EURASIAN JOURNAL OF HEALTH SCIENCES
e-ISSN 2651-3501

Eurasian JHS 2022; 5(1): 1-12

Research Article/
Araştırma Makalesi

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# Can Nurses Use Their Knowledge and Self-Efficaciousness to Transform the Pain Induced by the Coronavirus Pandemic? Coronavirus Induced Pain and Self-Efficaciousness of Nurses

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## ABSTRACT

This study was conducted in order to determine the effect of nurses' knowledge of the COVID-19 pandemic and their self-efficaciousness in emergency situations regarding the power of transforming pain. The data of the cross-sectional research was collected online via the questionnaire which was created by the researchers that measured nurses' socio-demographic qualities and their knowledge levels regarding the risk protocol applied towards the health personnel who contacts patients which are under suspicion of being infected by coronavirus and regarding the home care protocol applied towards individuals who are already infected by the virus. The Emergency Self-Efficaciousness Scale and the Transformative Power of Pain Scale were also used in order to collect research data. The relevant questionnaires were sent to nurses who were actively working in Turkey between the dates of 04.20.2020 and 05.20.2020, and consequently the response of 390 nurses were received. The data was evaluated with the SPSS 21.0 package program. While 62.8% of the nurses thought that the policies created against the pandemic were partially sufficient, 55.4% thought that they could not express themselves adequately during the pandemic process and 50.3% of them stated that they could find the strength in themselves to cope with the pandemic process. While 52.1% of the nurses defined "getting infected by the coronavirus" as a work accident, 47.9% of them stated that it was an occupational disease, whereas 47.7% of the nurses stated that patients with or without mild symptoms could receive care at home by their family members, 92.8% of them stated that all personal protective equipment should be given to caregivers, and 43.3% of the nurses stated that the number of caregivers should be limited. A statistically significant relationship was found between the Competence and Interest sub-dimensions of the Emergency Self - Efficaciousness Scale and of the Transformative Power of Pain Scale which were filled out by the nurses who participated in the study. It was seen that nurses who were knowledgeable, competent, willing, and interested in the fight against COVID-19 had the power to positively transform their pain during this difficult pandemic process.

**Key words:** Coronavirus, Knowledge, Nursing, Power.

# Hemşireler Koronavirüs Pandemi Acısını Dönüştürmede Bilgi ve Özyeterliliklerini Kullanabilmekte midir? Hemşirelerin Koronavirüs Acısı ve Özyeterlilikleri

## ÖZ

Bu çalışma Türkiye'deki hemşirelerin COVID-19 salgınındaki bilgilerinin acil durumlarda öz yeterlilikleri ve acıyı dönüştürme gücüne etkisini belirlemek amacıyla yapılmıştır. Kesitsel tipteki araştırmanın verileri araştırmacılar tarafından oluşturulan; hemşirelerin sosyodemografik özelliklerini, koronavirüs şüphesi olan hastayla temas eden sağlık çalışanına uygulanan risk protokolüne ve koronavirüs ile enfekte olan bireylere uygulanan evde bakım protokolüne yönelik bilgi düzeylerini ölçen anket formu ile Acil Durumdaki Öz Yeterlilik Ölçeği ve Acının Dönüştürücü Gücü Ölçeği kullanılarak online toplanmıştır. Türkiye'de aktif olarak çalışan hemşirelere 20.04.2020-20.05.2020 tarihleri arasında gönderilerek 390 hemşireden geri dönüş sağlanmıştır. Veriler SPSS 21.0 paket programı ile değerlendirilmiştir. Hemşirelerin %62,8'i pandemiye karşı oluşturulan politikaları kısmen yeterli olduğunu düşünürken, %55,4'ü pandemi sürecinde kendini yeterince ifade edemediğini düşünmekte ve %50,3'ü pandemi süreciyle baş edebilecek gücü kendinde bulmaktadır. Hemşirelerin %52,1'i koronavirüse yakalanmayı iş kazası olarak tanımlarken, %47,9'u meslek hastalığı olarak ifade etmekte olup; %47.7' si hafif semptom gösteren/göstermeyen hastaların aile üyeleri tarafından evde bakım alabileceğini, %92.8'i bakım verenlere kişisel koruyucu ekipmanın tamamının verilmesi gerektiğini, %43.3'ü hasta kişiye bakım verenlerin sayısının sınırlı olması gerektiğini belirtmektedir. Çalışmaya katılan hemşirelerin; Acil Durumda Öz Yeterlilik Ölçeği'nin Yetkinlik ve İlgi alt boyutları ile Acının Dönüştürücü Gücü arasında istatistiksel olarak anlamlı bir ilişki bulunmuştur ($p<0.05$). COVID-19 ile mücadelede bilgili, yetkin, istekli ve ilgili olan hemşirelerin bu zorlu pandemi sürecindeki acılarını olumlu boyuta dönüştürme gücüne sahip oldukları görülmüştür.

