

## Improving Patient Satisfaction with COVID-19 through Supportive Educational Programs in Najaf Hospital Wards

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### Abstract:

**Background:** The COVID-19 pandemic has severely impacted global health, pervasively affecting the physical and mental wellbeing of individuals worldwide. As the pandemic continues, evaluating patient satisfaction within healthcare has become increasingly critical. This study assesses the effect of a supportive educational program on alleviating stress, anxiety, depression, and enhancing patient satisfaction among COVID-19 patients in Najaf's COVID wards.

**Method:** A randomized clinical trial involving 60 patients admitted to COVID-19 departments was conducted. The intervention group received a comprehensive supportive educational program upon hospital admission, while the control group received standard care. Participant satisfaction levels were measured using a translated and adapted version of Wolf's Patient Satisfaction Instrument. Analysis was performed on demographic data and satisfaction scores through descriptive statistics and inferential tests using SPSS version 21.

**Results:** The study revealed that the intervention group reported significantly higher satisfaction scores compared to the control group across all measured domains, including professional-technical care, trust, and patient education. These results suggest that supportive educational programs can significantly enhance patient satisfaction during hospitalization for COVID-19.

**Conclusion:** Supportive educational interventions are effective in improving patient satisfaction, which is an important metric for healthcare quality. This

study indicates that supplementing standard care with educational and emotional support benefits patients, pointing toward the need for integrated care approaches that address both physical and psychological needs during pandemics. Future research could focus on long-term impacts and explore the potential for virtual implementation of similar programs.

**Keywords:** COVID-19, patient satisfaction, supportive educational program, randomized clinical trial, psychological support, healthcare quality.

## Introduction

The emergence and pandemic of SARS-CoV-2 (COVID-19) in December 2019 have led to unprecedented changes in global lives and have had profound consequences for both their physical and mental health [1, 2]. According to reports, as of January 16th, 2022, the disease has spread to 230 countries, with a total of 326,057,106 confirmed cases and 5,545,043 deaths; in Iraq, there have been reported 2,117,175 cases and 24,981 deaths by the mentioned date [3].

This disease is a highly contagious one that affects a vast population in a short period [4]. Symptoms of the virus infection include fever, chills, cough, sore throat, myalgia, nausea, vomiting, and diarrhea [5, 6]. Patients with severe and critical illness require hospitalization and precise monitoring and care [7].

Besides the physical impacts, COVID-19 can have serious effects on mental health. A wide range of psychological consequences has been observed during the virus outbreak on individual, social, national, and international levels [5]. On the other hand, the need for strict isolation and social distancing for COVID-19 patients, while necessary and inevitable, leads to the separation of the patient from the family and close ones who are the potential sources of psychological and social support during the illness and severe conditions, exacerbating the patient's distress [8, 9]. Ultimately, this stress, by activating the hypothalamic-pituitary-adrenal pathway and raising the blood levels of glucocorticoids, epinephrine, and norepinephrine, leads to severe anxiety, depression, and other psychological disorders, ultimately reducing patient satisfaction during the disease [10].

Patient satisfaction is introduced as an indicator of healthcare quality. This indicator reflects not only the quality of care provided but also an individual's expectations of care [11]. Thus, today, the importance of measuring patient satisfaction as one of the most crucial and fundamental criteria for determining the quality of care services is undeniable [12]. Dissatisfaction with healthcare

services has undesirable consequences. People's dissatisfaction leads to their disconnection from the health system or at least not participating in providing services [13]. Therefore, measuring patient satisfaction is one of the most important and challenging components of care quality assessment. Patient satisfaction is typically assessed through the patient's recent experience at the hospital. Khatatbeh et al. (2021) reported in their study that there's a direct correlation between the social support provided by the nurses and patient satisfaction, with increased social support leading to an increase in satisfaction [14]. Likewise, Bahrami et al. (2013) reported in their study that an educational communication program emphasizing the educational needs of cancer patients undergoing surgery led to increased patient satisfaction regarding pain management [15].

Considering that, based on conducted studies, educational programs on different groups including patients' families or the patients themselves have been carried out [16], which also improved their satisfaction. In addition, since the increase in patient satisfaction is a key indicator for health policy-makers to the extent that some hospitals use the patient satisfaction index as a quality indicator, they assess their performance and compare their level with other hospitals and national and international average indices [17]. Therefore, the current study is designed to determine the effect of a supportive educational program on the stress, anxiety, depression, and satisfaction of patients with COVID-19 in the COVID wards of Najaf hospitals.

