

# Effect of an Educational Program on Level of Health Literacy among Health Care Workers

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**Abstract:** Background and aim: health literacy defined as cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. In present study, we examined the effect of an educational program on level of health literacy among health care workers in Iran.

**Methods:** this is a quasi-experimental study with using one-group pre-test/post-test design. Study conducted from January 2014 to July 2015. Samples were 90 licensed people who work in medical clinics in Qazvin, Iran. The educations consisted of a 4 and 5 theoretical and practical session and including infection, medication therapy, wound care, fluid and electrolyte therapy. Participants also received a six week clinical period in different hospital wards. Data were collected using a demographics questionnaire and Health Literacy for Iranian Adults (HELIA). The data was analysed using the Statistical Package for the Social Sciences (SPSS 16).

**Results:** Most participants were female. The mean ages of participant were  $38.49 \pm 8.41$ . Mean score of HELIA before and after education were 71.9 and 76.1 respectively. Results showed that the mean score of HELIA after receiving education increased compared to before receiving education and this difference was statistically significant ( $P < 0.001$ ). Before educational intervention, 4, 22, 38 and 14 people showed inadequate, not long enough, adequate and excellent level of health literacy respectively. After educational intervention, 3, 9, 47 and 19 people showed inadequate, not long enough, adequate and excellent level of health literacy respectively.

**Conclusion:** according to finding of present study, participant health literacy improves after educational program. Further study in this regards, recommended.

**Keywords:** Health literacy, educational program, health care workers, developing country.

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## 1. INTRODUCTION

World Health Organization (W.H.O.) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. This organ also determined five dimensions for this that includes physical, intellectual, emotional, social, and spiritual health [1]. Unhealthy lifestyle such as eating unhealthy foods, lack of exercise, smoking, emotional stress and poor eating habits that spread across the world in previous decade. In one study in this regards, Kushner & Choi examined the prevalence of unhealthy lifestyle patterns in diet, exercise, and coping among overweight and obese adults United State. Results of Kushner & Choi study revealed that unhealthy lifestyle patterns in diet, exercise, and coping is highly prevalent among this population [2]. Unhealthy lifestyle encountered people's health with many challenges [3]. In this situation, health systems have not adequately been able to meet individuals' needs and the need for self-management has increased in health care systems and people should take new roles for seeking information, understanding rules and responsibilities and making correct decisions for themselves, their families as well as their community [3]. The term "Health literacy" that first used in 1974 is very important factor that strongly affect

efficiency and effectiveness of health education and promotion programs [3, 4, 5, 6, 7]. This term defined as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health by WHO” [8]. (WHO) In other definition Health Literacy defined as “the capacity in which individuals have to obtain, process, and understand basic health information and services needed to make appropriate health decisions” [9].

Several studies in recent years tried to examine level of health literacy among people in the entire world. In one study in 2016, Tavousi et al., examined the health literacy among 20571 adult aged 18-65 in Iran. Although results of Tavousi et al., study showed that health literacy among Iranian adults is relatively acceptable, however 44% of participants in Tavousi et al., study reported limited health literacy. Age and education were factors that affecting adults health literacy in Tavousi et al., study [10]. In other study in this regards, Schillinger et al., examined the association between health literacy and diabetes outcomes among 408 English- and Spanish-speaking patients with diabetes. Results of Schillinger et al., revealed that diabetic patients with inadequate health literacy were less likely than patients with adequate health literacy to achieve tight glycemic control and were more likely to have poor glycemic control and to report having retinopathy. Schillinger et al., concluded that inadequate health literacy may contribute to the disproportionate burden of diabetes-related problems among disadvantaged populations [11]. In other study Liu et al., surveyed the health literacy and influencing factors of 1396 older person in China. Results of Liu et al., study showed that health literacy of their participants were at a low level. Results of Liu et al., study also showed that factors such as age, gender, race, education, household income, marital status and occupation affect older people level of health literacy [12]. Other study by Mollakhalili et al., in Iran that examined health literacy level in inpatients of educational hospitals of Isfahan university of medical sciences revealed that most of inpatients in of educational hospitals of this university have not adequate health literacy level and need to educational intervention [13].

Although health literacy received more attention in recent years, and several study conducted to examine level of health literacy and affecting factors, however study about interventional program for increasing person health level of literacy is very limited. In present study, we examined the effect of an educational program on level of health literacy among health care workers in Iran.

## 2. METHODS

The present study enjoys a quasi-experimental method with using one-group pre-test/post-test design conducted from January 2014 to July 2015. Samples were 90 licensed people who work in medical clinics in Qazvin, Iran. Each participant received oral information about study aim and asked to fill in a written consent form. Participants were assured that all data would remain anonymous, kept confidential and be stored safely. Ethical approval was obtained from Qazvin University of Medical Sciences prior to the collection of any data. Data were collected using a demographics questionnaire and Health Literacy for Iranian Adults (HELIA). HELIA is a reliable and valid instrument and include the following constructs: ability to read, ability and skills to access, understand, and appraise health information, make decisions, and practice in order to maintain or improve health. Items are scored on a 5-point Likert-type scale. The total score ranges from 0 to 100. Higher scores indicate more health literacy [14]. In present study, 0.98 coronbach alpha determined for this questionnaire. Before the study initiation, participants were asked to complete the demographics questionnaire and Health Literacy for Iranian Adults (HELIA). Twelve weeks after the study, participants were retested using the same instrument (HELIA). Participants were taught by faculty members of Qazvin school of nursing and midwifery. The educations consisted of a 4 and 5 theoretical and practical session and including infection, medication therapy, wound care, fluid and electrolyte therapy. Participants also received a six week clinical period in different hospital wards. The data was analysed using the Statistical Package for the Social Sciences (SPSS 16). A P-value of less than 0.05 was considered as statistically significant. Descriptive statistics (expressed as mean and standard deviation) and paired T- test for comparing the means of normally distributed before and after intervention were used.