**Anahtar kelimeler**: Bilgi, Güç, Hemşirelik, Koronavirüs.

DOI: 10.53493/avrasyasbd.980179 Received: 07.08.2021 Accepted: 19.10.2021

## INTRODUCTION

As it is known, COVID-19, a virus which has affected many countries around the world, caused many people to get sick and furthermore, lead to high mortality rates. While some of the patients are treated in hospitals and intensive care units, others who are under the age of 50, who are thought to not require hospitalization, who have mild clinical findings and who do not possess certain risk factors which may cause a severe course of COVID-19 (such as hypertension, diabetes, chronic lung disease, chronic heart disease, chronic kidney failure or Immunodeficiency etc.) were treated at home. In addition, it is ensured that certain COVID-19 cases are monitored at home until the symptoms are subsided, by initiating appropriate treatment when necessary (Ministry of Health, 2020).

The pandemic, which creates a heavy responsibility in terms of treatment and care in the field of health, has also affected healthcare workers in many dimensions (Xu et al., 2020). Nurses, who play a key role in the fight against COVID-19 among the healthcare professionals, are unfortunately one of the groups who are under the biggest risk in terms of being infected with the pathogen that caused the pandemic. Among the risks and dangers faced by healthcare professionals, many factors such as psychological stress, extreme fatigue, and occupational burnout, as well as exposure to the pathogen have been reported to prevent the provision of qualified and high-class care (Wenzhi et al., 2020; Zhao et al., 2020; Xiang et al., 2020). In addition to the care of sick individuals, nurses also perform multiple roles, administrative duties and coordination affairs, intensive and long-term work, while experiencing anxiety of self-contamination, and the fear of infecting their loved ones and children (Sun et al., 2020).

The sudden emergence of the disease that causes such fear and anxiety, the uncertainty of its course, the long and demanding treatment process, and the high mortality rates are physiologically and psychologically backbreaking and painful for the nurses who take an active part in combating the disease (Man et al., 2020). Nurses, who have to continue their duties despite the existing adverse conditions, face pain not as a destructive and suppressive element, but as a transformative, empowering and professional motivation factor, making it necessary to benefit from the transformative power of pain.

The transformative power of pain is described as the personal belief which signifies that positive changes can be experienced after difficulties, negative, painful and traumatic life events (Dinçer at al., 2015; Joshanloo, 2014). This situation, which is also defined as combative growth, refers to the effort to demonstrate that painful events, difficulties and disasters do not always and only create negative consequences, but also can perform a function that enhances the human coping power and strengthens character (Peterson et al., 2008). The ability to comprehend the situation that creates pain and self-efficaciousness can be considered as the most important factors that increase the power to transform pain. In a pandemic situation, the most important way to master and deal with the situation that creates pain is to increase self-efficaciousness and knowledge about the cause of pain in states of emergencies. In order to increase the knowledge level of an individual regarding a subject; first, it is necessary to measure the knowledge level concerning the related subject. While this process continues, it becomes important to determine the knowledge levels of nurses about COVID-19 in order to overcome their lack of knowledge and to carry out researches to protect their mental health through the development of coping mechanisms by activating the necessary psychological support systems (Sun et al., 2020; Mo et al., 2020).

It is thought that measuring nurses' self-efficaciousness in emergency situations and their ability to transform the pain caused by the process through organizing training programs in related fields will help to create a database in order to properly manage the existing disease and to be prepared for similar situations which may arise in the future.

## MATERIALS AND METHODS

### Research Type

This study is designed as a cross-sectional research.

### The Population and Sample of the Research

When the population was 100,000,000, 384 people were considered sufficient for $\alpha$ = 0.05 significance level and

d = ± 0.05 sampling error p = 0.5 q = 0.5 (Yazıcıoğlu, 2011). Given the number of nurses in Turkey, the sample of 390 subjects was seen sufficient in terms of representing the nurses.

### Data Collection

The online questionnaire form prepared by the researchers using Google forms was sent to the nurses who were working actively in public and private health institutions via online networks such as E-mail, Whatsapp, Facebook and Instagram. The study was completed with 390 nurses, who voluntarily agreed to participate in the study between the dates of 04/20/2020 and 05/20/2020.

### Data Collection Tools

The introductory information form designed by the researchers, the COVID-19 information form which was prepared by using the current COVID-19 healthcare workers guide published by the Ministry of Health in the 25th of March, 2020, The Workers' Emergency Self-Efficaciousness Scale and The Transformative Power of Pain Scale were used as data collection tools (Ministry of Health, 2020; Yalçın, 2018; Dinçer et al., 2015).

• **The Workers' Emergency Self-Efficaciousness Scale:** The factor structure of the scale, and its Turkish validity-reliability study were conducted by Yalçın (Yalçın, 2018). The scale was developed in order to evaluate the self-efficaciousness of healthcare professionals who implement emergency plans. It is a 5-point Likert-type scale with a total of 19 items consisting of three different factors: 'competence', 'interest' and 'desire', whose structures were verified in terms of reliability and validity within the analysis. The scoring of the items were determined as "Strongly agree = 5", "Agree = 4", "Undecided = 3", "Disagree = 2" and "Strongly disagree = 1". If the Competence Factor; in cases, where the employee's answers are below 18 points; if the Request Factor; in cases, where the score is 18 and above, and if the Interest Factor; in cases, where the score is below 10 points, the related subjects should not be selected for the Emergency Teams. After evaluating the "desire" items, which were defined as the primary factor, the other items were scored. The figures representing the responses of the participants to the items in the scale were collected, and it was determined whether they were suitable for being a team member. The scale which was used in the current study, has been adapted to the COVID-19 pandemic based on the Employees' Self-Efficaciousness in Emergencies (Yalçın, 2018).

