

*Review*

## **Review: Health literacy intervention and their consequences**

**Taha H. Musa, Wei Ping-min and Pu Yuepu\***

Key Laboratory of Environmental Medicine Engineering, Ministry of Education, School of Public Health, Southeast University, Nanjing 210009, Jiangsu, China.

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**Health literacy is one of the most critical issues threatening the public health today and there are significant gaps behind the discipline of health literacy. Low health literacy was found to threaten the health and welfare of people. The past decades witnessed a revolutionary alteration in the health patterns and disease spread among the community from infectious diseases to chronic diseases such as, heart disease, stroke, cancer, diabetes and accidents. Furthermore, to enhance health status among the population with effective intervention methods, through health teaching, increasing access to health information and communication technologies will eliminate the health literacy consequences among different community levels, including children and adults. The aim of the present review was to find out the current status about research progress towards health literacy. Furthermore, to examine health literacy status, intervention, possible consequences and future prospective, and to find out the options for improving health literacy status and fill in the future research. A systematic review based on literature research related to health literacy covered the recent publication from 2000 to 2014 years. The results indicated that the wide range opportunities for improving health literacy are coming through health literacy intervention among target community. Future research concerning health literacy is still needed to give much more efforts in the field of community and community health works.**

**Key words:** Health literacy, intervention, knowledge and community health.

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### **INTRODUCTION**

Health literacy is “the degree to which individuals can obtain, process, and understand the basic health information and services, to make appropriate health decisions”. It needs interpersonal skills for effective health care systems. These skills include

information, ability to interpret documents, read and write prose (print literacy), use the quantitative information (numeracy), and speak and listen effectively (oral literacy). In the recent years the importance of health literacy issue were increased to support and promote

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\*Corresponding author. E-mail: [yppu@seu.edu.cn](mailto:yppu@seu.edu.cn).

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health well-being among children and adults. It is concerned to meet the complex demands of health in a modern society (Kindig et al., 2004; Sorensen et al., 2012). Health literacy has been simply described "as the ability to read, understand and act on health information, which means promote good health, reduce health risks through the strength of primary health care providers, in order to develop health literacy of patients, and change patient lifestyle. Moreover, health literacy was a "key outcome from health education", which aim to reduce the consequence of health among the population (Nutbeam, 2000; Nutbeam and Kickbusch, 2000; Dennis et al., 2012).

Previous research indicates that low health literacy lead to poorer health status, negatively influence health outcomes, especially among the low-income groups (Al Sayah, 2013). Previous studies also suggest that people with "inadequate or marginal health literacy skills have a higher mortality rate over a five year age than those with adequate health skills". Although routine screening for inadequate health literacy in clinical settings is still contentious with poor outcome in prevalence rate among the US population (Paasche-Orlow et al., 2005; Berkman et al., 2011), with such situation leading to increasing the interest in the health literacy project. Health literacy is a practically new concept, with its first paper published in 1974 entitled "Health Education and Social Policy" and it was simply described as the ability to read and comprehend written medical information and instruction (Coulter and Ellins, 2006). The modern idea of health literacy literature appeared in the mid 1990s and it has rapidly presert the attention of policy makers, researchers, and clinicians due to its general impact on health and human welfare, whereas, the term of health literacy remains a confusing concept (Peerson and Saunders, 2009).

Previous research showed that over 90 million adults in the US had less adequate health literacy skills, and 20% of adult that had reading skills their age was around 10 to 11 years. While recently, the poor health literacy was found linked with patient age, ethnicity, and level of education (Paasche-Orlow et al., 2005). Low health literacy was becoming a substantial problem in the United States. In 2003, more than 36 million adults in the United States were found to have limited health literacy, while the poor health literacy were increasing the risk of cardiovascular and higher rates of mortality and hospitalization among the patient (Paasche-Orlow et al., 2005; Baker et al., 2007).

As a result, the demands of health literacy and health information would lead to reduced risk of disease through improved people's habits, for adolescents and young adults in order to reduce the death among people of ages 15 to 24 years by at least 20% (People, 2011). Chinese

people used health education program as social marketing to increase health literacy and to realize significant health literacy among the Chinese population, as the intervention to improve people's health (Wang, 2000). Numerous research in health literacy interventions are in its early years, although there was evidence for improvement of health literacy in the long term, so far many intervention studies have been performed in the area of HIV/AIDS, asthma, health services use, psychological and physical wellbeing, adherence to medication, chronic disease, diabetes, hospital admission, hypertension, cardiovascular disease, reproductive health, and sexually transmitted infections (Morris et al., 2006).

