Research Paper

Evaluation of Health Worker Education to Patients Recovered From COVID-19

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ABSTRACT

Background and Purpose: The COVID-19 pandemic imposes a significant burden on healthcare systems. Proper self-care practice in people can reduce the pressure on the medical staff and save time and expenses for the patients. We assessed the quality of self-care education of healthcare worker from the viewpoint of patients who recovered from COVID-19.

Materials and Methods: This cross-sectional study was conducted by convenience sampling on 346 recovered patients from COVID-19 who referred to the clinics and hospitals of Babol University of Medical Sciences, Iran, in 2021. A valid and reliable researcher-made questionnaire evaluated the quality of self-care education provided by a healthcare worker to patients. Data were analyzed by SPSS software, version 21 applying t test, analysis of variance, and Pearson correlation at a significant level of less than 0.05.

Results: The mean quality of the self-care education questionnaire was 98.28±12.12 out of 110 for 346 participants with a mean age of 46.17± 14.71 years. The mean score for communication skills, educational method, and content were 12.83±3.55 out of 15, 13.72±3.81 out of 20, and 71.71±7.6 out of 75, respectively. There was a relationship between marital status and educational content (P=0.005). Communication skills (P=0.002) and educational method (P=0.05) had a relationship with educational level. Age had a negative relationship with communication skills (P=0.005) and educational method (P=0.01).

Conclusion: This study showed the high quality of self-care education of healthcare worker on recovered COVID-19 patients. The design, implementation, and evaluation of self-care training should be considered according to the factors related to it such as marital status, educational level, and age.

Keywords: COVID-19, Self-care, Education

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1. Introduction

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from Wuhan, China, in December 2019 has placed a significant burden on medical staff and healthcare systems. Infecting nearly every country, World Health Organization (WHO) recognized this disease as a pandemic in March 2020 [1]. SARS-CoV-2 has proven to be more contagious than other members of the coronavirus family, namely Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) [2]. COVID-19 usually presents with fever, cough, dyspnea, and myalgia or fatigue, and while it is self-limiting in most cases, severe and fatal scenarios are not impossible [3]. Given the hospital overload and crowdedness in this pandemic, the important role of self-care behaviors has become more apparent than ever. Not only self-care behaviors could be implemented in the management of mild cases of COVID-19, but also they are helpful in transmission and disease prevention [4].

The WHO has defined self-care as the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with illness and disability with or without the support of a health worker [5]. Patient education is one of the main functions of healthcare professionals. It should be executed to further patient independence in taking care of themselves as much as possible [6]. Informing patients and involving them in decision-making can speed up recovery and reduce hospital stays and readmission; thus, it can have social and economic justifications. For every dollar spent on patient education, 3-4 dollars can be saved in expenses [7]. In this pandemic, it has been proven that protective measures such as social distancing and wearing a face mask as well as patient isolation can reduce disease propagation and avert infection [8, 9]. Educating the community members and the patients plays a vital role in promoting these self-care behaviors and can mitigate some of the unnecessary burdens on healthcare facilities [7]. High-quality education can increase patients' knowledge and satisfaction and reduce anxiety. Given that structured and individual-targeted education has proven to be better than the provision of general information, implementing an effective education and evaluating its quality is essential for optimal outcomes [10]. Therefore, considering the role of education and its effective factors in the prevention and control of COVID-19 and the lack of research in this field, the present study evaluated the quality of self-care education provided by healthcare worker from the viewpoint of recovered patients and the factors affecting this education.

2. Materials and Methods

In this cross-sectional study, we evaluated the quality of self-care education given by healthcare worker to COVID-19 patients. These patients were referred to two outpatient clinics in two distinct healthcare centers or admitted into three hospitals that were all affiliated with Babol University of Medical Sciences, Iran, in 2021. These patients had received self-care instructions besides the routine treatment. The quality of self-care education was assessed using a valid and reliable researcher-made questionnaire retrieved from the patients after their recovery from acute symptoms. The participants filled out an informed consent before entering the study.

Those patients were included in the study who were referred to the outpatient clinics or the hospitals due to a COVID-19 diagnosis, having symptoms and positive SARS-CoV2 PCR test results, and recovered from the disease from June to September of 2021. The participants were selected by convenience sampling method. The exclusion criteria were patients less than eighteen years old, patients whose symptoms did not alleviate or those who died during the study, and subjects who did not respond to the phone calls and did not return for the follow-up.

We used the Krejcie-Morgan formula to estimate the sample size. Assuming a confidence level of 95%, a margin of error of 5%, a population proportion of 50%, and a population size of 20000, a minimal sample size of 377 was calculated. Finally, 346 individuals participated in the study.

