THDD 2023, 4 (2), 140-149
Olgu Sunumu

COVİD-19 ve MIS-C Tanılı Çocuk Hastanın Hemşirelik Bakımı: Olgu Sunumu

Nursing Care Of A Pediatric Patient Diagnosed With COVID-19 And MIS-C: A Case Report

Nalan Karaoğlan[1], Aslı Çatıkoğlu[2], Hatice Yıldırım Sarı[3], İlker Devrim[4]

Öz

Bu olgu sunumu çocuklarda ateş, öksürük, nefes darlığı ve solunum güçlüğü ile kendini gösterebilen ve zatürreye, akut solunum yetmezliğine, böbrek yetmezliğine ve hatta ölüme neden olabilen COVID-19 enfeksiyonuna sekonder MIS-C (Multisistem İnflamatuar Sendrom) tanılı bir çocuğun hemşirelik bakımının açıklanması amacıyla hazırlanmıştır. 6 yaşındaki erkek hasta üçüncü düzey çocuk hastanesinin acil servisine ateş, karın ağrısı ve el ve ayakta döküntüler nedeniyle başvurmuş, COVID-19 hızlı antikor testi pozitif saptanmış ve intaniye servisine yatışı yapılmıştır. COVID-19 kliniğinde 4 gün izlenen hasta klinik tablosunun ağırlaşmasının ardından yoğun bakımda 4 gün süreyle izlendikten sonra tekrar COVİD-19 kliniğine yatırılmıştır. Yatış fizik muayenesinde lenfadenopati ve peroral lezyon, tonsillerde hiperemi, çilek dili, gözlerde kızarıklık, bilateral avuç içleri ve bilateral ayak tabanı ile lateral kısımda eritemli döküntüler saptanmıştır. Sonrakigünlerde diyare, kusma, sinüs taşikardisi, hipotansiyon gelişen hastaya İVİG, dopamin infüzyonu ve furosemid infüzyonu ve diğer ilaçlar uygulanmıştır. Olgu hipertermi, doku perfüzyonunda bozulma, sıvı volüm eksikliği, aktivite intoleransı, diyare, beslenmede dengesizlik: vücut gereksiniminden az beslenme/riski, enfeksiyon bulaştırma riski ve sekonder enfeksiyon gelişme riski, öz bakım eksikliği, anksiyete ve sosyal etiketlenme hemşirelik tanıları ile izlenmiştir. Bilinci açık, vital bulguları stabil olan, ek şikâyeti olmayan, kültürlerinde üreme olmayan ve klinik bulgularında gerielme gözlenen hasta önerilerle taburcu edilmiştir.

Anahtar Kelimeler: COVID-19, çocuk, hemşirelik bakımı, MİS-C

Abstract

This case report was prepared to explain the nursing care of a child diagnosed with MIS-C (Multisystem Inflammatory Syndrome in Children) secondary to COVID-19 infection, which can present with fever, cough, shortness of breath and difficulty breathing in children and can cause pneumonia, acute respiratory failure, renal failure and even death. A 6-year-old boy was broughtto the emergency department of a tertiary pediatric hospital due to complaints such as fever, abdominal pain and rashes on the hands and feet. Following his COVID-19 rapid antibody test, which came positive, he was admitted to the infectious diseases clinic of the hospital. The child was initially observedin the COVID-19 clinic for 4 daysand later was transferred to the pediatric intensive care unit (PICU) due to his clinical picture worsening. After the observation of his treatmentin the PICU for 4 days, he was retransferred to the COVID-19 clinic. On his physical examination at admission, lymphadenopathy, perioral lesion, hyperemia of the tonsils, strawberry tongue, redness of the eyes, and erythematous rashes on the bilateral palms, bilateral soles and lateral parts weredetected. In the following days, intravenous immunoglobulin (IVIG), dopamine infusion and furosemide infusion and other drugs were administered to the patient because he developed diarrhea, vomiting, sinus tachycardia, and hypotension symptoms. The patient was treated in accordance with the diagnoses of hyperthermia, impaired tissue perfusion, fluid volume deficiency, activity intolerance, diarrhea, fluid volume deficiency, nutritional imbalance: undernutrition/risk of body requirement, risk of transmission of infection and risk of developing secondary infection, lack of self-care, anxiety and social labelling. The patient who was conscious, had no additional complaints and had no growth in his blood cultures, whose vital signs were stable and clinical findings showed improvement was discharged with recommendations.

