

Educational intervention for students empowerment on promotion health Literacy and Adherence to Prevention and Control Procedures In corona crisis

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Abstract

Adequate health literacy is essential for preventive response to Covid-19 and enables people to valid information related health for constant health promotion. So goal is educational intervention for increase health literacy and adopt control Procedures against corona. This study is an experimental clinical trial. Then 350 students of Karaj universities were selected by stratified random sampling. In the Corona Crisis of 2021, they were divided into two groups of education and control. PC Procedures ($\alpha=0.80$) and health literacy (HLS-SF12) ($\alpha=0.81$) questionnaires were completed by 350 students by both groups online. The data were analyzed by SPSS software and descriptive and analytical statistical tests. The results indicated that before the educational intervention, the scores of boys and girls in the two groups were similar ($p>0.05$). But, after training, students' gender had a significant relationship with their health literacy and health prevention and control procedures in the education group ($p<0.05$) indicating that female students were more likely to adopt prevention and control procedures in comparison with male students. There was a need to promote health literacy related to Covid-19. These results are useful for policymakers, health professionals, university and library administration. It would also be helpful in developing useful directions for health literacy programs promoting health education and control management Covid-19 for community empowerment.

Keywords: Educational intervention, students empowerment, Health literacy, prevention and control procedures, Covid-19 pandemic.

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Introduction:

In December 2019, the World Health Organization received an epidemic report of a pneumonia-like disease in Wuhan, China, and on January 7, it was identified by the Chinese authorities as the Kuwait-19 virus[1] On January 30, 2020, the Director-General of the World Health Organization announced the emergence of a new disease. It is considered an emergency and risky situation For public health internationally[2,3]. On the other hand, social empowerment and increasing the potential of society leads to accepting responsibility for health. For social empowerment, while supporting the actions and activities carried out community groups[4,5]. Discrimination and inequalities must be eliminated and to individuals must be given the freedom to make decisions and actions so that they can control of their own health and community through correct decision-making and to be responsible for this[6,7,8]. The facilities and context of this empowerment should be provided at home, at school, at work and in the community[9]. Therefore, the empowerment process is a social function that promotes the participation of people, organizations and community, political efficiency, the community life quality Improvement, ultimately it leads to social justice and equality in the discussion of health[10,11,12]. It is an important goal in the functioning of society towards health One of the highlights in empowerment and strengthening of the community capacities is to pay attention to the fact that That capacity building empowerment and community participation is both a result of health promotion and a prerequisite. There is Sufficient evidence in most developed countries that bottom-up activities have a positive effect on the development and promotion of health in community[13,14]. On the other hand, not

only have social empowerment strategies an important role In many educational activities, social development ,Legislation and policy-making also,they have significantly prevented covid 19 disease[15,16,17].

The three main policies of empowering are the rapid diagnosis of patients with covid 19 with timely and rapid screening With Utilization the primary health care system, improving the condition of intensive care units and empowering the service delivery system to treat inpatients and outpatients, as well as supporting all health force that is engaged in prevention or treatment. Also use primary health care Established to treat mild cases of COVID-19, Public participation based on transparency, establishing justice in diagnosis and treatment, close cooperation between headquarters and local governments, conducting epidemiological research, optimal use of resources and strengthening the care system, Observance social distance as a rule, Compulsory quarantine solutions ,scientific findings, interventions and immediate treatment[17,18].

Health literacy, ie the ability to find, understand and evaluation health information and use it in daily decisions and health behaviors, is of great importance during the current epidemic[18,19]. In Iran, it has been shown that most people have limited health literacy[20]. This pandemic has increased the demand for the general public to find information about them, as well as to transfer information to their daily lives and practices[21,22]. Therefore, health literacy is a critical intervention goal[23]. Information carries important health information to curb the virus and empower citizens to demonstrate health literacy[24]. Health literacy (HL) is a key factor not to control the spread of infectious diseases such as Covid-19 but also in preventing