Demographic data were acquired from the recorded patients' histories. The quality of self-care education was assessed by a researcher-made questionnaire with 22 items. This scale divides into three domains including healthcare personnel's communication skills (3 items), educational method (4 items), and content (15 items). The response options included a 5-point Likert from completely disagree to completely disagree. The total score of the questionnaire was 22-110. The psychometric properties of the questionnaire were confirmed. The content validity index (CVI), content validity ratio (CVR), impact score, Cronbach alpha, and intraclass correlation coefficients (ICC) for the questionnaire were 0.95, 0.79, 4.64, 0.80, and 0.77, respectively. A ten-member panel including health and medical education specialists evaluated the questionnaire qualitatively, in terms of grammar, wording, item allocation, and scaling. To compute content CVI, a Likert-type ordinal scale was applied with

four possible responses (1=not relevant, simple, and clear to 4=very relevant, simple, and clear). CVI was estimated as the proportion of the number of the items that received a rating of three or four by the expert team to the number of all items. The acceptable lower limit of CVI is 0.8. The CVR identified the necessity of an item in an instrument. For estimating this indicator, the panel members rated each item as necessary, useful but not necessary, or not necessary. In the qualitative stage of face validity, ten participants were asked to appraise the scale and display if they felt the difficulty, irrelevancy, or obscurity in answering the items. The item impact method was utilized to demonstrate the percentage of women who recognized the item as important or quite important. The items with an impact score (frequency × importance) equal to or more than 1.5 were regarded as appropriate. We assessed the internal consistency and stability (test–retest reliability) of the instrument by Cronbach alpha coefficient (0.7 or above) and the intraclass correlation coefficient (ICC <0.4 shows poor to fair, 0.41–0.6 moderate, 0.61–0.8 good, and >0.8 excellent agreement). Thirty participants filled out the questionnaire two times at a two-week interval [11].

The statistical package for the social sciences, SPSS 21 was used. Mean±SD and No.(%) were applied to report the continuous and categorical variables. We assessed the relationship between categorical variables and the score of quality of self-care education by independent t-test and analysis of variance. The Pearson correlation was used to analyze the age and quality of self-care education relationship. A P-value of less than 0.05 was considered statistically significant.

3. Results

The 346 participants had a mean age of 46.17±14.71 years and 186 (54.2%) were female. Most of the participants (82.3%) were married, and 39% had a higher education. As shown in Table 1, 40.8% of patients were admitted to the public hospital.

The mean score of the quality of the self-care education questionnaire was 98.28±12.12 out of 110. The mean score of the three domains were 12.83±3.55 out of 15, 13.72±3.81 out of 20, and 71.71±7.6 out of 75, for communication skills, educational method, and content, respectively.

Table 1. Demographic characteristics of participants (N=346)

Variables		No. (%)
Gender	Female	186(54.2)
Marital status	Single	59(17.7)
	Married	275(82.3)
Length of hospitalization (day)	No admission	205(59.2)
	1-10	116(33.5)
	11-20	22(6.4)
	More than 21	3(0.9)
Referral center	Public hospital	233(67.3)
	Private hospital	44(12.7)
	Outpatient clinic	58(16.8)
Educational level	Uneducated	30(8.7)
	Middle school	73(21.1)
	Diploma	83(24)
	Bachelor's degree	91(26.3)
	Master's degree	44(12.7)
	Doctorate's degrees	18(5.2)

Table 2. The relationship between demographic variables and quality of self-care education and domains

Demographic Variables		Mean±SD			
		Communication Skills	Educational Method	Educational Content	Educational Quality
Gender	Male	13.06±3.36	13.86±3.70	72.43±7.35	99.36±11.47
	Female	12.69±3.65	13.61±3.84	71.16±7.82	97.47±12.60
Marital status	Single	13.05±3.27	14.08±3.75	*69.22±8.11	96.35±12.300
	Married	12.80±3.61	13.61±3.80	*72.21±7.33	98.64±11.97
Length of hospitalization (day)	No admission	12.82±3.64	13.86±3.74	71.37±7.50	98.06±12.09
	1-10	12.85±3.28	13.51±3.88	72.00±7.98	98.37±12.36
	11-20	12.59±4.32	13.50±4.27	72.77±6.94	98.86±12.20
	>21	14.66±0.57	14.33±2.88	76.00±4.00	105.00±2.00
Referral center	Public hospital	12.83±3.54	13.59±3.83	71.60±7.79	98.03±12.139
	Private hospital	12.40±3.69	13.38±3.68	71.72±8.91	97.52±14.31
	Outpatient clinic	13.41±3.35	14.67±3.61	71.82±6.05	99.91±10.42
Educational level	Uneducated	*10.73±4.80	*12.00±5.05	72.16±5.61	94.90±12.75
	Middle school	*12.47±3.63	*13.32±3.91	70.10±9.76	95.91±13.78
	Diploma	*12.87±3.17	*13.80±3.44	72.24±6.48	98.92±10.46
	Bachelor's degree	*13.67±2.99	*14.46±3.61	72.52±6.87	100.65±11.18
	Master's degree	*12.61±3.69	*13.70±3.46	70.86±7.83	97.18±12.21
	Doctorate's degrees	*14.11±2.86	*14.44±3.69	72.38±7.57	100.94±11.57
Age		Pearson's r	Pearson's r	Pearson's r	Pearson's r
		-0.15*	-0.12*	0.02	-0.07

*P≤0.05

There was a relationship between marital status and educational content (P=0.005). Communication skills (P=0.002) and educational method (P=0.05) had a relationship to educational level. Age had a negative relationship with communication skills (P=0.005) and educational method (P=0.01) (Table 2).