Keywords: COVID-19, child, nursing care, MIS-C

[1]**Correspondence Author,** Expert Nurse, Izmir Dr. Behçet Uz Children's Hospital, Pediatric Infection Clinic, Izmir, Turkey. E-mail: nalankaraoglan74@gmail.com, ORCID: 0000-0003-4596-9125
[2]Nurse, Izmir Dr. Behçet Uz Çocuk Uz Children's Hospital, Pediatric Infection Clinic, Izmir, Turkey, ORDIC: 0000-0003-4013-6730
[3]Professor Doctor, Izmir Katip Çelebi University, Faculty of Health Sciences Department of Nursing, Izmir, Turkey. ORCID: 0000-0002-4795-7382
[4]Professor Doctor, Izmir Dr. Behçet Uz Children's Hospital, Pediatric Infection Clinic, Izmir, Turkey. ORCID: 0000-0002-6053-8027
Received: 05 Nisan 2023, Accepted: 15 Ağustos 2023, Published: 23 October 2023

Introduction

COVID-19 infection, one of the leading health problems of the last century, emerged in China in 2019 and spread all over the world. It was declared a pandemic by the World Health Organization in March 2020.[1]

Despite its short history, scientific publications on it have progressed rapidly, and the available proven information has shown that COVID-19 infection progresses with severe respiratory tract problems in advanced-age patients and patients with a history of chronic disease.[2] In the publications on COVID-19 in children, it was stated that in some of the children whose illness was confirmed by virological tests, the course of COVID-19 was asymptomatic. It was reported that of children with a symptomatic course of COVID-19 infection, 5% had dyspnea and hypoxia and 0.6% had acute respiratory distress and multi-organ failure, and that the incidence of these symptoms in children was lower than that in adults.[3] Results regarding COVID-19 have been reported from different countries. As of November 2022, the total number of COVID-19 cases in Turkey is observed as 17,042,722.[4] For instance, in Norway, 10% of children hospitalized due to respiratory tract infection were positive for coronavirus.[5] It has been observed that coronavirus infection progresses severely in younger children, and in children having an underlying pulmonary disease or immunosuppressive conditions. [6]In their modelling on the COVID-19 pandemic, Robertson et al. determined that the pandemic would increase the mortality rate in children aged <5 years every month by 9.8% to 44.7% in 118 countries.[7] In April 2020, Kawasaki disease associated with COVID-19 infection was reported in children first in England, and then in other countries.[8] While the Covid-19 pandemic nurses had the same feelings as all humanity, such as fear of contamination, catching COVID-19, isolation and loneliness, they fought resolutely to provide quality care to their patients despite the shortage of resources and increasing demand due to the pandemic.[9] In May 2020, the World Health Organization (WHO) defined the following symptoms as Multisystem Inflammatory Syndrome in Children (MIS-C): fever higher than 38 degrees, severe clinical picture requiring hospitalization, multi-organ-system involvement (Cardiovascular: shock, high troponin, high BNP, abnormal ECO findings, arrhythmia; Respiratory: pneumonia, ARDS, pulmonary embolism; Kidney: renal failure; Neurological: convulsion, stroke, aseptic meningitis; Hematological: coagulopathy, elevated D-dimer level; Gastrointestinal: elevated liver enzymes, diarrhea, ileus; Dermatological: erythroderma, mucositis, other rash), absence of an alternative diagnosis and the presence of previous or recent SARS-CoV-2 infection.[8] Because uncertainties

regarding the MIS-C and the process and impact of COVID-19 pandemic remain, sharing information about the nursing care of patients gains importance. In this article, a patient followed with the diagnosis of MIS-C and the nursing care provided for him is presented. Informed consent was obtained from the child and his family for the case report.

