and the impact of parent resources on health decisions, adherence and outcomes.

b. Focus group questions/protocol—The focus group protocol arose from the first two steps which identified areas for exploration: the patient's perceived communication with their healthcare provider (types of information, understanding and ability to articulate), use of verbally provided information (functional health literacy), perceived barriers and strategies for improving understanding during verbal exchange (for both patient and provider), and satisfaction with the relationship and healthcare information received in the clinical setting.

c. The patient perspective—Forty-nine clinic patients participated in one of six focus groups based on health literacy scores: 15 high; 13 mid and 21 low. Most were female (73%) and from minority race/ethnic groups (69% African-American, 8% Latino and 23% White). The primary themes emerging from the focus groups are presented in Table 2. The most often identified sub-themes related to the provider characteristics were communication skills and time spent with the patient. Patient sub-themes focused on their comfort with the relationship and lack of understanding (doctor provided information and more issue-specific information needed). Among those patients with low health literacy, major sub-themes were lack of understanding information provided, providers seen as poor communicators, providers don't listen, patients want more information and the primary way they get information is to ask questions of the provider. Qualitative findings confirmed the influences of both the patient and provider level characteristics in VEHL. For example, participants indicated that their previous experiences within a specific health care setting were likely to influence their willingness to exchange information with providers.

Phase III – Definition and Model of Verbal Exchange Health Literacy

Based on the findings from Phase I and the provider data in Phase II, we developed an initial definition and model of VEHL (not shown) which was then revised slightly to reflect the additional findings from the patient focus groups. The definition we propose for VEHL is:

The ability to speak and listen that facilitates the exchanging, understanding, and interpreting of health information for health-decision making, disease management and navigation of the healthcare system.

Consistent with this definition, we propose a model that depicts the impact of VEHL on health outcomes - see Figure 2.

4. Discussion and conclusion

4.1 Discussion

As with other definitions of health literacy, VEHL is functionally defined and context specific [68]. The proposed model has been designed to account for variability in an individual patient's VEHL based on the context, health problem, and provider. As healthcare tasks vary in difficulty by illness or preventive behavior, so does the demand required to understand and accomplish them. Further, variability in health decisions and resulting outcomes are subject to individuals' external factors.

The factors influencing VEHL include patient, provider, system and relationship characteristics which impact health outcomes [14, 66]. From the communication theories, we draw on the importance of the relationship of the communicators (patient-provider) and the content/context of the message. Patient characteristics include not only demographic descriptors, but cognitive and communication abilities. We recognize that patients have innate attributes which affect their communication and interpersonal skills, and learning of the healthcare "language." The patient's previous personal or observed health system exposures are valuable learning experiences, similar to the experiential learning that vonWagner et al. describe [67]. Each patient enters the healthcare system with a set level of informational resources at their disposal, such as internet skills, comfort in asking questions, and friends or family in the healthcare field, as expressed by our focus group participants. These resources influence their patient experience and their VEHL.

As with other health literacy frameworks [14, 54, 58, 61, 66], the provider/system level characteristics are seen as influencing the patient's VEHL. These characteristics, which include the level of patient-centered care practiced, the provider's ability to communicate clearly using plain language and interpersonal skills, the health issue context, the complexity of the system and the amount of patient face-time, represent the "demand side" of health literacy.

Together, patient and provider characteristics influence verbal exchange as well as the relationship characteristics. The relationship between the patient and provider is based in part by past experiences with the provider (and others) and the satisfaction with the specific experience. Unlike some models that view the patient-provider interaction as influenced by health literacy, we believe this interaction influences the patient's context-specific health literacy, as the patient and provider's relationship encompasses their abilities to communicate with each other effectively and therefore the patient's ability to understand and use information for decision making. As suggested by Edwards, Davies and Edwards [58], and expressed by patients in the focus groups, both the provider's and the patient's role expectations are important. Patients enter each interaction with expectations about how much they should and need to share, how much they will participate in decision making, and what the provider's role should be. Providers also have expectations regarding provision of health information, how the particular patient should participate in their healthcare, and perhaps expectations that the patient will ask if something is not understood.