4.Discussion

This study showed the high quality of self-care education of healthcare worker on recovered COVID-19 patients. This new outbreak has once again highlighted the importance of self-care behaviors in public health management and disease control [12]. The efforts of physicians and healthcare staff are successful if people engage in self-care behaviors [13]. Self-care is a significant element of treatment and patients who take part in self-care activity have noticeably recovered clinical symptoms [14]. This study showed the high quality of self-care education of healthcare personnel on recovered COVID-19 patients. Applying effective communication skills, an educational method and content can enhance the quality of self-care education to patients. This finding is similar to Toukhsati et al.'s study on patients [15]. The face to face education is a useful approach to delivering self-care educational content to patients [13]. Ghisi et al. systematic review revealed a significant and positive association between educational interventions and behavioral changes in cardiac patients [16]. Each patient is informed about self-care behaviors, and we can hope that their entire family is also influenced by our intervention, which could widen our target popula-

tion. A well-executed self-care education not only advocates for disease prevention and self-management of non-urgent symptoms but also counters inappropriate or potentially dangerous self-care treatments [17].

There was a relationship between marital status and educational content. The married people were more satisfied with the content of self-care education. Zheng et al. have demonstrated that self-care literacy is high for the married group because married persons are more likely to check their health status [18]. Bohanny et al. reported a relationship between marital status and self-care activity [19]. Separation or divorce is significantly correlated with less self-care in admitted patients with heart failure [20]. However Shojaei et al. found that single people have more opportunities to perform their caring behaviors because of their lower family responsibilities than married people [21].

The participants with higher education levels scored higher in communication skills and educational method. Bai et al.'s study indicated that self-care behavior was significantly influenced by the education levels of diabetic patients [22]. Rahimi et al. found a significant relationship between self-efficacy and educational level, occupational status, and income [23].

Age had a negative relationship with communication skills and educational method. The older patients had fewer scores in these domains. Cocchieri et al. [24] described older patients had worse self-care maintenance because they might be more impaired in adherence to self-care activities. Akyol et al. showed that the quality of self-care decreases with age [25]. However, Avaze et al. [26] did not find a relationship between age and self-care in the elderly with chronic diseases. Our study showed older patients were less educated than younger ones and this may be the main reason for their low impressment with self-care education.

There was no significant relationship between gender and the quality of self-care education. Sheikh-Sharafi et al. [27] and Abootalebi et al. [28] found no association between gender and self-care. However, Asadi et al. [29] Found a relationship between gender and COVID-19 self-care behaviors in students. The authors interpreted that because men are more likely to be outside, they require to follow health protocols more.

We found no relationship between the duration of hospitalization and the place of referral of patients with the quality of self-care education. We did not also find a relationship between the number of days of hospitalization and the place of referral of patients with the quality of self-care education. However, Calero-Molina et al. concluded that worse self-care is an independent predictor of heart failure hospitalization [30]. Shojaei et al. reported a relationship between the number of previous hospitalizations and the duration of the disease with self-care [21]. In our study, the majority (67.3%) of people were referred to public hospitals, and 59.2% were not hospitalized, which may have affected our results.

5. Conclusion

This study showed the high quality of self-care education of healthcare worker on recovered COVID-19 patients. The design, implementation, and evaluation of self-care education should be considered according to these results and affecting factors.

Limitations

This study showed the high quality of self-care education of healthcare personnel on recovered COVID-19 patients. It also determined the factors affecting the quality of self-care education. However, due to limitations, the results should be interpreted with caution. These limitations include the lack of a control group, non-participation of individuals according to the estimated sample size, self-reporting of data collection tools, the use of different educators and settings, causal uncertainty due to cross-sectional investigations, and the short follow-up time to evaluate self-care education.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of the Babol University of Medical Sciences (Code: IR.MUBABOL.REC.1399.181).

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Authors contributions

Conceptualization and supervision: Maryam Ghaemi-Amiri, Zeinab Gholamnia-Shirvani, and Z Hosseini-Motlagh; Methodology: Maryam Ghaemi-Amiri and Zeinab Gholamnia-Shirvani; Investigation, writing – original draft, and writing– review & editing: Maryam Ghaemi-Amiri, Zeinab

Gholamnia-Shirvani, and Z Hosseini-Motlagh; Data analysis: Hemmat Gholinia and Zeinab Gholamnia-Shirvani; Funding acquisition and resources: Maryam Ghaemi-Amiri, Zeinab Gholamnia-Shirvani, and Z Hosseini-Motlagh.

Conflict of interest

All authors declare no conflict of interest.

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