Case

A 6-year-old male patient, born in 2013, presented to the emergency department of a tertiary-level children's hospital with complaints of fever, abdominal pain, and rash on hands and feet. Because the rapid antibody test for SARS-CoV-2 was positive, he was admitted to the hospital. The patient, who was followed up in the COVID-19 pandemic clinic for 4 days, was referred to the PICU because his clinical picture worsened. He was followed up in the PICU for 4 days and then he was hospitalized again in the COVID-19 pandemic clinic.

History of the case: The patient, whose pregnancy and delivery history was normal, was born at term. He weighed 3860 g at birth. He cried as soon as he was born, did not experience cyanosis and/or any other problem at birth. He was breastfed. His growth and development were normal. His immunization was performed in accordance with his age. The patient, who did not have a history of any chronic disease, was hospitalized once for adenoidectomy. His mother and father were alive and healthy, and were employed. The patient has no known history of contact with patients with COVID-19. His 4-year-old brother (or sister) who had diarrhea, vomiting, fever a week before he was hospitalized recovered from the disease at home without presenting to the hospital.

Physical condition: The patient's weight was 32 kg (95th percentile), and his height was 125 cm (75-90th percentile). His temperature was between 36.8 and 38.7 degrees Celsius, his respiration rate was between 26 and 38 breaths per minute, and his heart rate was between 127 and 136 per minute. His lowest and highest blood pressure values were recorded as 72/41 mmHg and 95/56 mmHg respectively. His physical examination at the admission demonstrated that he had lymphadenopathy and peroral lesion, hyperemia of the tonsils, strawberry tongue, redness of the eyes, and erythematous rashes on the bilateral palms and bilateral soles and lateral parts. The patient had an erythematous rash on the anterior surface of the left knee, and oedema in the peripheral hands and feet. His other system examinations were normal. One day after he was hospitalized, the patient had 7 defecations and 2 bilious (green yellow) vomiting in 24 hours. On the next day, he developed sinus tachycardia. On the second day after his hospitalization, he developed hypotension, cardiac evaluation was made, and he was referred to the pediatric intensive care unit because viral myocarditis was considered. In the period before he was hospitalized in the pediatric intensive care unit, intravenous fluid therapy was

administered to the patient, and IVIG therapy of 2 g/kg was given to him. Dopamine infusion and furosemide infusion were started in the patient who developed hypotension and sinus tachycardia, he was monitored, and blood gas was monitored. Antipyretic was given when his fever was high.

The patient, who was followed up in the pediatric intensive care unit for 4 days, was sent back to the infection clinic and followed up there. In this process, the general condition of the patient was moderate, he was conscious and well hydrated. He had +2 oedema in the lower extremities. His chest X-ray was normal and blood gas levels were as follows: pH: 7.57, PCO_2:24, HCO_3:25.1. In his echocardiography, mild insufficiency of the tricuspid valve was detected, and the patient was administered joule solution since his phosphorus level was 3.4. The patient's general condition was good on the 8th day after his hospitalization in the pediatric intensive care unit, and his vital signs were observed in the room setting as stable. Table 1 summarizes the patient's picture during the period of his hospitalization in the COVID-19 pandemic clinic before and after his admission to the pediatric intensive care unit.