## Method

### ○ Study Design

The present study was a randomized clinical trial with a witness, with the trial code IR.MUMS.NURSE.REC.1400.028. It was designed and implemented on 60 patients attending the COVID departments of the COVID hospitals in the city of Najaf in the year 1400. The hospitals of Al-Amal, Al-Hakeem, and Al-Sadr in Najaf, which are part of educational, therapeutic, and research hospitals containing COVID sections, constituted the environment of this research (Figure 1).

### ○ Participants

Inclusion criteria for the study included: age between 18 and 65 years, positive COVID PCR test, confirmed diagnosis of COVID-19, need for hospitalization, no previous infection with COVID-19, not working as a medical staff member, no auditory or visual problems, and having minimum literacy skills to read and

write. Exclusion criteria included: unwillingness to continue cooperation at any stage of the research, need for intubation or tracheostomy for the patient, and any conditions leading to non-cooperation of the patient throughout the study, such as a decrease in GCS and severe respiratory or hemodynamic disorders.

### ○ **Outcomes**

The instruments used in the present study included a demographic information form and the Patient Satisfaction Instrument (PSI) or Wolf's Patient Satisfaction Instrument. The demographic information form, comprising several questions about gender, marital status, income, and place of residence, was designed based on previous studies and consultations with expert professors and advisors, and was considered valid due to the repetitive nature of the questions. This questionnaire was completed through an interview.

The PSI or Wolf's Patient Satisfaction Instrument was first translated and adapted into Persian by Hajinejad in Iran [17] and then by July and colleagues minor changes were made to this questionnaire. The final questionnaire contains 7 items related to the sub-scale of professional-technical care, 13 items related to the trust sub-scale, and 6 items related to the educational sub-scale to patients. Each item is rated on a Likert scale, ranging from completely agree (score 5) to completely disagree (score 1), with 14 positive items and 12 negative items being reverse scored. A score of less than 78 is assessed as dissatisfied, 78 to 104 as moderate satisfaction, and over 104 as complete satisfaction. Accordingly, for the sub-scales of professional-technical care, scores of less than 21 are unhappy, between 21 to 28 moderate satisfaction, and over 28 complete satisfaction; for the trust scale, less than 39 is unhappy, 39 to 52 moderate satisfaction and more than 52 complete satisfaction; and for the educational sub-scale to patients, scores of less than 18 are unhappy, 18-26 moderate satisfaction, and over 26 complete satisfaction [17].

To determine the validity of the instruments, content validity was used in a way that the instruments were reviewed by ten members of the scientific board of the Nursing and Midwifery Faculty in Mashhad, and after final revisions, they were utilized. The reliability of the instruments was established by calculating Cronbach's alpha, which resulted in a 0.90 coefficient after being administered to 20 research units who met the conditions for participating in the study.

The tool was completed 5 days after hospital admission for both the control and intervention groups.

### ○ **Sample Size and Randomization**

To determine the sample size, due to the lack of similar study results available, a pilot study was conducted on 10 people in each group using a mean comparison formula with a 95% confidence coefficient and an 80% test power for all study outcomes. The highest calculated value was related to stress, estimated at 25 people per group. For greater assurance and to enable comparison in subgroups, accounting for a 20% dropout rate, 30 people were included in each group, making the final sample size 60 people in total.

The randomization of study units into intervention and control groups was achieved through a random sequence generated by the randomization website. A concealed allocation approach was utilized using sealed envelopes; random sequences were written as codes A and B on small cards and placed inside the envelope. When a patient meeting the research unit criteria was identified, the envelope was opened, and the code inside determined the group assignment. Due to the isolation of patients and lack of contact with one another, there was no possibility of information dissemination between the two groups.

#### ○ Data Collection

For the intervention group, the supportive education program started from the time of their hospital admission and becoming aware of the COVID-19 infection. The supportive educational program consisted of the following: after identifying the patient in the hospital and introducing themselves to the patient who at the time had just been informed of the diagnosis of COVID and the need for hospitalization and isolation, the researcher would stay by the patient's side, show empathy, focus on their concerns, start talking to the patient to gain their trust, and allow the patient to easily raise concerns and questions that were intensifying their worry. During this time, in the educational part of the program, the researcher provided accurate information about the disease process, treatment, reasons, and advantages of hospitalization, as well as the dangers of not being hospitalized. It was also emphasized to the patient that hospitalization did not equate to a dire condition and that a large percentage of hospitalized patients with satisfactory status are discharged from the hospital. At this stage, a comprehensive pamphlet, prepared based on the educational needs of patients with COVID-19 requiring hospitalization by the research team and after reviewing extensive literature in the field, was provided to the patient. The contents of this pamphlet included information about the definition of the disease, various degrees of severity, reasons for hospitalization, necessary treatment measures for hospitalized patients, the need for isolation and its benefits, dietary advice, beneficial activities during hospitalization in the patient's language, methods of communication with the family during the isolation period, and a