• **The Transformative Power of Pain Scale:** This scale was developed by Joshanloo to measure the beliefs about whether suffering serves as a positive personal transformation, development, and maturation (Joshanloo, 2014). The validity and reliability study of the Turkish version of the Transformative Power of Pain Scale was conducted by Dinçer et al. (2015), and the Cronbach Alpha reliability coefficient of the scale was found to be 0.84. It is a 7-point Likert-type scale (scored from 1 = Strongly Disagree to 7 = Strongly Agree) with a total of 19 items. High scores on the scale indicate high beliefs that the painful experiences serve for positive personal transformation (self-development and maturation).

### Evaluation of the Data

The data was evaluated via the SPSS 21.00 package program. To determine whether the data is normally distributed; histogram graph, coefficient of variation, skewness and kurtosis values, detrended graph and Kolmogorov Smirnov values were examined. Since the skewness and kurtosis values of the data were in the range of -3 and +3, the coefficient of variation was ≤30, and the detrended graph was in the form of scatter, the evaluation of the data was proceeded with the normality tests (Mayers, 2013; Tabachnick and Fideli, 2001). Cronbach's alpha coefficient was used to investigate the reliability of the scale. In the study, t test, number and %, correlation test, One-way ANOVA test for three or more group comparisons, LSD for homogeneous distribution for post-hoc analysis, Dunnet T3 for non-homogeneous distribution were used.

### Ethical Considerations of the Research

Necessary explanations about the purpose of the research and about its importance were made to the nurses who were included in the research, at the beginning of the online questionnaire, and their consent was obtained. In order for the research to be applied online, an approval was obtained

from the Turkish Republic of Ministry of Health Scientific Research Center (dated 19.05.2020 and numbered 2020-05-15T22_05_19), and an approval was taken from The University Ethics Committee (dated 04.30.2020 and numbered 2020/142).

## RESULTS

The mean age of the participants in the study was 28.1 ± 6.7. 81.3% of the participants were women, 61.8% of them were single, 85.1% of them were not pregnant, 55.6% of them had undergraduate degrees, and 68.5% of them had no children. A very weak statistically significant negative correlation was found between the age of the nurses and the Transformative Power of Pain ($p < 0.05$). The Self-Efficaciousness Interest sub-dimension score (14.9±3.3) of the Emergency Workers, who have children, was found to be significantly higher ($p < 0.05$) (Table 1).

While the working year averages of the participants in the study was 6.5 ± 6.3., it was found that 61.3% of the employees were working at a state hospital and 25.1% of them were working at intensive care units. While 67.4% of the nurses received information about COVID-19 through in-service training; 62.8% of them considered the policies against the pandemic partially sufficient, 50.8% of them found the managerial practices towards the pandemic partially sufficient, 55.4% of them thought that they could not express themselves sufficiently during the pandemic process and 50.3% of them found the strength to cope with the pandemic. While 52.1% of the nurses defined the process of being infected with Coronavirus as a "work accident", 47.9% of them expressed it as an "occupational disease" (Table 2).

The Nurses' competency level score in emergencies was calculated as 33.9 ± 7.3; their desire level score 17.2±4.5 and their interest level score was 14.2±3.4. In addition, nurses' pain transforming power score was calculated as 24.4±7.5.

**Table 1.** The Score Distributions of Socio-demographic Characteristics of the Nurses, the Self-Efficacy and the Transformative Power of Pain Scale

| Characteristics | | n (%) | Self Efficacy in Emergency Situation | | | Transformative Power of Pain |
|---|---|---|---|---|---|---|
| | | | Competence | Desire | Interest | |
| **Age** | (X±SD=28,1±6,7) | 390 (100) | r: -0.35, p:0.48 | r: 0.61, p:0.23 | r: 0.02 , p:0.62 | **r: -0.12, p:0.01** |
| **Gender** | Female | 317 (81.3) | 34.3±6.7 | 17.3±4.3 | 14.4±3.1 | 24.6±7.7 |
| | Male | 73 (18.7) | 32.2±9.2 | 17.0±5.5 | 13.4±4.3 | 23.4±7.0 |
| **Test and significance** | | | t: 1.84 , p :0.06 | t: 0.31 , p: 0.75 | t: 1.87 , p: 0.06 | t: 1.84 , p:0.06 |
| **Education level** | High school | 64 (16.4) | 34.7±7.1 | 18.2±5.4 | 14.8±3.7 | 25.0±8.5 |
| | Associate degree | 58 (14.9) | 34.1±7.9 | 16.7±4.1 | 14.6±3.7 | 24.4±7.1 |
| | Bachelor degree | 217 (55.6) | 34.0±7.1 | 16.9±4.3 | 14.1±3.2 | 24.7±7.1 |
| | Graduate | 51 (13.1) | 32.35±7.5 | 17.9±4.6 | 13.9±3.5 | 22.1±8.3 |
| **Test and significance** | | | F: 1.10 , p: 0.34 | F: 1.83 p: 0.14 | F:1.08 , p:0.35 | F:1.80 , p: 0.14 |
| **Marital status** | Married | 149 (38.2) | 34.3±5.7 | 17.5±4.6 | 14.6±3.1 | 24.1±7.7 |
| | Single | 241 (61.8) | 33.6±8.1 | 17.0±4.5 | 14.0±3.6 | 24.6±7.4 |
| **Test and significance** | | | t: 0.95 , p:0.34 | t:1.02 ,p: 0.30 | t: 1.85 , p: 0.06 | t: -0.62 , p: 0.53 |
| **Pregnancy** | Yes | 11 (2.8) | 31.6±8.9 | 17.0±3.6 | 15±3.7 | 24.4±7.5 |
| | No | 332 (85.1) | 34.0±7.4 | 14.1±4.6 | 14.2±3.5 | 24.5±7.6 |
| **Test and significance** | | | t: -1.05 , p: 0.29 | t: -0.07, p: 0.94 | t: 0.68 , p: 0.49 | t: -0.03 , p: 0.97 |
| **Have a child** | I have | 123 (31.5) | 34.3±5.9 | 17.6±4.8 | 14.9±3.3 | 23.7±7.8 |
| | I have not | 267 (68.5) | 33.7±7.8 | 17.0±4.4 | 13.9±3.4 | 24.7±7.4 |
| **Test and significance** | | | t:0.76 , p: 0.44 | t: 1.13 , p: 0.25 | **t:2.52 , p: 0.01*** | t: -1.18 , p:0.23 |