Excessive reactions and Reduces carelessness[25]. Health literacy has defined as a set of cognitive skills and social not only motivates but also enables people to valid information related health for constant health promotion, as well as for acting on vital medical information to survive the Covid-19 pandemic. Studies show that people with limited health literacy are more vulnerable to Covid-19 infection[26,27,28], They probably have higher fears and depression, and have less likely to adopt protective health behaviors[29]. The main purpose of this approach was presentation of necessary information how Its effect On the health of citizens[30]. Health-related information about COVID-19 on topics such as protective behaviors, preventative measures, treatment options, dashboard statistics, The latest Scientific insights and various safety recommendations became available to support healthy and protective behaviors during the COVID-19 pandemic[31,32]. Adequate health literacy is essential for preventive response to Covid-19 disease, because it not only enables people to use valid health information but also encourages them to adopt Prevention and Control Procedures. According the importance of the above cases[33,34], our goal is determine Educational intervention for students empowerment for promotion Health Literacy and Adherence to Prevention and Control Procedures in the corona crisis in the city of Karaj, Iran in 1400

Method:

Data collection instrumentations:

Health literacy of the university students was measured using the short form health literacy questionnaire (HLS-SF12) developed by Duong, et al., (2019) for the general public. HLS-SF12 was a unidimensional scale comprising of 12

statements. It is a reliable and valid measure of health literacy for evaluation of people's ability for accessing, understanding, appraising, and applying health information on healthcare, disease prevention, and health promotion. Besides, it was not only in agreement with the original and comprehensive 47-item European Health Literacy Questionnaire (HLS-EU-Q47) developed by Sørensen et al. (2013) but also validated with Asian countries such as Indonesia, Malaysia, Kazakhstan, Myanmar, Taiwan, and Vietnam (Duong et al. 2017; Duong et al. 2019). It is a comprehensive measure expanding its ability by adding virtual media and social support lacking in other instruments (Liu et al. 2018). The shortness of HLS-SF12 allows the researcher to combine it with other instruments to investigate its relationship with other constructs. The students were asked to respond each statement on 4-point Likert Scale such as '1= very difficult', '2= difficult', '3= easy', and '4= very easy'. The composite variable for health literacy was created by computing the mean scores of all the participating statements that represented the overall health literacy for each student. The greater mean scores indicated better health literacy among university students[35,36].

Adherence to Prevention and Control Procedures

Health protective behavior in the Covid-19 pandemic was assessed using 11 statements adopted from Naveed and Shaukat's (2020) questionnaire. Each statement was measured on a five-point frequency response scale, '1= Never', '2= Rarely', '3= Sometimes', '4= Often', and '5=Always'. The composite variable for health protective behavior was also created by computing means a score of all the 11 items for each student with a greater mean score representing a higher

frequency of health protective behavior[37,38].

Reliability of the questionnaire

The reliability of HLS-SF12 and health protective behavior, were checked using Cronbach alpha based on the data set of this study. The high values of Cronbach alpha indicated the internal consistency of the instruments used in this study such as HLS-SF12 (12 items, CA= .811), health protective behavior (11 items, CA=.800)[39].

The statistical population

The students of Karaj universities were in Iran, in 1400

Calculate the sample size of each floor

In this study, the main purpose is comparison of the health mean in the two groups of trained and control to determine the effect of training. The sample size formula was used for comparison of the two means so that with a confidence of 0.95 and a test power of 80% if the means difference be 10 score or more statistically significant to that the minimum and maximum score is 0-152, the standard deviation is 25.3 was considered. The sample size of each floor is obtained from the following formula[40].

$$\sigma = \frac{152}{6} = 25.3$$

$$D = \frac{\mu_2 - \mu_1}{\sigma \sqrt{2}} = \frac{10}{25.3 \times 1.2} = 0.28$$

$$N = \frac{(Z_{1-\beta} + Z_{1-\alpha/2})^2}{d^2} = \frac{(1.96 + 0.84)^2}{(0.28)^2} = 100$$

Method and intervention:

This study is an experimental clinical trial. Outset, students of Karaj universities were divided into five floors with using stratified random sampling in the corona crisis in 1400, and floors concluded Alborz University of Medical Sciences, Farhangian University, Vocational Technical University, University of Labor and

Knowledge and Payame Noor University also, permission was taken from each university. Entry condition were those who consented to participate in the study and completed the online informed consent form. 100 samples were selected from each floor by simple random method, which was a total of 500 samples. Then 500 students were divided into two groups of education and control and each group was divided into 25 females and 25 males. Then (HLS-SF12) were submitted to both groups online before training which 350 questionnaires were completely completed from 500 questionnaires (adherence to PC Procedures and health literacy questionnaires). Then educational intervention was held using lecture and video and questions and answers, a group discussion methods in 6 sessions (60-90 minutes) for the training group and after three months after the educational intervention, questionnaires were sent online to both groups. After completing the questionnaire, they were finally analyzed using SPSS software through statistical tests of Pearson correlation coefficient and Mann-Whini and Kruskal-Wallis and independent t-test.