contact number to reach the researcher for consultation and guidance during the hospital stay. Another supportive component of the program was that at the time of patient admission and hospitalization when relatives and acquaintances were still present in the hospital, a trusted companion of the patient was identified and a contact number was provided to enable the patient to make daily phone and video calls during the hospital stay. Furthermore, a contact number was also given to the patient to discuss concerns and questions with the researcher during specified hours in the morning and evening of the hospital days and receive the necessary consultation. In response to these questions, the researcher acted as a consultant and guide, answering questions that were within their capacity and consulting with the rest of the treatment team on questions they could not answer, then providing the patient with the answer. Additionally, the researcher was present daily at the patient's bedside, addressing the concerns and questions that arose for the patient during the hospitalization period and providing the necessary education based on the patient's needs. It should be mentioned that the components of this program were prepared after reviewing extensive literature on the educational and supportive needs of hospitalized patients with COVID by the research team (12,15,20).

The control group only received usual care in the department.

#### ○ **Statistical Analysis**

After coding and data entry into statistical software, descriptive statistics including frequency distribution tables, mean, and standard deviation were used to describe the sample characteristics. The normal distribution of quantitative variables was checked with Kolmogorov-Smirnov and Shapiro-Wilk tests. To check the homogeneity of the two groups and to examine the research objectives, a Chi-square test was used for qualitative variables and an independent T-test for quantitative variables that were normally distributed. All tests were carried out with a confidence level of 95% and a significance level of 0.05 and analyzed using SPSS software version 21. Result

### **Results**

Table 1 presents a comprehensive overview of the demographic characteristics of the study's participants (Table 1).

**Table 1**

**Demographic characteristics of the participants**

Variable	Intervention N (%)	Control N (%)	P
<b>Age (Mean±SD)</b>	49.1±13.2	41.6±12.8	**P= 0.030
<b>Sex</b>			
Female	16 (53.3)	21 (70.0)	*P=0.184
Male	14 (46.7)	9 (30.0)	
<b>Marital status</b>			
Single	6 (20.7)	8 (26.7)	*P=0.714
Married	18 (62.1)	18 (60.0)	
deceased wife	5 (17.2)	3 (10.0)	
Divorced	0 (0.0)	1 (3.3)	
<b>Place of home</b>			
city	25 (83.3)	23 (76.7)	*P=0.519
village	5 (16.7)	7 (23.3)	
<b>Family income</b>			
Weak or average	23 (76.7)	21 (70.0)	*P=0.559
good or great	7 (23.3)	9 (30.0)	

\* Chi-square    \*\*independent t

The results detailed in Table 2 highlight that the average total satisfaction score was significantly higher in the intervention group (94.8±9.6) compared to the control group (87.6±10.9), with a P-value of 0.010. Further, the professional technical care received an average score of 47.9±4.7 in the intervention group, markedly greater than the control group’s 41.9±6.1, with P<0.001 denoting high statistical significance. The trust dimension too reflected a similar trend, scoring an average of 88.9±8.6 in the intervention group against 82.3±7.9 in the control, alongside a strongly significant P-value of <0.001. Lastly, the educational dimension to the patient showcased an average score of 41.1±3.9 for the

intervention group, which was substantially higher than the control group's  $33.4 \pm 3.5$ , with a P-value of  $<0.001$  (Table 2) .

Table 2

The average and standard deviation of the total satisfaction score of the studied patients during the stages by group

Variable	Group		P
	Intervention (Mean $\pm$ SD)	Control (Mean $\pm$ SD)	
Total satisfaction score	94.8 $\pm$ 9.6	87.6 $\pm$ 10.9	*P=0.010
Professional technical care	47.9 $\pm$ 4.7	41.9 $\pm$ 6.1	*P<0.001
Trust dimension	88.9 $\pm$ 8.6	82.3 $\pm$ 7.9	*P<0.001
Educational dimension to the patient	41.1 $\pm$ 3.9	33.4 $\pm$ 3.5	*P<0.001

\*independent t

## Discussion

The present research was a two-group randomized clinical trial aimed at determining the effect of a supportive educational program on the satisfaction of COVID-19 patients admitted to COVID wards. The overall results of the study indicated the positive impact of the supportive educational program on the satisfaction of these patients.