**Table 2.** The Score Distributions of Professional Characteristics of Nurses, the Self-Efficacy and Transformative Power of Pain Scales

| Professional Characteristics | | n (%) | Self Efficacy in Emergency Situation | | | Transformative Power of Pain |
|---|---|---|---|---|---|---|
| | | | Competence | Desire | Interest | |
| **Working year** | (X±SD=6,5±6,3) | 390 (100) | r: -0.01, p:0.79 | r: 0.05 , p:0.27 | r: 0.06 , p:0.23 | r: -0.09, p:0.06 |
| **Healthcare institution** | Local hospital | 239 (61.3) | 33.7±1.2 | 16.9±4.2 | 14.1±3.4 | 24.3±7.3 |
| | Family health center | 25 (6.4) | 31.7±9.1 | 16.7±5.7 | 13.4±4.1 | 25.1±8.6 |
| | University hospital | 72 (18.5) | 34.2±5.9 | 18.4±4.2 | 14.4±3.0 | 23.7±7.9 |
| | Private hospital | 54 (13.8) | 35.4±7.9 | 17.1±5.4 | 14.9±3.7 | 25.4±7.8 |
| Test and significance | | | F:1.61 , p:0.18 | F:2.08 , p: 0.10 | F: 1.39 , p: 0.24 | F: 0.62 , p: 0.60 |
| **Clinic studied** | Emergency clinic | 89 (22.8) | 34.1±7.5 | 18.0±4.8 | 14.3±3.7 | 25.2±7.4 |
| | Critical care | 98 (25.1) | 34.7±7.1 | 17.8±4.9 | 14.5±3.1 | 25.2±7.5 |
| | Medical/surgical clinic | 67 (17.2) | 31.9±7.4 | 17.0±4.0 | 13.5±3.4 | 22.9±7.5 |
| | Corona quarantine service and ICU | 58 (14.9) | 34.3±6.6 | 16.3±4.2 | 14.3±3.2 | 24.2±7.1 |
| | Others | 78 (20) | 34.0±7.4 | 16.5±4.2 | 14.4±3.7 | 23.8±8.1 |
| Test and significance | | | F: 1.61 , p: 0.17 | F: 2.07 , p: 0.08 | F: 1.00 , p: 0.40 | F: 1.27, p: 0.27 |
| **Where did you get information about COVID-19?** | In-service training | 263 (67.4) | 34.3±7.3 | 17±4.4 | 14.3±3.5 | 24.4±7.3 |
| | Education Ministry of Health | 14 (3.6) | 30±11.7 | 15.3±6.1 | 12.5±5.1 | 23.6±6.6 |
| | TV, internet, social media | 93 (23.8) | 33.8±6.3 | 18.0±4.3 | 14.3±3.0 | 25.7±7.4 |
| | No information | 20 (5.1) | 31.8±6.7 | 18.4±5.2 | 14.1±3.2 | 18.5±9.9 |
| Test and significance | | | F: 2.25 , p: 0.08 | F: 2.43 , p:0.06 | F: 1.21, p:0.30 | **F: 5.12, p: 0.002** |
| **Are the policies sufficient in the COVID-19 Outbreak** | Sufficient | 75 (19.2) | 33.5±9.5 | 16.3±5.8 | 13.7±4.1 | 25.1±6.9 |
| | Partially sufficient | 245 (62.8) | 34.1±6.4 | 17.3±4.0 | 17.3±3.1 | 25.1±7.5 |
| | Insufficient | 70 (17.9) | 33.7±7.6 | 17.7±4.8 | 14.5±3.7 | 21.1±7.6 |
| Test and significance | | | F:0.19 , p: 0.82 | F: 1.91, p: 0.14 | F: 1.23, p: 0.29 | **F: 8.08, p: 0.000** |
| **Administrative control competence in the hospital** | Sufficient | 93 (23.8) | 34.1±8. | 16.3±5.9 | 14.2±3.6 | 24.6±7.6 |
| | Partially sufficient | 99 (25.4) | 33.1±8.1 | 18.3±4.7 | 13.9±3.6 | 22.7±7.8 |
| | Insufficient | 198 (50.8) | 34.2±6.3 | 17.1±4.1 | 14.4±3.2 | 25.1±7.3 |
| Test and significance | | | F: 0.73 , p: 0.47 | **F: 4.46, p: 0.01** | F: 0.67, p: 0.51 | **F: 3.52 , p: 0.03** |
| **Self-expression during the epidemic process** | Yes | 59 (15.1) | 33.8±8.6 | 16.5±4.8 | 14.2±3.7 | 25.0±8.5 |
| | No | 216 (55.4) | 33.8±7.3 | 17.6±4.4 | 14.1±3.5 | 23.8±7.8 |
| | Partially | 115 (29.5) | 34.2±6.5 | 16.9±4.5 | 14.4±3.1 | 25.2±6.5 |
| Test and significance | | | F: 0.14 , p: 0.86 | F: 1.69, p: 0.18 | F: 0.26, p: 0.76 | F: 1.51, p: 0.22 |
| **The power to cope with the epidemic perceived by nurses** | Yes | 196 (50.3) | 34.4±7.8 | 16.7±4.9 | 14.4±3.6 | 25.3±7.7 |
| | No | 22 (5.6) | 29.2±8.5 | 17±4.9 | 11.6±3.9 | 17.5±7.0 |
| | Partially | 172 (44.1) | 34.0±6.2 | 17.8±4.0 | 14.4±3.1 | 24.2±7.0 |
| Test and significance | | | **F: 5.11 , p: 0.00** | F: 2.67, p: 0.07 | **F: 6.75, p: 0.00** | **F: 11.20, p: 0.00** |
| **Getting sick** | Occupational disease | 187 (47.9) | 33.1±7.8 | 17.0±4.4 | 14.1±3.6 | 24.3±7.6 |
| | Work accident | 203 (52.1) | 34.6±6.7 | 17.4±4.7 | 14.4±3.3 | 24.4±7.5 |
| Test and significance | | | **t: -2.02,p: 0.04** | t:- 0.75,p: 0.45 | t: -0.91, p: 0.36 | t: -0.16, p: 0.86 |
| **TOTAL** | | 390 (100) | 33.9±7.3 | 17.2±4.5 | 14.2±3.4 | 24.4±7.5 |

