

Health Literacy Status

Subjects: Medical Informatics

Contributor: Nooshin Peyman

Health literacy (HL) is a key element of health promotion that has been increasingly investigated since the 1990s. This term was first published in 1974 at the health education conference, which discussed the determinants of social health that affect mass communication, the health-care system, and health education issues.

Keywords: health literacy ; health literacy interventions

1. Introduction

Health literacy (HL) is a key element of health promotion that has been increasingly investigated since the 1990s. This term was first published in 1974 at the health education conference, which discussed the determinants of social health that affect mass communication, the health-care system, and health education issues ^[1]. Relevant evidence had shown that HL is a complex issue, and low HL can increase an individual's health status, health outcomes, and the risk of misinterpreting treatment instructions ^{[2][3]}. The World Health Organization (WHO) defines HL as follows: "health literacy implies the achievement of a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions". This definition confirms that the concept of HL is not simply a functional ability (the ability to read and write), it includes different skills that empower people to attend more fully in community and to exert a higher degree of control over their health action and health decision-making ^[4].

The concept of HL has emerged from two distinctive roots that describe HL, respectively, as a personal "asset", or a clinical "risk". The clinical "risk" reflects recognition of the impact that low HL can have on the effectiveness of health service organization and clinical care. Improved sensitivity of service organization and clinicians can enhance the quality of patient–health provider communication and improve access to health care services. This leads to a health service organization better placed to provide patient education and management that will help to improve patient ability and health outcomes associated with successfully adhered to recommended clinical care ^{[2][4]}. The concept of HL as an "asset" has evolved from roots in public health, health promotion, health education and communication. This conceptualization is seen as a means to developing individuals' skills and ability to exert greater control over their health action (social, personal, and environmental) and health decision-making. Actions to improve HL are focused on the development of context intended to promote individual's health knowledge, self-efficacy, and self- management. This conceptualization of HL is less well tested through systematic research. Research to support the "asset" model is at a basic stage and it remains the main idea. Likewise, if achieving HL as described by WHO is to be the main aim, different measurement tools will be needed for different stages and ages. Different measurement tools will be required to distinguish between interactive, critical, and functional HL. Although assessing the concept of HL is not a totally new challenge in the social sciences, there will need to be comprehensive testing to ensure that the different measures not only focus on health information for personal benefit, but also on the social determinants of health ^[4].

Globally, HL policies and strategies are not yet well-known among health decision-makers and politicians. According to WHO, today's reaction-based health care centers are not suitable for the challenges of the recent century because half the world's population has access to poor quality health care services. Health systems' transformation around the needs of communities and people are more effective at improving HL and patient engagement ^[3]. Therefore, in the recent decade, great attention has been paid to improve individuals' HL skills (including reading, writing, listening, speaking, numeracy, and critical analysis) in the different communities ^{[5][6]}. Likewise, for 40 years, HL intervention has been used as a key educational program to promote individual's health status. Several studies have shown that health education interventions are incompatible with the characteristics of different populations. Previous research emphasized that HL interventions should be culturally adapted, evidence-based, and conducted by health professionals or providers ^{[6][7]}. From the more narrow perspective of the health system, the effectiveness and implementation of HL intervention are still equivocal in different communities because of methodological limitations and changes in health action ^{[5][7][8]}. According to

the available evidence, it is feasible to assess the HL status in different communities to clarify and understand the impact of HL on health inequality and health status [9][10].

In Iran, the term of HL was first entered in 1974 as a key element of health promotion, and it has been increasingly investigated since the 1990s [9][10][11][12][13][14][15][16][17][18][19][20][21][22][23][24][25][26][27][28][29][30][31][32][33]. To the best of our knowledge, no conceptual model for HL has been implemented in Iran including both a public health perspective and medical assistance. There is no rigorous national assessment of the overall status of HL in the Iranian population [34][35]. It is unclear which personal and psychological characteristics will influence HL intervention, and which pathways link Iranian patients with their healthcare providers and health outcomes. Given the importance of HL to public health, it is wise to examine what is being done to evaluate HL in the Iranian population for the first time. This effort will be practical in evaluating whether the health and social ambitions of Iran for sustainable health-promotion are well achieved. Therefore, we aim (1) to systematically review the status of HL in Iranian population, and the association between HL and its influencing factors; and (2) to examine whether HL interventions targeting the Iranian population can improve HL status, health promoting behaviors, and self-efficacy. Further, the challenges, gaps, limitations and the need for future research are discussed.