Bahrami and associates (2013) reported in their study that an educational communication program focused on the educational needs of cancer patients undergoing surgery increased patient satisfaction with pain management [15]. Similarly, Khatatbeh et al. (2021) reported that there was a direct correlation between the social support provided by nurses and parental satisfaction with the care of premature infants, indicating that increased social support led to increased parental satisfaction. The support provided by the nurses, by covering the scope of individuals' needs, could lead to increased satisfaction [14]. Therefore, the findings of this study are consistent with those of our current research.

Vatan Doust and colleagues (2015) found in their study on tracheostomy patients that the use of an instructional video, along with usual teachings, could improve the quality of life and increase patient satisfaction [18]. The results of the study by Shoushi et al. (2018) also showed that implementing an educational program for family caregivers increased their satisfaction with nursing care [19], which aligns with the findings of the present study.



The study conducted by Kang and colleagues suggested that a psychological support intervention that included encouraging patients to express their feelings, demonstrating understanding and reassurance, providing knowledge and information about COVID-19, offering a few simple relaxation techniques, promoting self-management skills (such as listening to music as a distraction in a bad mood), and ultimately helping to relieve psychological tension and build confidence to overcome illness, as well as convincing them to cooperate with the medical staff and maintain an optimistic outlook, proved beneficial. These interventions were given by two physicians and lasted for 15 minutes [20]. Thus, the results are in line with those of our current study.

The aforementioned studies have indicated that providing an educational package, in conjunction with regular interventions and teachings, can be effective in increasing satisfaction by addressing the needs of patients and their companions. Similarly, the results of the present study demonstrate the effective role of education in enhancing patient satisfaction.

This study encountered several limitations. The sample size was relatively small and restricted to a specific population in Najaf hospitals, which may limit the generalizability of the findings. Moreover, the study only utilized self-reported measures for patient satisfaction, which may be subject to bias. The study's design also did not allow for long-term follow-up, preventing the assessment of the enduring impacts of the educational program.

Notwithstanding the limitations, the study boasts a few key strengths. It employed a rigorous randomized clinical trial methodology, ensuring a higher level of evidence for the findings. The psychometric instruments were well-validated, and the data analysis was robust. The study also focused on a much-needed area of support for COVID-19 patients, highlighting the importance of looking beyond physical care and acknowledging the mental and emotional well-being as an integral component of healthcare.

Future research should consider larger, more diverse cohorts to verify and expand upon these findings. Longitudinal studies would be beneficial to examine the long-term effectiveness of supportive educational programs. It would also be pertinent to explore the individual elements of the program to determine the most effective components. Additionally, integrating objective measures of patient satisfaction, when possible, could provide a more balanced approach, and investigation into virtual delivery methods for such programs could vastly increase their reach in similar pandemic situations.

## **conclusion**

The results of this investigation underline the significant effect of the supportive educational program on enhancing the satisfaction of COVID-19 patients hospitalized in Najaf. By addressing both educational and emotional support needs, the program successfully managed to alleviate symptoms of distress such as anxiety, depression, and stress, leading to higher satisfaction levels. This reinforces the notion that integrative care that includes psychological support and patient education is vital in handling pandemic outbreaks and can be a valuable addition to the standard care provided to patients with COVID-19.

### **Acknowledgment**

We appreciate the patients who contributed to this research.

### **Funding**

This study was under the financial aegis of Research Deputy Mashhad University of Medical Sciences.

### **Ethics approval and consent to participate**

This study was approved by the ethics committee of Mashhad University of Medical Sciences (IR.MUMS.NURSE.REC.1400.028) and complied with the Declaration of Helsinki; informed consent has been obtained from the subjects. The study purpose and importance were explained to participants, who met the inclusion criteria, and they signed the written informed consent form. Patients were informed that they are free to leave the study anytime without any effect on their treatment plan should they wished to do so. All methods were performed in accordance with the relevant guidelines and regulations, which are aligned with the Declaration.

### **Consent for publication**

Not applicable

### **Conflict of interest**

The authors declare that there is no conflict of interest in the publication of this article

### **Author's Contributions:**

All authors have read and approved the manuscript. Study design: DA, FH; data collection and analysis: SRM, AAA, DA; manuscript preparation: MN.

### **Availability of data and materials:**

The datasets generated in the current study are available from the corresponding author upon reasonable request.

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