Vital Signs: The patient's vital signs were monitored during his stay in the clinic. His vital signs were monitored on the days when he had signs of cardiac dysfunction at least every four hours, depending on his general condition. The vital signs monitored were fever, pulse rate, respiratory rate, blood pressure, oxygen saturation, and pain. As is known, the most prominent symptoms of COVID-19 are fever and respiratory distress. [3]In addition to frequent fever monitoring, when the patient had sub-febrile fever, his clothes were taken off, only his underwear was left on, and he drank lukewarm drinks. The peripheral lukewarm application was performed in the armpit, back of the knee and inguinal region with 30-32°C water and he was given antipyretic orally if his fever was ≥38°C. The heart rate increases with the increase in metabolic rate due to high fever, as well as cardiac problems.[10] His hypotension was due to cardiac failure associated with cardiac involvement. Dopamine infusion, which started from 5 mcg/kg/min due to hypotension, was increased to 10 mcg/kg/min. Dopamine functions as a neurotransmitter in the central nervous system. Dopamine acts by releasing norepinephrine from dopaminergic adrenergic receptors and from nerve endings. It has dose-dependent inotropic and vasopressor effects.[11] Among the side effects of dopamine are cardiac arrhythmias, coronary syndromes due to vasoconstriction, bleeding due to mucosal ischemia or complications due to translocation in the intestinal flora.[11] His vital signs which were greatly affected; thus, they played an important role in monitoring the general condition of the patient in order to detect the side effects of dopamine early. In their study conducted in England, Riphagen et al.[12] monitored patients with COVID-19 and observed that the patients had high fever and hypotension as in our case. In our

study, the patient's vital signs were monitored in terms of nursing diagnoses of hyperthermia, impaired tissue perfusion, fluid volume deficiency, and activity intolerance, and nursing interventions were performed.[13]

Table 1. The Patient's Characteristics before and after his Hospitalization in the Intensive Care Unit

Characteristics	Before his Hospitalization in the Intensive Care Unit	After his Hospitalization in the Intensive Care Unit
Weight, Body Mass Index	31.4 kg (>95 p)	32kg (>95 p)
Vital signs	Temperature: 37.7°C Respiratory rate: 26 Blood pressure: 83/48mmHg Pulse rate: 138 Oxygen saturation: 98-99	Temperature: 36.6°C Respiratory rate: 26 Blood pressure: 95/56mmHg Pulse rate: 127 Oxygen saturation: 98-99
Fluid balance, Intake, Output, Urine output:	Intake: +2168 Output: -2140 Balance: +28 Urine output: 2.7 cc/m^2	Intake:+1155 Output: -1230 Balance: +75 Urine output: 1.5 cc / m^2
Medication	Ertapenam: for 4 days Omeprazole: for 14 days Meropenem: for 12 days Vancomycin: for 6 days Aspirin: for 14 days Ritonavir: for 10 days Inotrope dopamine 10mcg/kg 1000cc m^2 total fluid Joule solution	Omeprazole: for 14 days Meropenem: for 12 days Aspirin: for 14 days Inotrope dopamine: for 10mcg/kg Teicoplanin: for 8 days Ritonavir AugmentinS 600 mg 7 days (at home after discharge)
Imaging results	Abdominal USG (compatible with gastroenteritis) ECO: (everyday) MR 1 degree, ST-T change PAAC THORACIC CT: image compatible with COVID	ECO: (everyday) PAAC
Laboratory test results	CRP: 36 mg/dl Procaltinini:18.9 mg/dl APTT: 25.4 PT: 17 INR: 1.48 D-Dimer: 1482 mg/dl Troponin: 0.197 mg/dl CKMB: 1.51 mg/dl Na: 127 mg/dl K: 3.4 mg/dl P: 2.2 mg/dl ASO: 135 mg/dl Blood gas: PH 7.37,PCO_2 25.7,HCO_3 31.7, Albumin: 2.09 mg/dl CMVIGM(+) HEMOGRAM: High levels of leukocytosis and neutrophilia Full urinalysis: 1027 Density Protein and glucose (+)	P: 3.4 mg/dl HGB: 9.9 mg/dl Leukocyte: 14.550 mg/dl CRP: 1.3mg/dl Blood gas: PH 7.57,PCO_2 24,HCO3 25.1, INR:1.19 D-Dimer: 779 mg/dl APTT: 31.3 PT: 13.6 Sedimentation: 65
Microbiology test results	COVID-19 rapid antibody test: (+) Multiplex PCR 3 times (-)	
Clinical hospitalization process	Between April 30, 2020 and May 04, 2020 COVID-19 clinic 1 (Infection)	Between May 08, 2020 and May 15, 2020 COVID-19 clinic 1 (Infection)