There is a statistically significant difference between nurses' knowledge of Coronavirus and the Transformative Power of Pain ($p < 0.05$). The pain conversion score of the nurses who received in-service training (24.4±7.3), and information from social media (25.7±7.4) were found to be significantly higher than the score of the nurses who were lacking the knowledge regarding Coronavirus (18.5±9.9) ($p < 0.05$) (Table 2).

There is a statistically significant difference between the thoughts of the nurses in terms of the adequacy of the policies made for the coronavirus pandemic and the Transformative Power of Pain ($p < 0.05$). The pain conversion score of the nurses, who found the policies adequate (25.1±6.9) and partially sufficient (25.1±7.5), was significantly higher than the score of the nurses who found the policies inadequate (21.1±7.6) ($p < 0.05$). There is a statistically significant difference between the nurses' ideas concerning the administrative controls in the hospital for the Coronavirus pandemic being sufficient, and the Self-Efficacy Desire sub-dimension of Emergency Employees and the Transformative Power of Pain ($p < 0.05$). The scores of the nurses who found the administrative controls in the hospital insufficient (18.3±4.7) were significantly higher than the scores of the nurses who found the self-efficacy in the emergency case sub-dimension sufficient (16.3±5.9), and partially sufficient (17.1±4.1). Additionally, the pain transformation score of the

**Table 3.** Risk protocols applied to healthcare professionals in contact with patients with suspected COVID-19

| Ministry of Health risk protocol | Risk protocols applied to healthcare professionals in contact with patients with suspected COVID-19 | Assessment of nurses' risk protocols | | |
|---|---|---|---|---|
| | | High Risk n (%) | Medium Risk n (%) | Low Risk n (%) |
| Medium Risk | Item 1) Works with a mask. It is monitored with active symptom monitoring. If the symptom develops, PCR testis done on the day it develops and on the 7the day if it does not. | 132 (33.8) | 188 (48.2) | 70 (17.9) |
| High Risk | Item 2) It is monitored by being isolated for 7 days at home with active symptom follow-up. If the symptom develops, the PCR test is done on the day it develops and on the 7th day if it does not. | 141 (36.2) | 176 (45.1) | 73 (18.7) |
| Low Risk | Item 3) The total time is worked with a mask to complete the 14th day after contact and symptom follow-up is performed. | 141 (36.2) | 138 (35.4) | 111 (28.5) |
| High Risk | Item 4) Hydroxychloroquine (3 days) is started. With active symptom follow-up, they are isolated and monitored at home for 7 days; if the symptom develops, the PCR test is done on the day of the symptom, if not on the 7th day. | 173 (44.4) | 150 (38.5) | 67 (17.2) |
| Medium Risk | Item 5) If the PCR test is negative on the 7th day, the total time is completed to the 14th day after contact and active symptom monitoring is performed. | 139 (35.6) | 174 (44.6) | 77 (19.7) |
| Low Risk | Item 6) Total time, up to 14 days after contact, PCR test is performed if symptoms develop. If the PCR test is positive, it is managed in accordance with the definitive case definition. | 241 (61.8) | 104 (26.7) | 45 (11.5) |
| High Risk | Item 7) If the PCR test is positive on the 7th day, Chiloquin treatment is done for 5 days. | 247 (63.3) | 105 (26.9) | 38 (9.7) |

nurses who found administrative controls partially sufficient (25.1±7.3) was found to be significantly higher than the pain transformation score of the nurses, who found administrative controls inadequate (22.7±7.8) ($p < 0.05$) (Table 2).