2. Search Strategy

In this review, a total of seven electronic databases were searched, including the Cochrane database, PubMed, MEDLINE, Scopus, Scientific Information Database (SID), Web of Knowledge, Google scholar, and Educational Resource Information Center (ERIC), from inception until January 2019. Furthermore, we hand-searched the reference list of all studies to find additional studies that were ignored by the search terms. We used the Medical subject heading (MeSH) keywords related to the term “health literacy” and combined with the following terms: “educational intervention”, “literacy”, “health providers”, “medication adherence”, “communication skills”, “self-efficacy”, “knowledge”, “health promotion behaviors”, “self-care behaviors”, and “primary care”.

3. Health Literacy Status

One of the main objectives of this review was to identify the HL status in the Iranian population, based on existing literature and evidence. As shown in the systematic review, most of the participants had inadequate or marginal HL. Therefore, HL is a growing national concern in Iran, like results from some national HL surveys that were conducted in other countries [6][36][37]. Limited HL (inadequate plus marginal) is prevalent in many communities in both developed and developing countries, accounting for one-third to one-quarter of the population. According to the 2009 National Assessment of HL in the United States of America (USA), it is estimated that nearly 12% of adults in the USA have adequate HL levels, 53% have marginal HL levels, and 36% have insufficient or basic levels [37][38]. A recent study that was conducted in the eight European countries on adult HL skills has shown that approximately 56% of men and women have inadequate HL levels (21%) or marginal (35%) [39], and limited HL was ranged from 29% in the Netherlands and 62% in Bulgaria [39]. Similarly, other studies have estimated the HL status among the Latino women in Philadelphia. They reported that up to 50% of the women have inadequate HL levels [40]. In Australia, the national HL survey conducted in 2006 showed that up to 52% of women and 57% of men in Australia have basic HL levels lower than the level required to meet complex needs of daily work and life [41][42].

The meta-analysis revealed that the overall HL status for included studies conducted during 2012 to 2014 was in the range of inadequate level, while there has been a significant improvement in the overall trend of HL status to marginal level after 2015. This may be due to the recent improvement in the epidemiological characteristics of Iran's healthcare characteristics [43][44]. In 2014, a stepwise plan, called the Health Sector Evolution Plan (HSEP), was launched in the healthy development national strategies in Iran. HSEP included multiple interventions and series of reforms to improve quality of hospital care and access to healthcare such as providing free basic health insurance to all Iranians, promoting primary care quality in health centers and hospitals, reducing out-of-pocket (OOP) payments for inpatient services, developing policies to encourage medical doctors to stay in deprived areas, updating tariffs to more realistic values, financial protection of patients with specific diseases or chronic disability, and promoting the family physician program and health services [45][46]. Recent studies reported that the HSEP program in Iran reduces the incidence of diseases and increases healthy lifestyles, health promotion behaviors, and the quality of the health care system [47][48]. In Iran, although the epidemiologic profile has been significantly changed, inadequate HL of people and self-care behaviors particularly in the low socio-economic population are the main concern for policy makers [49][48]. The inadequate HL can potentially threaten the efficiency and sustainability of HSEP because it is associated with a poor understanding of health information self-care management skill, and adherence to treatment leading to poor health outcomes such as an increase in the medical costs, hospitalizations, and higher mortality [48][50].