Between May 04, 2020 and May 08, 2020 Pediatric Intensive Care

Nursing Care and Discussion

Fluid Volume Balance: The patient was monitored for moderate dehydration due to vomiting and diarrhoea that started one day after his admission to the clinic. In this process, the patient was administered 0.9% NaCl and 5% Dextrose liquid, and a 7.5% potassium chloride (KCl) ampoule (10 ml per 500 ml) was added to the liquid. The daily fluid requirement of the patient was calculated as 2000-2500 millilitres per square meter due to mild dehydration because his oral intake was not good before diarrhoea and he lost fluid during diarrhoea and vomiting.[14] The 24-hour infusion of fluid was administered via a peripheral intravenous catheter, and the catheter site was monitored every six hours for complications of infiltration, extravasation, and phlebitis, as required by the clinical routine. The patient was infused 2gr/kg IVIG when signs of insufficiency continued after IVIG infusion (blood pressure (76/43mmHg), 5mcg/kg/min dopamine infusion and, for the replacement of deficient electrolytes, KPO4 were added to the fluid, and 3X5 cc of Joule solution was administered. Since the albumin value was 2.9, 1mg/kg, Albumin infusion and Furosemide were administered to the patient and he was followed for fluid intake and output. In the patient, interventions related to fluid volume balance were performed taking the nursing diagnoses of diarrhoea and fluid volume deficiency into account.[13]

Nutrition: The patient had nutritional problems and risks due to gastroenteritis, infection and fluid volume imbalance. Nutrition monitoring was carried out in order to cooperate with his parents at all the stages of the nutrition plan and to ensure a consistent feeding approach. The patient'sweight was measured daily. The amount of his nutrition intake was recorded. Because his oral intake was not good in the first days of hospitalization, and fluid loss occurred in the following days, intravenous fluid therapy was continued. His blood total protein level was 2.9 g/lt: therefore, he was provided with parenteral nutrition through albumin infusion. In cooperation with the dietitian, 3x200cc Resource food was given to him so that he could receive high-calorie, high-protein food in accordance with the appropriate calorie calculation for his weight. Meal times suitable for the patient were planned as main and snack meals (3 main and 3 snacks) and total oral nutrition was started. A comfortable environment was provided for dining and his room was ventilated. No interventions likely to cause pain, nausea or discomfort to the patient before the meal were performed. Attention was paid to his oral hygiene (brushing teeth after meals, oral care). Imbalance in nutrition: The patient was followed up due to the nursing diagnosis of risk of nutrition less than the body requirement.[13]

Physical Mobility: The patient was mobile in bed for the first 8 days. In the following days, he was mobilized within the room.

Patient Safety Practices: The patient was monitored with the diagnosis of trauma risk, secondary infection risk and infection transmission risk under the heading of patient safety practices. [13]In accordance with hospital protocols, all patients are followed up with standard forms routinely used in the hospital in terms of risk of falling and pressure sores. The patient's risk of falling was high, especially in the period when he was monitored for hypotension.[15] However, his risk of falling was low in the following days. Infection control measures were taken in terms of the risk of infection transmission and the risk of developing secondary infection. The use of personal protective equipment was provided, the patient and his family wore masks, and the number of visitors was limited. The patient room and clinic were disinfected in accordance with infection precautions. Health personnel used personal protective equipment, disposable materials were preferred for the patient, and materials such as stethoscopes were kept in the patient's room and were used only for that patient. All areas of the clinic, which were disinfected with Ultraviolet Germicidal Irradiation (UVGI) before the COVID-19 infection, were disinfected twice a day with two methods [UVGI and High Efficiency Particulate Air (HEPA) fan robot device] during the pandemic.[16]