VEHL is one dimension of functional health literacy; it may be combined with reading, writing and numeracy skills in the completion of tasks related to the identification, processing and use of health information. How all these dimensions inter-relate has not been explored and is an area for future research. However, we hypothesize that these dimensions share some inter-dependency as some of the influences (e.g., education, memory) are the same and they share some common components (e.g., vocabulary, number concepts). While all dimensions of health literacy may change with time and/or experience (e.g., math education increases numeracy skills; age impacts memory of medical terms), we suggest that

VEHL-related skills may be more malleable as they are influenced by every exchange within the health care system.

The patient's VEHL directly impacts the understanding and use of information exchanged between the patient and provider to make and act upon health decisions. The quality and maintenance of health decisions, including the adoption of treatments or preventive behaviors, impact health outcomes. Also influencing health decision making are patient motivation and patient resources. Our focus group participants described these factors as mediators of healthcare access and decision making rather than influences on understanding. VEHL also impacts an individual's ability to navigate the health system and access quality healthcare, as much requires speaking or listening (e.g., telephone calls to set up appointments, verbal directions within the healthcare facility).

There are several limitations to this study. There are other communication theories that could be applied to the health context, but the gain in specificity may be offset by complexity. Another limitation is that the provider interviews were conducted with a small number of pediatric providers who assessed parents, not patients, as part of a health literacy study. Therefore, their perceptions may not be representative of other types of providers. This warrants additional research, especially with primary care versus specialist physicians, as relationships may vary considerably. All participating patients were attending primary care appointments when recruited and therefore, we did not capture the perceptions of patients who attend specialty care clinics exclusively. Finally, as with any qualitative research, it is possible that personal subjective biases influenced interpretations of qualitative data. We attempted to address this by having four individuals code the focus group transcripts.

The VEHL model is specific to the aural and oral exchange of health information between patients and providers. VEHL is one of several constructs contributing to the patient's health literacy and ability to acquire and use health information as well as navigate the healthcare system. As verbal exchange is often the primary mode for sharing of health information, it is essential to explore its role in health behaviors and outcomes. Other constructs in health literacy (reading, writing and numeracy skills) combine with the VEHL to moderate health decision making and impact knowledge and conceptual understanding. In other words, acknowledgement of VEHL as factor within the total health literacy concept is essential to expanding the understanding of health literacy's impact on health outcomes.

Finally, some influences on VEHL vary by context and over time with each experience within the healthcare system as suggested by vonWagnor and Paasche-Orlow and Wolf, and with the exchange of other sources of health information (e.g., media, friends). As the patient-provider interactions and verbal exchanges with knowledgeable friends and family take place, a patient's VEHL, which may be static at any time point, continues to evolve.

4.2 Conclusion

Health literacy efforts and research focused on reading and numeracy related skills have initiated understanding of health literacy's role in health outcomes. A more robust approach requires an operational understanding of all constructs encompassed by functional health literacy. The delineation of VEHL (definition and model) proposed here is a step towards advancing this understanding. Future research should operationalize the model through use of a measure of VEHL, assessing its relationship with other dimensions of health literacy as well as its role in clinical and behavioral health outcomes, eventually leading to the design of interventions to improve VEHL for both individual and provider/system levels.

4.3 Practice Implications

Addressing the needs of individuals with inadequate health literacy to improve health outcomes may be advanced by expanding the emphasis on health literacy beyond reading, writing, and numeracy based skills to include VEHL. Increased understanding of the role of VEHL may allow more appropriate “universal precautions”; that is, facilitate better health decisions, self-management and outcomes through more effective patient-provider/system communication for all patients. This approach is consistent with the IOM's identified quality-based domain of patient-centered care [69], and will likely enhance shared decision making [32], both of which are associated with improved patient outcomes.