## 3. RESULTS

There were 12 returned questionnaires which were incomplete and thus excluded from the study, therefore analysis was performed on 78 questionnaires. Among 78 people who answered the questionnaire 85.9% were female and the rest were male. The mean ages of participant were  $38.49 \pm 8.41$ . In total of 78 participants, 34, 31, and 13 were aged between 20 to

30, 30 to 40 and 40 to 50 years respectively. Of 78 people, 44 were married and the rest were single. Most participant (n=33) have less than five years' experience.

Mean score of HELIA before and after education were 71.9 and 76.1 respectively. Results showed that the mean score of HELIA after receiving education increased compared to before receiving education, and this difference was statistically significant  $P < 0.001$  (table 1 and 2).

**Table 1: mean and standard deviation of health literacy score before and after intervention**

Time	Mean and standard deviation	Higher score	Lower score	P value
Before intervention	71.97 ± 13.00	99.1	44.1	P < 0.001
After intervention	76.06 ± 11.08	97.6	39.4	

**Table 2: mean and standard deviation of health literacy in each domain before and after intervention**

Health literacy	Before intervention	After intervention	P value
Ability to read	69.00± 16.10	71.23 ± 16.60	P=0.25
Ability and skills to access	70.35 ± 16.40	74.67 ± 15.50	P=0.006
Understand	75.77 ± 16.50	80.31 ± 16.80	P=0.022
Appraise health information	64.82 ± 19.10	71.31 ± 17.00	P=0.001
Make decisions	79.86 ± 14.00	82.77 ± 12.90	P=0.038

Before educational intervention, 4, 22, 38 and 14 people showed inadequate, not long enough, adequate and excellent level of health literacy respectively. After educational intervention, 3, 9, 47 and 19 people showed inadequate, not long enough, adequate and excellent level of health literacy respectively.

#### 4. DISCUSSION

Health Literacy as an important issue in promoting person health is the capacity in which person have to obtain, process, and understand basic health information and services needed to make appropriate health decisions [9, 13]. The aim of present stud was to examine the effect of an educational program on level of health literacy of health care workers. According to finding of present study, education intervention can improve level of health literacy in this group of participant significantly.

Although several study especially in developed countries exist about level of health literacy and affecting factors, however to our knowledge study about effect of educational intervention for improving health literacy is limited to three studies. In first study in this regards, with using multi-stage random sampling method, Zhuang et al., examined the use of cell phone-based health education short message service to improve the health literacy of community residents in China. Intervention participants in Zhuang et al., study received health education short message services once a week for one year and their controls participants were sent conventional, basic health education measures. They used an instrument named "Rapid Assessment of Health Literacy" for measuring level of health literacy. finding of Zhuang et al., study showed that participant health literacy scores increased 1.5 points, from 61.8 to 63.3, after short message services intervention for one year ( $P < 0.01$ ). They concluded that short message services may be a useful tool for improving health literacy in this group of participants [15]. In second study in this regards, Tol et al., examined the effect of health education based on small group (each group contain 5 to 12 patient) on promoting knowledge and health literacy in 160 women with type 2 diabetes. For measuring health literacy and patients' knowledge, Tol et al., used Short Test of Functional Health Literacy in Adults (TOFHLA) and knowledge self-designed questioner respectively. Patients in intervention group in Tol et al., study participate in six educational sessions (45-60minuts). The educations in Tol et al., study consisted of a six educational sessions (45-60minuts). They used lecture, film, and group discussion. Differences between the scores of Knowledge and Health Literacy in two groups, after and before intervention, were statistically significant in Tol et al., study. Study findings indicated that education with small group's strategy in experimental group, in comparison with current education is effective [9]. The mean score of TOFHLA in diabetic patients who were in intervention group in Tol et al., study were 39.8 and 43.2 respectively. In patients in control group, mean score of TOFHLA were 43.2 and 41.7 respectively. Tol et al., concluded that education with small group's strategy is an effective

strategy for improving patients health literacy improvement [9]. In other study, Mamianloo et al., effect of small group intervention program on knowledge and health literacy among 150 patients with heart failure hospitalized at hospitals affiliated to Tehran University of Medical Sciences, Iran. They randomly assigned their patients in two groups. Patients in control group received usual care and patients in intervention group participate in a six month educational intervention (one time in each month). For achieving their educational aims, they used lecture, booklet and group discussion. Mamianloo et al., used TOFHLA for measuring patients health literacy before and six month after intervention. Results of Mamianloo et al., showed that mean score of health literacy in patients in who participated in educational session were higher compared to patients in control group. They recommended that health authority use of small group education method in the care plane of patients in the hospitals and rehabilitation centers [16].

## 5. CONCLUSION

Health literacy is very important issue that can affect person physical activity, mortality, self-care behaviors and health outcome [17]. Having adequate health literacy is required for health care workers [18]. According to finding of present study and few previous studies educational interventions can improve level of people's health literacy. Further study in this regards recommended. Also, due to the limited number of comparative studies on the different methods of education, there is a need for additional studies using other techniques such as mobile phone and e learning.

### *Limitation*

Low sample size and sampling method is major limitations of present study.

### *Conflict of interest*

No

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