17

Self-care: In the daily routine care, the patient was provided with hand-face care and oral care twice, once in the morning and once in the evening, and he was given a bed bath twice a week. Oral care was performed in the form of normal tooth brushing because the grading of oral mucosa was 0. The patient was monitored upon the nursing diagnosis of the risk of lack of self-care.[13]

Anxiety and Social Labeling: Due to a contagious disease and hospitalization, the patient and his family experienced a process that can be defined as social labelling and social isolation. Visitor restrictions, the patient's and his attendant's not being able to leave the room, and knowing that there is a risk of infection were sources of anxiety. One of the factors that caused the patient to suffer anxiety is that while the health personnel gave care to the patient, they wore personal protective equipment. The equipment initially caused the child to experience fear. During this process, he refused the interventions to be performed from time to time, did not

cooperate, and expressed his feelings by saying "I am bored, get me out of here, why are you keeping me here". In several guidelines, it is recommended that parents and caregivers should recognize the different behaviours that children may display due to fear and anxiety and should develop an appropriate approach because children may experience anxiety and fear due to the COVID-19 pandemic and may express their fears and concerns differently.[18] In a study conducted in China, various psychological distress symptoms such as fear, anxiety, agitation, sleep problems, and decreased appetite were determined in children aged 3-18 years during the COVID-19 pandemic.[19] The patient was informed about the reasons for the restrictions in his room and that this process was applied to every patient for general precautionary purposes. Clear and understandable explanations were given to the patient and his family about each procedure. He was allowed to move into the room and to make video calls with his family members by mobile phone. Materials were provided for him to draw pictures in his room. He was encouraged to collaborate with the health personnel during treatment and drug administration (taking oral medication himself, measuring his weight by turning on the scale in weight monitoring, brushing his teeth, verbally rewarding at the end of all this, sticking smiley face stickers on his clothes, etc.). He was allowed to watch informative educational broadcasts prepared by the Ministry of Health and the Ministry of National Education on the television in his room. These interventions not only met the patient's and his family's information needs but also reduced their anxiety. The patient was monitored with the nursing diagnoses of Anxiety and Social Labeling.[13]

In each of the interventions performed during his hospitalization, consent was obtained from the patient and his family. In the following situations, informed consent was obtained: when information about the patient and contact with COVID-19, medical interventions, general hospitalization rules, endotracheal intubation, central venous catheter, and interventional procedures in the pediatric intensive care unit was given. During the discharge, the patient was informed about the COVID-19 quarantine process at home as explained in the home follow-up and information form, and his family was informed about his illness and its treatment. They were given information about the dose and duration, administration way, and side effects of medication to be taken at home such as Acetylsalicylic acid tablets, Sucralfate suspension, and Amoxicillin and clavulanic acid drugs. In what cases he should present to the nearest health institution are explained. He was told to present to the inpatient and cardiology outpatient clinic a week later. The patient's SARS-CoV-2 molecular test result was negative 3 times. Written consent was obtained from his family that they would bring the child to the hospital on the specified date and that all the family members would be isolated at home for 14 days.

Conclusion

On the last day of his hospitalization, the patient's general condition was good and his vital signs were stable in the room atmosphere. During the examination, his general condition was good, vital signs were within normal limits, and no additional problem was detected. The patient was conscious, had stable vital signs, had no additional complaints and had no growth in cultures, and his clinical findings regressed. Thus, he was discharged with recommendations.

Financing

This research received no specific support from funding monies from the public, commercial, or not-for-profit sectors.

Conflict of Interest Statement

Authors declare that there is no conflict of interest.