There is a statistically significant difference between nurses' ability to cope with the pandemic and their levels of Competence, Interest sub-dimensions and the Transformative Power of Pain ($p < 0.05$). Nurses who find the power to cope with the pandemic on their own (Competence: 34.4±7.8) (Interest: 14.4±3.6) (Power of the Pain: 25.3±7.7), and nurses who partially find the aforementioned power (Competence: 34.0±6.2) (Interest: 14.4±3.1) (Strength of Pain: 24.2±7.0) have significantly higher competence, interest and transformative power of pain scores than those who cannot find the strength to cope with the pandemic (Competence: 29.2±8.5) (Interest: 11.6±3.9) (Power of the Pain: 17.5±7.0) degrees ($p < 0.05$). There is a statistically significant difference between the nurses' evaluation of being infected with COVID-19 as a work accident or occupational disease and with the Competence sub-dimension ($p < 0.05$). The averages of those who perceive being infected with COVID-19 as a work accident (34.6±6.7) were found to have significantly higher mean scores, than the nurses who regarded getting infected with COVID-19 as an occupational disease ($p < 0.05$) (Table 2).

Looking at the level of knowledge of the nurses about the risk protocol determined by the Ministry of Health for the healthcare workers who come into contact with the patients who are suspected to have been infected with the Coronavirus, 48.2% of the participants evaluated the 1st item as medium risk; 45.1% of the participants evaluated the 2nd item as medium risk; 36.2% of the participants evaluated the 3rd item as high risk; 44.4% of the participants evaluated the 4th item as high risk; 44.6% of the participants evaluated the 5th item as medium risk; 61.8% of the participants evaluated the 6th item as high risk, and 63.3% of the participants evaluated the 7th item as a high risk protocol (Table 3). 47.7% of the nurses participated in the study stated that the patients with mild symptoms/no symptoms can receive home care from their family members; 99.7% of them stated that the houses of the patients should be ventilated if they take home care; 97.2% of the nurses participating in the study admitted that the caregivers should not be chosen from the risky groups; 99% of the nurses participating in the study carried the opinion that the caregivers should pay attention to their personal hygiene; 92.8% of the nurses participating in the study put forward that the caregivers should be given all related personal protective equipment; 43.3% of the nurses participating in the study stated that the number of

**Table 4.** Home care protocols applied to individuals infected with COVID-19

| Home care of patients with/ without mild symptoms | n | % |
|---|---|---|
| In home care, information should be given about ventilation of the house and isolation of the sick person. | 389 | 99.7 |
| It should be emphasized that the caregiver should pay attention to its personel hygiene. | 386 | 99 |
| Care should be taken that caregivers are not in the risky group. | 379 | 97.2 |
| Caregivers should be given all personal protective equipment. | 362 | 92.8 |
| I think family members can be cared for at home. | 186 | 47.7 |
| The number of caregivers of the sick person should be limited. | 169 | 43.3 |
| Caregivers should be informed that they can use the masks several times in home care. | 167 | 42.8 |
| I think healthcare professionals can provide home care. | 145 | 37.2 |
| Not suitable for home care. | 59 | 15.1 |

caregivers who are giving care to the sick person should be limited and 42.8% of the nurses participating in the study admitted that the caregivers were using the masks several times in home care (Table 4). There was a weak statistically significant positive relationship between nurses' Competence and the Interest sub-dimension of the Emergency Employees' Self-Efficacy Efficaciousness Scale scores and the scores obtained through the Transformative Power of Pain ($p < 0.05$) (Table 5).

**Table 5.** The relationship between the Workers' Self-Efficacy in Emergencies Scale and the Transformative Power of the Pain Scale

| | Self-Efficacy of Emergency Workers | | |
|---|---|---|---|
| | Competence | Desire | Interest |
| Power of Pain | **r: 0.26 , p: 0.000*** | r: 0.006 , p:0.90 | **r: 0.18, p:0.000*** |

## DISCUSSION

Based on the nature of their profession, nurses frequently deal with people who die, sick people, suffering patients and their relatives. Therefore, nurses have become more frequently experienced in the conditions mentioned due to the pandemic affecting our country, as well as all over the world. It is expected that the nurses who constantly face emergencies related to human life have a certain level of self-efficaciousness in difficulties. However, the extent of this self-efficaciousness is unknown, since it is constantly effected by the rapidly increasing number of patients due to the pandemic. The high mortality rates and the feeling of loss of relatives of the deceased also cause a certain amount of pain for nurses. Nurses who have to continue to do their duty no matter what happens in their environment, have to increase their self-efficaciousness in emergencies by using their knowledge about the pandemic, and they have to succeed in transforming the pain that infects and deeply affects them to a positive phenomenon. In order to develop all these skills, it is important to measure the knowledge levels of nurses on clinical or home care and protection about COVID-19, and to determine their self-efficaciousness and pain transformation skills in emergency situations. Many studies have been conducted to determine the psychological effects of this challenging process over the nurses (Zhao et al., 2020; Sun et al. 2020; Man et al., 2020; Mo et al., 2020; Makino et al., 2020; Schecter et al., 2020). However, no study has been conducted on the power of transforming pain.