Results

Characteristics of the survey participants

Out of 350 students who completed questionnaires in the survey, there were 46.50% males and 53.50% females. The ages of these students were ranged from 18 to 35 years (75%) students having age group Under 25 years, an age group of 26 – 30 years 17%. Only 8% students had their age larger than 30 years.

The distribution of all scores was normal except for total scores and P value was less than 0.05 in accordance with the KS test ($P < 0.05$). The scores of the two groups (control

and training) before receiving the intervention have been presented in Table 10. According to the Mann-Whitney test,

both the training and control groups had about the same scores in all dimensions ($P > 0.05$). (Table 1)

Table 1: Frequency distribution of scores in both control and training groups before the intervention

Group variables	training	control	T Statistics	Significance level
	Mean ± standard deviation	Mean ± standard deviation		
health literacy	27.51±3.812	15.23±2.431	2.49	12.985
Adherence Prevention and Control Procedures	25.64±4.033	15.47±2.547	2.55	12.985

Nature of Relationship of educational intervention for students empowerment with promotion health literacy and adherence to Prevention and Control Procedures in universitys after intervention in education group(N=350)

Pearson correlation coefficient was calculated to examine the relationship of educational intervention for students empowerment with promotion health literacy and adherence to Prevention and Control Procedures of university students. Table 2 revealed positive relationship educational intervention for students empowerment with health literacy ($r = .181, p = .004 < .05$) which meant that universities students health literacy increased also positive relationship educational intervention with adherence to Prevention and Control Procedures($r = .185, p = .005 < .05$) which meant that adherence to Prevention and Control Procedures of universities students increased. (Table 2)

Table 2 Correlation between educational intervention for students empowerment with promotion health literacy and adherence to Prevention and Control Procedures in universitys after intervention in education group (N=350)

Variables	Pearson Correlation	Sig
health literacy	.181	.004
Adherence Prevention and Control Procedures	.185	.005

*Correlation is significant at the 0.05 level

Impact educational intervention for students empowerment on promotion health literacy and adherence to Prevention and Control Procedures and frequency distribution of scores in both control and training groups after the intervention in karaj universities

A simple linear regression was performed to health literacy based on educational intervention in. Table 3 presented the details of the results. According to the results of the Mann-Whitney test, the obtained scores of variables including health literacy (29% vs. 17.1%), Adherence Prevention and Control Procedures (30% vs. 18.6%), These figures revealed significant regression equations ($F = 7.980, p = .004 < .05$), with an R^2 of .031 and to adherence to Prevention and Control Procedures based on educational intervention a statistically significant regression equation ($F = 7.890, p = .005 < .05$), with an R^2 of .033. It meant that Implementation of educational intervention increases the health literacy and adherence to Prevention and Control Procedures. Thus, the research hypothesis H1 and H2 is accepted.

Table 3 Impact Educational intervention for students empowerment on promotion health literacy and Adherence to Prevention and Control Procedures in karaj universitys after intervention

Group variables	training Mean ± standard deviation	control Mean ± standard deviation	Standardized Coefficients	T	Sig	F	Sig.	R 2
health literacy	17.15±3.675	29.3±3.167	.177	2.825	.005	7.980	.005	.031
Adherence Prevention and Control Procedures	18.55±3.40	30.03±2.661	.175	2.728	.005	7.890	.005	.033

After training students' gender had a Significant relationship with their health literacy and health prevention and control procedures in education group ($p < 0.05$) indicating that female students were more likely to adopt prevention and control procedures in comparison with male students.