References

1. World Health Organization (WHO) [Internet]. Breasfeeding. [updated 2020 sep 22]. Available from: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-COVID-19---11-march-2020.
2. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, & et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China. JAMA. 2020;323(11):1061-1069. doi:10.1001/jama.2020.1585
3. Cruz AT, & Zeichner SL. COVID-19 in Children: Initial Characterization of the Pediatric Disease. Pediatrics. 2020;145(6):e20200834
4. Sağlık Bakanlığı (İnternet). Genel Koronavirüs Tablosu, [updated 2022 Nov]. Available from: https://covid19.saglik.gov.tr/TR-66935/genel-koronavirus-tablosu.html.
5. Heimdal I, Moe N, Krokstad S, Christensen A, Skanke LH, Nordbo SA, & et al. Human coronavirus in hospitalized children with respiratory tract infections: a 9-year population-based study from Norway. J Infect Dis. 2019; 219(8):1198–1206.
6. Ogimi C, Englund JA, Bradford MC, Qin X, Boeckh M, & Waghmare A. Characteristics and outcomes of coronavirus infection in children: the role of viral factors and an immunocompromised state. J Pediatric Infect Dis Soc. 2019;8(1):21–28.
7. Roberton T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, & et al. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. Lancet Glob Health. 2020;8(7):901-908. https://doi.org/10.1016/S2214-109X(20)30229-1
8. Türk MOK, Akkuş CH, Atay G, Erdoğan S, Çakır D, Salı E, & Sözeri B. Akut batın kliniği ile başvuran COVID-19 ilişkili pediatric multisistemik inflamatuvar sendrom (MIS-C) olgusunda plazmaferez tedavi etkinliği. Jornal Umraniye Pediatr 2021;1(1):14–19.

9. Lulgjuraj D, Hubner T, Radzinski N, & Hopkins U. Everyone is Someone's Child: The Experiences of Pediatric Nurses Caring for Adult COVID-19 Patients. J Pediatr Nurs. 2021;60:198-206. doi: 10.1016/j.pedn.2021.06.015.
10. Davies P Maconochie I. The relationship between body temperature, heart rate and respiratory rate in children. Emerg Med J. 2009; 26(9):641-3.
11. Altıntaş ND, İskit AT. Vazoaktifve İnotropik İlaçların Doğru Kullanımı. Yoğun Bakım Dergisi 2006;6(4):179-190.
12. Riphagen S, Gomez X, Gonzalez-Martinez C, Wilkinson N, & Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic. Lancet, 2020;395:1607-1608. doi: 10.1016/S0140-6736(20)31094-1.
13. Erdemir F. Hemşirelik tanıları. Nobel Tıp Kitabevi, Ankara, 2012:10-700.
14. Çavuşoğlu H. Çocuk Sağlığı Hemşireliği Cilt 2. 10.baskı. Ankara: Sistem Ofset Basımevi; 2013:373-375
15. Yıldırım S, Yöntem SÇ, Sarı HY, Kaplan T, & Bektaş M. BUÇH Pediatrik BasıYarası Risk Tanılama Aracı'nın Geliştirilmesi (Development of a Diagnostics Tool for Pediatric Pressure Ulcer Risk in Behçet Uz Children's Hospital (BUCH)), Sağlık Akademisyenleri Dergisi 2014;1(1):57-66.
16. Devrim İ, Bayram N. Infection control practices in children during COVID-19 pandemic: Differences from adults. Am J Infect Control, 2020;48(8):933-939. doi: 10.1016/j.ajic.2020.05.022.
17. Sağlıkta Kalite Standartları-Hastane, 2016, SKS-Hastane (Versiyon-5; Revizyon-01) (Accessed date:22.09.2020)
18. UNICEF [Internet]. Breasfeeding [updated 2020 Sep 22] Available from: https://www.unicef.org/india/media/3401/file/PSS-COVID-19-Manual-ChildLine.pdf.
19. Jiao WY, Wang LN, Liu J, Fang SF, Jiao FY, Pettoello-Mantovani M, & et al. Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic. J Pediatr. 2020;221:264–266.e1. doi: 10.1016/j.jpeds.2020.03.013