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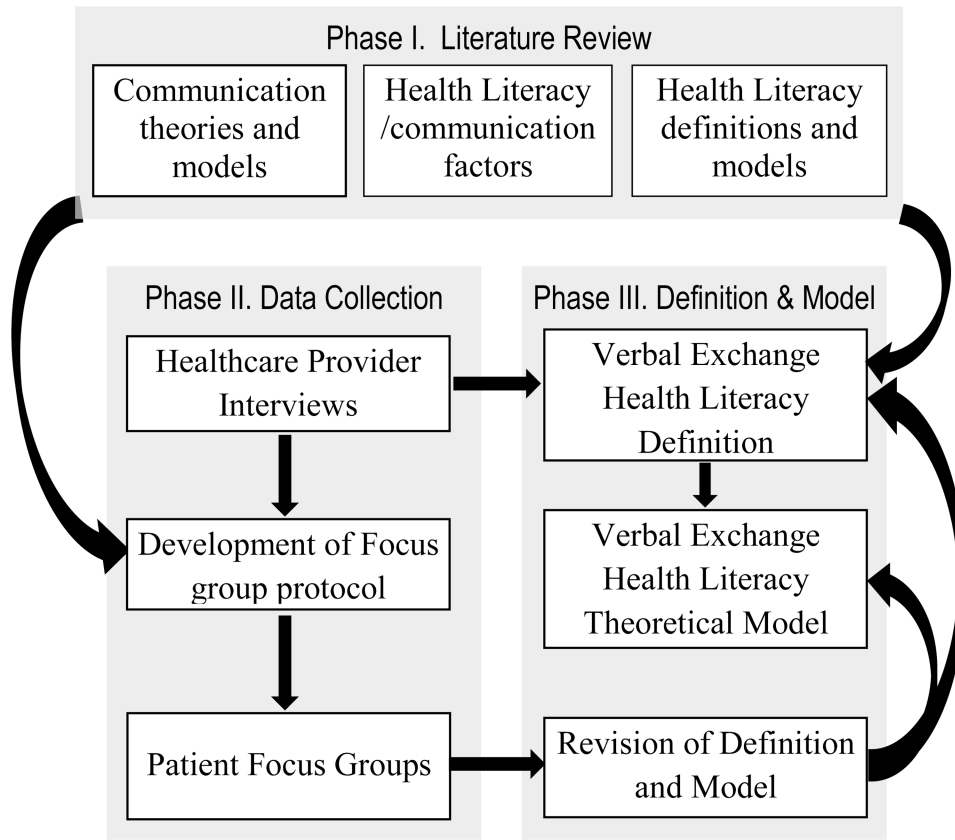


Figure 1. Systematic Protocol for Development of a Verbal Exchange Health Literacy Definition and Theoretical Model

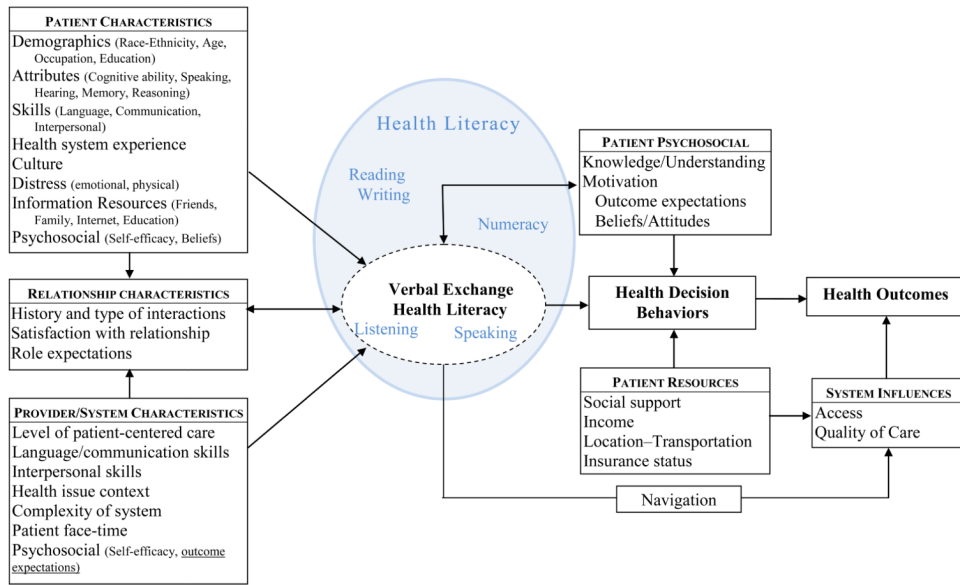


Figure 2. Influences on Verbal Exchange Health Literacy and Health Outcomes

Table 1
Provider Interview results and integration into the Verbal Exchange Health Literacy Model constructs