Likewise, the systematic review shows that TOFHLA and HELIA are the most common questionnaires used to measure HL. This may be due to the common usage of these questionnaires, representativeness of health-related duties, and their association with fluid cognitive abilities [51][52]. In addition, based on socio-demographic characteristics (education level, age, and income), differences in HL levels were found. Other studies report these differences more frequently [5][26][53]. A general trend showed that individuals with lower family income and educational levels have lower levels of HL and self-managed skills to engage health promotion behaviors, and have greater difficulties in understanding health information. However, the limited sample size and heterogeneity of studies using socio-demographic characteristics as a predictor or proxies does not permit us to conclude the effect of people's socio-demographic characteristics on the level of HL skills. Caution is needed when interpreting these results, and these data were not used in the meta-analysis process. Therefore, it is essential to conduct longitudinal studies to assess the effect of socio-demographic characteristics on HL status.

In addition, the limited number of studies examines the association between people's HL and health promotion behaviors or health information. However, the meta-analysis showed that HL has a positive significant association with people's self-care behaviors, self-efficacy, knowledge, communication skills, and health promotion behaviors. On the other hand, the included studies give us clear evidence that adequate HL led to an improvement in these outcomes [11][23][54][55][56][57][58]. Indeed, people with adequate HL use health skills that correspond to the well-established health information and behaviors [26][50].

4. Health Literacy Intervention

One of the main research questions of this review was to collect evidence on the effect of HL intervention on the improvement of HL skills, self-efficacy and health promotion behaviors. The studies included in the meta-analysis provide the clear evidence that HL interventions play an important role in improving these domains [25][59][60][56][61]. This result has been confirmed in more studies, which show that good HL intervention can greatly improve the understanding of health information and activation levels [6][42][62]. Given the diversity of designs of the included studies and limited sample size for each domain, these results need to be interpreted with caution and bear in mind the effect of Tavakkoli's study as a significant outlier [60][61]. While the inclusion of the Tavakkoli studies showed a large effect of HL intervention on improving patient HL skills, we think that the overall effect measured without the Tavakkoli studies shows a much more precise effect estimate, which certainly fits the trend observed in the other outcome.

The included studies in the systematic review showed that people's HL skills, self-efficacy, and health promotion behaviors significantly increase in the intervention group compared to the control group, particularly in low-socioeconomic participants [25][59][60][56][61]. These studies did not compare low socioeconomic patients to privileged patients. However, they demonstrated that although a disparity was higher among low socioeconomic participants in pre-intervention, disparities disappeared after the intervention [59][60][61].

They also highlighted that despite lower literacy and knowledge levels in low socioeconomic groups, they had more intention to understand the intervention's content, even when the intervention was adapted at mixed literacy groups [60][56][61]. This suggests that educational interventions based on HL strategies could be more beneficial for the patients in low socioeconomic groups, and could in turn district health disparities in treatment preferences, decisional conflict, knowledge, and uncertainty. All included studies in the systematic review were not unique to low socioeconomic participants, but consistent with the results of many studies in other communities, which found a significant effect of HL intervention in patients on the improvement of health information and condition-specific health outcomes [6][42][62]. Likewise, a study in this review examined the impact of interventions based on HL strategies on patient-provider communication skills and decisional conflict in hypertensive patients [60]. This study reported that brief communication skills training based on HL strategies for health providers may be an efficient way to improve hypertension outcome. Furthermore, three studies highlighted that clear content, format, length of the intervention, simple language, and clarity interfered with the intervention's effect [60][56][61].

5. Challenge and Gaps

In this study, we tried to highlight some of the major gaps and challenges in the field of HL research. The first gap in current research is that most HL studies were conducted in the general population with mixed socio-economic status. However, more than 60.8% of the total participants in this review were illiterate or under diploma, and 64% were low or moderate-income. The finding in the current review does not allow us to compare people's HL skills in different socioeconomic levels. Therefore, further research should be conducted to specifically investigate the effectiveness of HL instruments and intervention on low socioeconomic patients or privileged patients.

The second gap highlighted the lack of a fixed and clear definition for HL because some health professionals define more issues beyond the framework of health information [61][50]. This problem has limited collaboration works and international research on the HL concept.