Discussion:

This research intended to investigate educational intervention for on promotion Health Literacy and Adherence to Prevention and Control Procedures In corona crisis among the students of karaj universities of using a study is an experimental clinical trial in iran. The

results indicated that that Implementation of educational intervention increases the health literacy and adherence to Prevention and Control Procedures. that educational intervention makes health literacy Promotion and increase adherence to prevention and control methods to respond to the Covid-19 pandemic as it empowers people for acquisition and usage of credible health information and adoption prevention and control methods. These results appeared to disagree with that of Nguyen et al. (2020a) who reported that medical students in Vietnam with higher health literacy were less likely to have fear of Covid-19 and discovered that peoples' health literacy in

Vietnam indicated a protective effect on depression caused by Covid-19 pandemic and infodemic and improve quality of life[41]. Health literacy and adoption prevention and control methods of university students positively were predicted through educational intervention which meant that the students with emplement educational intervention Which increases health literacy and more likely to adopt prevention and control methods in Covid-19. Thus, these results supported the research hypothesis H1 and H2. These results were quite logical and is anticipated health literacy generally improve people's awareness about a particular disease and instigate them to respond it properly while adopting prevention and control methods. Similarly, it is applicable in Covid-19 pandemic situations. McQueen et al (2020) stated that the ability of people for reflection and evaluation of critical health issues not only improves their decision making but also enable to reduce carelessness, prevent over-reactions, and adapt to existing lifestyles[41]. It also enhances people's knowledge about a particular disease, prepares them for the collective societal response, and encourage them for the adoption of more appropriate adoption prevention and control methods especially in pandemic situations like Covid-19. This finding also appeared to be in line with that of Riad et al. (2020) who found that the people's knowledge of Covid-19 was more likely to adopt prevention and control methods Against covid 19 [41]. This result was also supported by the findings of Naveed and Shaukat (2020) who reported that education intervention positively predicted promotion health literacy and adoption prevention and control methods among university students[42]. This finding also confirms the results of Dobe (2012) who reported that people's knowledge

positively impacts health literacy and adoption prevention and control methods[42]. The study of Warner (2003) also discovered that individuals' knowledge about particular disease is linked to their health literacy and adoption prevention and control methods. The results of DiClemente et al. (1990) revealed that the knowledge of college students about AIDS predicted their HIV preventive behavior[42]. The people with more knowledge about the HPV vaccine had favourable attitude and behavior.

Conclusions

The current research showed that educational intervention appeared to predict promotion health literacy and adherence to prevention and control procedures of universities students. In addition, female students more likely to adopt prevention and control procedures than male students. Therefore, health literacy should be considered as a frontline tool for the prevention and spread of Covid-19 infection as individual preparedness is necessary proactively along pandemic situation. educational intervention is much needed now than ever as it has the potential to develop health literacy enable people for understanding the reason behind recommendations and the outcome of adopting to adopt prevention and control procedures. The governments should health promotion to take sustainable and strategic measures to respond actively to the Covid-19 pandemic. It would not only reduce the cost of health expenditures but also alleviate the overwhelming burden on health care systems. Paakkari and Okan (2020) stated that health literacy is an underestimated problem in Covid-19 requiring attention by the governments. They further argued that health literacy should be seen as a key element of social responsibly and a crucial

tool for information providers and receivers for mitigation of the Covid-19 pandemic. Sentell et al. (2020) advocated an interdisciplinary approach to improve health literacy. Therefore, interdisciplinary and strategic health interventions are suggested to promote health literacy not only in Iran but also in other developing countries sharing similar characteristics. The results of this study are useful for policymakers, health professionals, universities managers and library staff for promoting health and creating awareness related to Covid-19 pandemic. It would also be helpful in developing useful directions for health education programs promoting health literacy and prevention and control procedures to avoid and management Covid-19 infection. More investigations are needed to determine the potential benefits of health literacy for health care providers and health information providers in the Covid-19 pandemic.

In limitations, the findings of this research should carefully be generalized as the survey was conducted at universities students using online questionnaires. Although the sample size was sufficient to determine causal relationships, it is suggested that nationwide surveys should be conducted to explore the potential benefits of health literacy in controlling Covid-19 infection. However, this research did claim, in any way, to be the voice of neither whole karaj universities students nor the whole community in Iran.

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