Construct in Model	Theme	Supporting Quote
Patient Characteristics (attributes, skills)*	Patient ability	<ul style="list-style-type: none"> • "How well she can tell me what the child's symptoms have been... without asking [the child]." • "If they can even tell what the treatment plan was... last time... or this time... I ask... sometimes I just get a blank stare."
Relationship Characteristics (history and type of interactions, satisfaction with relationship, role expectations)	Expectations	<ul style="list-style-type: none"> • "I can check refills, they tell me 'oh yes, I refill it' but then nothing shows up." • "They expect me to do everything, they don't think it's their responsibility... sometimes they blame the child."
Patient Psychosocial (knowledge/ understanding, motivation)	Patient understanding	<ul style="list-style-type: none"> • "Can they tell me about the medications, like which is which... they go by color, so if the pharmacist changes the fill, and it's a different color, they don't know what it is." • "The kid is sick, and they don't give them their abuterol. Just take him to the ED. We have a call service, but they never call... just go to the ED."
Patient Resources (transportation, insurance status)	Patient Resources	<ul style="list-style-type: none"> • "They come two hours late... couldn't get a ride... and don't call. Don't see it as a problem... we are just here waiting for them." • "We had to help her get them signed up for All Kids. She couldn't figure out how to do it so we do it for her. She can't afford the inhalers or coming here any other way."

* Quotes supporting the patient characteristics represent the assessment of parent/caregiver characteristics by pediatric providers interviewed in Phase I.

Table 2
Focus group findings representative of the Verbal Exchange Health Literacy Model constructs

Construct in Model	Focus Group Theme	Supporting Quote
Patient Characteristics	Patient Behaviors	<ul style="list-style-type: none"> • I ask questions and then I write down whatever they say (UM-3) • I ask them please explain to me like I was a little kid (UAB-2) • I can't remember everything (UAB-2) • You know you got to listen and talk to your doctor. That's the only way you going to get understanding (UM-3) • What good is the pamphlet on the information if you can't read well? (UAB-2)
Relationship Characteristics	Patient-Provider Relationship	<ul style="list-style-type: none"> • Sometimes it would make me uncomfortable because... if they don't really know me as well as my regular doctor. (UM-2) • I basically speak to him like I'm talking to someone I been knowing and he responds the same way so I like him (UAB-1) • He knows my history and so I'm comfortable telling him everything. (UAB-1) • You trust him and what he's saying. (UAB-2)
Provider/System Characteristics	Patient-Provider Communication	<ul style="list-style-type: none"> • Listen to what I say (UAB-3) • Genuine concern about what you're saying and paying attention to what you're saying. (UM-3) • I keep telling them, don't give us the technical • My doctor explains everything to me. (UAB-2) • My doctor always ends with "Do you have any questions? Is there anything else I need to explain to you? ... which is helpful.
System Influences	Barriers and Facilitators to Care/ Understanding	<ul style="list-style-type: none"> • Foreign doctors; I can't understand what they're saying (UAB-3) • They're rushing... you're just a simple number (UM-3) • Maybe if we had insurance and we had a regular doctor... if you have an emergency, he's more apt to say com in – he's gonna work you in to see what's going on, as opposed to an appointment for next week. (UM-1) • I'm not going to sit all day in the waiting room because I'm going to go home. (UAB-2) • I go the emergency room. (UAB-2)
Patient Resources	Health Care Behavior Decisions / Navigation of Health Care System	<ul style="list-style-type: none"> • I would do a lot of internet searching afterwards (UAB-1) • My mother's a retired nurse. I usually go home and ask her what it is. (UM-1) • ...my grandmother, because she's a retired nurse... (UM-1) • Always I try to find information on the internet. (UM-1)

Construct in Model	Focus Group Theme	Supporting Quote
Patient Psychosocial	Patient Characteristics, Health Care Behavior Decisions	<ul style="list-style-type: none"> • I guess I need to make better choices. (UM-1) • I get there are some things that you must do, some things that you should do and some things that you could do. It would be good to differentiate between those. The musts you need to have clear direction (UAB-1)
Health Decision Behaviors	Health Care Behavior Decisions	<ul style="list-style-type: none"> • You know it's kind of my choice whether I want to do right or not... It's kind of both our decisions maybe. (UAB-2) • I don't know what I'm taking it for and they aren't explaining nothing to me... And, I don't take them. (UAB-3) • You the doctor, you know you should be telling me. (UAB-1) • You pick and choose what you want to do. (UAB-1) • ...so, I decided to stop taking them on my own. (UM-1)

UM= University of Michigan and UAB = University of Alabama Birmingham. Level of health literacy as measured by the NYS is indicated as: 1=high group; 2=mid group; 3=low group