A third main gap is that the primary healthcare centers and hospitals in Iran have not been managed based on their patients' literacy and HL levels. This may be a result of the disagreement in the definition of HL that affects how it can be categorized and estimated [47][48]. According to the study that was conducted on Iranian health providers in 2017, healthcare providers have low effective communication skills to guide their patients who have low literacy to understand and read all types of health-related materials. Likewise, most of the providers are unaware of the magnitude of this problem [63][60]. In reality, most patients in Iran have difficulty communicating with their physicians or providers and following up with medication instructions due to poor health knowledge, limited understanding of basic health vocabulary, and trouble in interpreting new concepts and information [63][60][47]. In Iran, although HL is fundamental for patient's understanding of health information, participation in treatment options, informed decisions, and adherence to appropriate treatment, it continues to lack systematic attention from healthcare systems and medical education [44][45]. Therefore, there is an urgent need to implement a training program in Iran clinician systems to improve provider–patient communication skills and advise them for improving communication with patients.

Fourth, no locally comprehensive screening instrument was found to categorize and estimate HL. Our finding in this review confirms this problem. As shown in this review, different instruments are frequently used to measure HL, and TOFHLA and HE-LIA (local tool) were the most common questionnaires. Further, the result of meta-analysis revealed that the overall ES of HL from studies using the HELIA instrument was markedly higher than those using TOFHLA or STOHFLA. This may be a result of the difference in the content of the questionnaire, examining items, and cutoff scores to defining the level of HL. The HELIA is a locally validated instrument in Iran to examine psychometric parameters based on the 5-point Likert scale but it is less sensitive for evaluating well-functioning HL skills [64][65]. This may have increased the likelihood of more measurement challenges and made conflicting results. It is interesting to note that there is no gold standard for estimating HL as there is no one clear definition of HL [61][36][50]. Several studies indicated that HL concepts need to be understood and designed based on the background of the local community [37][41], like the HL instruments that were designed in Japan [37], the USA, and Australia [41]. This may be due to the fact that the HL concept is culturally specific in different communities and there are difficulties to reconcile the differences in education and culture systems [8][41]. In this context, further studies should be conducted to design a comprehensive validated screening instrument for HL based on its own local predictive factors. With a validated local reference tool, healthcare providers know what exactly can be managed, and can be measured [8][50].

Last, the qualities of the included studies in interventional studies were fairly low and variable. This is primarily due to the small sample size, poor sampling design, limiting systematic follow-up, and a lack of longitudinal interventional studies. This may have increased the likelihood of different biases that reduce the quality of intervention and health inequalities in routine clinical care.

6. Limitations

Given the paucity of study in the HL concept, we include all study designs in this review. Likewise, there are no longitudinal studies on HL status in the Iranian population. Therefore, the low sample size increased heterogeneity to estimate the association between the HL level and socio-demographic parameters. However, this introduced association with significant heterogeneity was not pooled in the meta-analysis and only inferred in systematic reviews. We used a fixed-effects model and a random-effects model to estimate the effect of the heterogeneity. This analysis suggested a suitable homogeneity within the fixed/random-effects results. Meta-regression analysis revealed that the study time was a significant covariate of HL, and has a significant impact on the overall ES ($p < 0.05$) of HL among the patient population.

The second limitation is the low quality of the interventional studies that have further reduced the number of included intervention studies. However, this finding is consistent with the scores of quality assessments published in the Cochrane review of Decision Aids and confirms the need for improvement in the methodology of interventional studies that investigate the impact of HL interventions on health outcomes and health promotion behaviors [66]. Further, follow-up in these studies was not systematic and longtime. It is therefore difficult to interpret whether the effect of HL interventions could improve health outcomes and health promotion behaviors in routine care. However, a trend showed that HL interventions might benefit low-social-economic groups more than the higher privileged population. This result was interpreted with caution and was not used in the meta-analysis. Nonetheless, we stratify the available interventional studies based on the outcomes to reduce potential bias. Likewise, the funnel plot was used to examine potential publication biases. This plot shows no explicit gaps and the symmetry of the plot was reasonable.

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