The COVID-19 pandemic causes bio-psycho-social changes in humans, as it is a situation that fluctuates suddenly, causes deaths and the treatment is still on the process of discovery (Karampelias et al., 2020). This process can be serious not only for patients infected with COVID-19, but also for healthcare professionals, who care for the patients, and bear the brunt of the crisis (Kesner & Horáček, 2020). The knowledge levels and expectations of nurses who make up the majority of the healthcare professionals, have a key role in this process; changes in nurses' living spaces and their thoughts about the nursing profession during the COVID-19 process are highly influential factors on both their own health and the health of people who need care.

The nurses' level of knowledge about COVID-19 and ways of protection in terms of this disease has a direct impact on both nurses' likelihood of becoming infected and transmitting the disease to others. In the study conducted by Nemati et al. the sources from which nurses get the most information were social media, Ministry of Health and WHO (Nemati et al., 2020; WHO, 2015). In this study, it was determined that 67.4% of the nurses obtained information about COVID-19 through in-service training by their institution, and it was also determined that 23.8% of them received the relevant information from TV, the internet and social media. Considering the seriousness of the situation, it is very important to provide reliable information on social media as well as the leadership of the relevant institution and the administration of this reliable information over education.

According to a study, it has been concluded that maintaining and developing positive emotions, and getting rid of negative ones during a pandemic have positive reflections on the mental health of the healthcare worker, on the outlook of the pandemic, and on patient care (Wang et al., 2020). More than half of the nurses participating in the study stated that the policies during the COVID-19 pandemic were partially sufficient. Although countries have created and urgently implemented training programs for healthcare workers on combating the pandemic and in order to facilitate patient care, factors such as the sudden occurrence of the epidemic and its rapid spread all over the world can be shown as the reasons behind why these policies have been considered as partially sufficient. In addition, it has been found that the nurses who see the policies during the epidemic as sufficient and partially sufficient, have higher ability to transform the pain which was caused by the pandemic. It can be thought that the preservation of positive emotions of nurses who find the implemented policies sufficient and partially sufficient, may increase their power of transforming pain into a positive phenomenon.

It is stated that in the cases of sudden health events such as a pandemic process, inclusive leadership may create an environment of psychological security, and through this mechanism, leaders can help reduce the psychological discomfort experienced by employees during difficult conditions (Zhao et al., 2020). It was found that approximately half of the nurses participating in the study thought that the administrative control of the hospital was partially sufficient, and it was found that this group's power of transforming pain was higher than the other groups. This finding can be explained by trying to close the gap, which is thought to arise in the case of administrative control perceived as partially adequate, with the personal and extra efforts of the nurses.

It is stated that the positive and negative feelings of the nurses who were at the forefront during the epidemic, were intertwined and that theses feelings co-existed. While negative emotions were more dominant and intense in the early period of the pandemic, negative emotions gradually began to be replaced by positive emotions later on (Sun et al., 2020). More than half of the nurses participating in the study stated that they could not express themselves during the pandemic. Working with a more intense pace of work than usual, and the feeling of uncertainty accompanying this emotional confusion, can be interpreted as factors which negatively affect the self-expression skills of the nurses.

In a study conducted to preserve the psychological well-being of healthcare professionals, it is recommended to create an appropriate self-awareness in order to remind them not to neglect their care, to help establish social support systems, and to reduce comments on working hours and the outcome of the disease (Wenzhi et al., 2020). Half of the nurses participating in the study stated that they have the power to cope with the pandemic, and almost half of them partially felt this power. Within the scope of the policies for coping with the pandemic, preventive measures and rules to be followed in patient care were emphasized in the trainings given to healthcare professionals, and the practices for the coping strategies of the employees were somewhat overshadowed (Terzioğlu, 2020). The justification for this finding can be that healthcare workers overcame the shock at the beginning of the pandemic, and got used to the existing situation and developed the ability to manage this process more effectively. As an expected finding, it was found that the competence self-efficaciousness of the nurses who stated that they could cope with the pandemic, was higher than the other groups. It was found that the nurses who stated that they had the power to cope with the pandemic and felt this power partially, had similar self-efficaciousness levels in emergency situations, and the difference between the groups was found to be significant ($p = 0.000$). An individual who feels that he/she has the power to cope with the existing situation, is expected to feel competent and interested in the same situation.