Further works on cardiovascular disease treatments indicate that despite improvements in the diagnosis and treatment of cardiovascular disease, it remains serious consequences of personal and health care, financial level, while it leads to destruction due to the patient awareness (Health and Human Services, 2000). Furthermore, proper methods, model to understanding the relationship between health literacy, health knowledge and health behaviors among school student, community committee level, and promote a good health status and fill the gap in literacy within across specific populations are needed. According to these understandings, an urgent solution is needed for the presence of an effective central administration of health education and health literacy intervention among different population groups.

## METHODOLOGY

Strategy for selection criteria is depending on an online data sources for recent review. It is based on various wide literature in health literacy, much more it is focused on tracking recent papers among the previous research article related to understanding the health literacy, definition, intervention and their consequence, to find out the progress of current research, and to improve the health status of children and adults. Data were carried out from related databases, including primary online data based, such as Web of Science; Cochrane Database of Systematic Reviews, National Library of Medicine databases Pub (MED). Secondary online data covered the Google scholar, world Health Organization (WHO) publication, Centers for Disease Control and Prevention (CDC) web site. Among the 3.050 articles founded in Google scholar indicated the low heath literacy and 21.300 article cited highlighted the risk factors of health literacy programme, while only one article indicated the poor health literacy status. Article keywords raised by previous researchers was divided among screening articles as: Health literacy outcome, health literacy programme among children and adults, and health literacy skills, such as use of health care services cost and services. Health literacy interventions in male and female with low health literacy skills showed improve use of health care services, health outcomes, and cost effectiveness of health care, and improve health care service among different racial, ethnic, cultural, or age groups. Furthermore, the quantitative skills components of some measures have been extracted and used independently as measures of numeracy, to simplify this systematic review and find out the

progress towards health literacy consequences and intervention for healthy community.

### Definitions and features of health literacy

Health literacy is defined in the Institute of Medicine report, as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services (Kindig et al., 2004). More recent definitions focus on specific skills needed to navigate the health care system and the importance of clear communication between health care providers and their patients. Both health care providers and patients play important roles in health literacy. Health literacy is defined as the degree to which persons have the capacity to obtain, process and understand the basic health information and services needed to make appropriate health-related decisions (Health and Human Services, 2000). While many definitions for health literacy exist, the definition that has been adopted in this paper is, "the degree to which people are able to access, understand, appraise and communicate information to engage with the demands of different health contexts in order to promote and maintain good health across the life-course (Kwan et al., 2006). Evidence accumulated over the past two decades suggests that health literacy, defined as an individual's ability to obtain, process, and understand basic health information and services is needed to make appropriate health decisions (Clement et al., 2009). Based on this definition, three levels of health literacy have been described: they need health literacy research for improving the health of people to able, to access, understand, health information related to the different health contexts in order to promote and maintain good health across the life-course.

### Association with health knowledge, behavior and outcome

Evidence from health literacy research indicated that the association between health literacy and health behaviors has been proving nothing. Low-literacy at the individuals level is faced with problems of less health knowledge, lower self-management skills, higher rates of chronic illnesses, and do not effectively participate in preventive health care. On the other hand, limited health literacy person has also been shown to be associated with higher health care costs, greater use of health care services, and higher rates of hospitalization. Poor health outcomes were found linked with low literacy for patient around the world, while the inadequate health literacy lead to poor understanding of disease processes, poor recall and comprehension of advice and instructions, health beliefs that interfere with care, and poor problem-solving skills (Zarcadoolas et al., 2005).

### Relationship between health literacy, knowledge and behaviors

A number of researchers have investigated the relationship between health literacy, knowledge and behaviors. They found that the relationships varied by age groups. While other several studies reported that adequate health literacy improved the likelihood of good eating habits, regular exercise and cancer screening through thriving health awareness and share information among stake community holders. However, Wolf and Baker (2007) found individuals with low levels of health literacy which have less health knowledge and worse self-management of chronic disease, while health literacy framework were useful to explicate the relationships between health literacy and understand the relation between health information and health literacy (Zarcadoolas et al., 2005; Ishikawa and Yano, 2008).