COVID-19 is an important pandemic that needs attention worldwide. However, when looking at the history of pandemics, it is noticed that 21 pandemics have occurred and affected the humanity so far, resulting in the death of many people. It is seen that leprosy, plague, cholera, influenza, AIDS, SARS, Ebola, and today COVID-19 are among the pandemics that which affected the world the most (Kieney et al., 2014; General Directorate of Occupational Health and Safety, 2020). Although most of these diseases have not become very common in our country, it is

expected that nurses, who care for patients and do their work with scientific data accumulated in the same information pool with a common perspective, will be familiar with fighting similar pandemics in the different parts of the world. In the present study, it was determined that nurses, who stated that they had the power to cope with the pandemic, had a high pain transforming power. It is thought that the familiarity of the aforementioned information affected the nurses' perspective on the pandemic and their attitude towards the related disease in the later stages of the pandemic process.

The illness that occurs when a person is harmed by his work, is called an occupational disease. The most prominent features of an occupational disease are; bad working conditions, disruption of health within a certain period of time, temporary or permanent malfunction in terms of physical or mental wellbeing (Editorial, 2020). It was found that the competence levels of nurses who consider being infected with COVID-19 as a work accident were high. Exposure of nurses to the disease is an expected situation when the relevant precautions and measures – which should be taken institutionally or individually – are not taken. An individual, who has a comprehensive and sufficient education and who has professional equipment, can feel competent in terms of the management of an infectious disease as a result of her profession and education.

Nurses have the knowledge, skills and creativity to provide the care which is needed in all stages of the existing pandemic trajectory, as well as within the scope of all kinds of health problems. However, the rapid spread of the disease, unclear data about the disease, lack of materials and equipment can cause troubles in problem solving from time to time for the nurses as well as other healthcare professionals (Zaka et al., 2020). In terms of the applied risk protocols concerning healthcare workers, It is the Ministry of Health which determines that who could contact the patient who is suspected of being infected with the Coronavirus, and when the risk protocol evaluations of the nurses were compared, it was seen that the knowledge level of the nurses in this area was slightly above the average. Factors such as the sudden onset of the epidemic, its spread to the masses in a short time, the in-service trainings and the lack of the necessary preparations for material supply, as well as factors such as the risk of infection and transmission may have reduced the effectiveness of the trainings provided, and prevented the nurses from having much higher knowledge levels.

During the pandemic process, the high demand for medical care and treatment increased the workload of the healthcare professionals. Moreover, materials and their disposal and bed capacity limits led to the need for home care of the patients with mild symptoms. In line with this requirement, home care protocols have been established by official institutions for the specified patient group (Ministry of Health, General Directorate of Public Health 2020; Calhoun & Tedeschi, 2004). It was found that the nurses participating in the study have a high level of knowledge about home care protocols applied to individuals infected with the Coronavirus. Establishing home care protocols for patients with mild symptoms and the implementation of these protocols coincides with the later stages of the pandemic. Updating the information about the pandemic, this initially caused anxiety and fear in the whole society, including healthcare workers. Additionally, the development of coping mechanisms caused nurses to increase the sense of domination and competence in the situation. Therefore, the relevant situation can be cited as a reason for the high level of knowledge of the nurses about home care protocols.

The transformative power of pain is the experience of positive psychological changes and transformations after compelling life events and crises (Jayawickreme & Blackie, 2016). The phrases "resistance to suffering builds endurance, endurance builds character, and character builds hope" or "what does not kill me makes me stronger" exactly describes the transformative power of pain (Cai et al., 2020). According to a study, continuing to inform healthcare personnel by the hospital administration and the government, the provision of infection control manuals, special equipment and facilities are among the motivating factors for healthcare professionals in present pandemics and are thought to be motivating factors in pandemics to come (Que et al., 2020).

In this study, it was determined that the nurses' competence and interest levels in emergency situations are high, but their desire levels are low, and the transformative power of pain is high. Additionally, the transformative power of

pain increases as their level of competence and interest increases. It is thought that the level of aspiration decreases in conditions such as the fear of infections and fatal diseases. As the development of familiarity with the epidemic and its consequences eventuate over time; factors such as nurses' development of coping strategies, motivating behaviors within the team, and social support provided by the team can be justified in the positive relationship between competence, interest and the transformative power of pain.

## CONCLUSION

It has been determined that the vast majority of nurses have the correct information and behavior sets regarding Coronavirus. In addition, it has been concluded that nurses who have sufficient knowledge about COVID-19 also possess high levels of competence and interest in emergencies, especially in combating the pandemic process, however, their desire levels are low, and the transformative powers of pain are high, and as their level of competence and interest increase, the transformative power of pain increases as well. In line with these results, it is recommended to continue the education of nurses who are in the front lines of the field of health (especially in states of emergencies) in emergencies, in order to increase their self-efficaciousness levels, and to support them in a psychological manner.

## AUTHOR CONTRIBUTION

Idea/Concept – Z.G., B.Ç.; Design – Z.G., B.Ç.; Consultancy – Z.G.; Data Collection and/or Processing – B.Ç.; Analysis and/or Interpretation – Ç.A., Z.G., B.Ç.; Literature Review – Ç.A. Writing The Article - Ç.A., Z.G., B.Ç.; Critical Review – Ç.A., Z.G.

## CONFLICT OF INTEREST

All authors of this article declare that there is no conflict of interest. Also, we have no relevant financial interests in this manuscript.

## FINANCIAL DISCLOSURE

The authors declared that this study has received no financial support.

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