### Important of health literacy

Importance of health literacy comes from the contribution of the inadequate health literacy which has been found to directly contribute to the health gap in vulnerable populations. Women's health-related behaviors in Taiwan present health literacy research is unclear about the contribution of health literacy to health behaviors and is limited regarding women's health issues. It was found that the association between health literacy and five health behaviors, interestingly women with higher health literacy were more likely to be a current smoker. Research over the past few decades has received increasing attention in the health field and established powerful links between educational attainment and health outcomes, especially for patients with chronic disease, while further studies indicated that patients with limited health literacy have less interest in participating in health decision-making (Paasche-Orlow et al., 2005; Baker et al., 2007).

The current estimation of health literacy research which comes from the research literature on health literacy has expanded exponentially, with nearly 6,477 Pub MED-listed publications from (2000 August, 2014). In the past years, health literacy has received the attention of researchers in the health field. It is also a fundamental element of self care system. Evidence-based medicine can increase our understanding of the critical health literacy construct and help us understand its usefulness as a social asset which helps individuals towards a critical engagement with health information (Rudd, 2007).

### Health literacy skills and intervention

Evidence has shown that health literacy intervention can have positive effect on health, particularly when combined with each other; further research indicated that health literacy skills declined with age. This is a fact that health literacy intervention is directed at relatively advanced students and requires a considerable investment of formal educational resources (Chinn, 2011). Researcher summarized that doctor, nurse, dentist, pharmacist, or public health workers also need health literacy skills in order to help people to better understand health information and services (King, 2010).

### Health literacy consequences

The consequences of low health literacy include poorer health outcomes and furthermore associated with several diverse health effects, patients with limited literacy are at higher risk for poor health outcomes (DeWalt et al., 2007). Other researchers added that low health literacy levels might provide an additional barrier towards achievement of health care goals. These are negative consequences that limited health literacy has on access to care, service use, and health outcomes, not just for adults, but also for their children (Rootman and Ronson, 2005; Tokuda et al., 2009). Researchers began to consider health literacy in adolescents; however, no research was done directly with children, which is a critical oversight because health-related knowledge, attitudes, and behaviors developed during childhood are increasingly being recognized as foundational, deeply rooted, and resistant to change later, when children become adults (Hironaka and Paasche-Orlow, 2008). Further research indicated that increased risk in emergency situations, lack of social empowerment and self-efficacy, and increased financial costs, increased burden on health care providers. Low health literacy also results in misuse of the health care system, such as increasing of chronic disease due to the results of low health literacy, adverse events resulting from medication errors.

While patients' literacy and their ability to understand medication prescription are increasingly seen as a safety issue for being at healthy condition, so far health literacy skills were conserved as opportunity methods to improve patients' knowledge of their chronic diseases such as (Heart disease and stroke), cancer, cardiovascular, diabetes, and accidents (King, 2011). Inference indicated that China mortality due to chronic diseases and cancer has become the leading cause of death in overall population (Gazmararian et al., 2003; Davis et al., 2006).

## DISCUSSION

Based on the literature review, we found significant evidence of limited health literacy skills in children and community level, in response to situation of a million adults world-wide still struggling from low health literacy and difficult in understanding even the basic health information. Despite clear standards for developing and developed countries, low-literacy and health awareness knowledge is still under growth, while the improvement of health literacy status is still needed more, as mechanism to understanding the situation among different peer groups of the population.

Community at family levels were limited by health literacy, the complexity of health information may present significant barriers threats to child health status, such situation need unique health care attention and efforts to overcome the consequence of health literacy among them. However, this shows that policy implications at community, national, and international levels are the way to improve and understand the pathways of health literacy and their interventions of health at patients and family, relatives, or friends in particular situation. The efforts for transferring knowledge need more efforts by health workers to develop methods and ways for handling health information and multi strategies such as effect of policy and practice. Effective health literacy programs is needed among the community, while research indicated that improving health literacy has been one of objective for a healthy people in 2010. Several researches indicated that the health literacy consequences was one of main issues and responsibility towards health professionals and public health medical practitioners' and community health workers responsibility for improving health literacy health systems (Driessnack et al., 2014). Finally, opportunities for improving health status are coming through health literacy intervention among community. Therefore future research concerning health literacy is still needed.

## Conflict of interest

The authors have no conflicts of interest to declare.

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